CHUGAI

Roche Group

Annual Report 2017

Fiscal year ended December 31, 2017

INNOVATION
BEYOND IMAGINATION

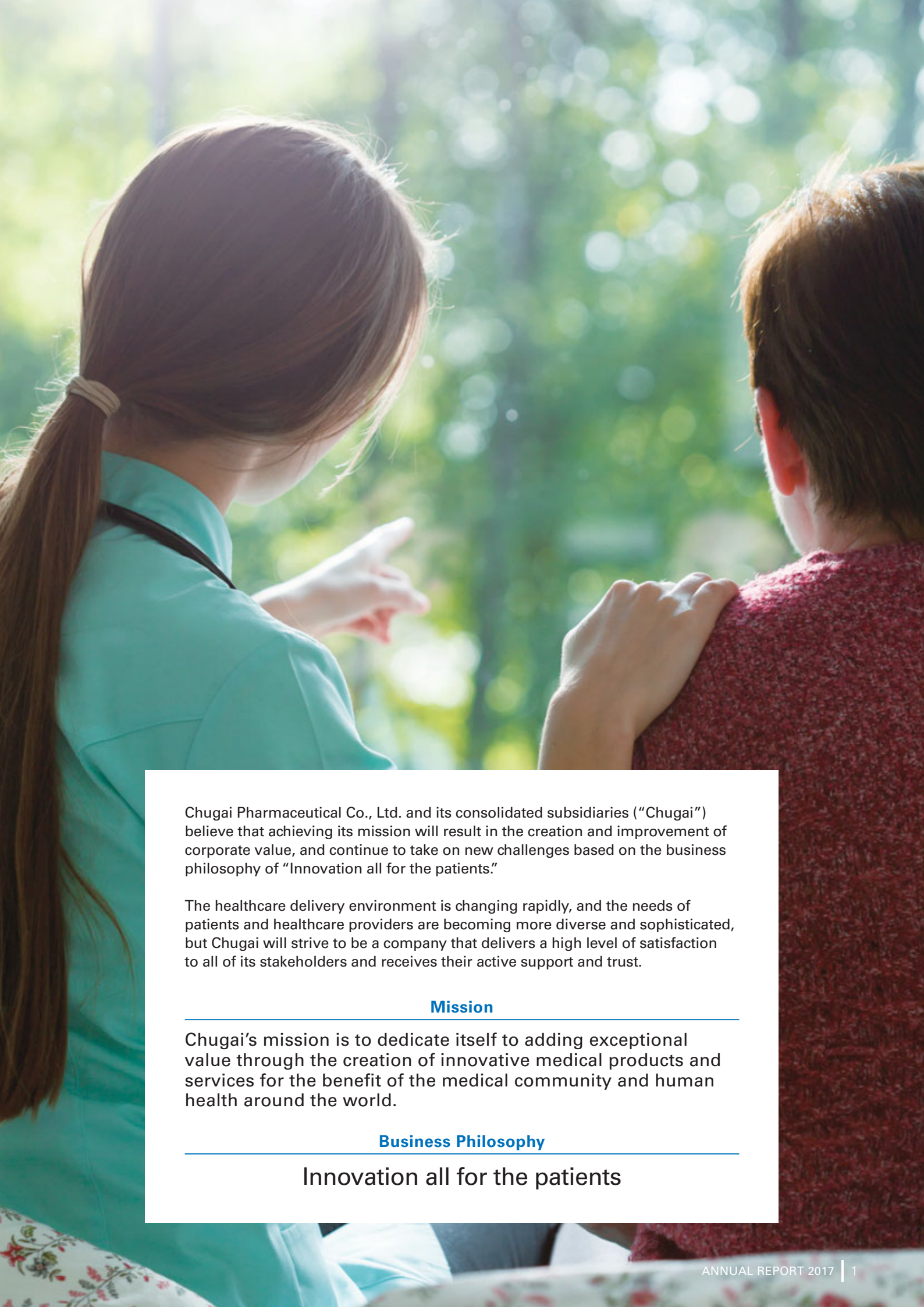
Innovation all for the patients

CHUGAI PHARMACEUTICAL CO., LTD.

I'm a Futurian.
I have come from your not-too-far future.

While luxuries such as flying cars, robots, and AI
are at the forefront of the news, the future
of healthcare also holds new promise.
Imagine tailor-made medications, accessing
a doctor from the palm of your hand, and a new
era of disease prediction and prevention.
For more details, look into the future.

For a tomorrow only possible through biotechnology.



Chugai Pharmaceutical Co., Ltd. and its consolidated subsidiaries ("Chugai") believe that achieving its mission will result in the creation and improvement of corporate value, and continue to take on new challenges based on the business philosophy of "Innovation all for the patients."

The healthcare delivery environment is changing rapidly, and the needs of patients and healthcare providers are becoming more diverse and sophisticated, but Chugai will strive to be a company that delivers a high level of satisfaction to all of its stakeholders and receives their active support and trust.

Mission

Chugai's mission is to dedicate itself to adding exceptional value through the creation of innovative medical products and services for the benefit of the medical community and human health around the world.

Business Philosophy

Innovation all for the patients

Editorial Policy

Chugai Pharmaceutical Co., Ltd. ("Chugai" or the "Company") has adopted integrated reporting to communicate both the financial and non-financial aspects of its corporate value by combining the traditional annual report with the print version of the corporate social responsibility (CSR) report.

Scope of This Report

This report presents information on Chugai Pharmaceutical Co., Ltd. and its consolidated subsidiaries. In some places, however, it gives data specifically pertaining to Chugai Pharmaceutical Co., Ltd.

Timeframe

The basic timeframe for this report is the financial reporting period of January to December 2017. However, in view of the importance of providing the latest information available, some information relating to activities that occurred in 2018 is included, mainly in research and clinical development data.

Information in This Report

The information presented in this report is information that Chugai believes to be important given its significance in building Chugai's corporate value over the short, medium and long term, and its degree of impact on stakeholders. More detailed CSR information is reported on the Chugai website.

Reference Guidelines

The content of this report is focused on value creation, using as reference The International Integrated Reporting Framework issued by the International Integrated Reporting Council (IIRC) and Guidance for Integrated Corporate Disclosure and Company-Investor Dialogue for Collaborative Value Creation: ESG Integration, Non-Financial Information Disclosure, and Intangible Assets into Investment (Guidance for Collaborative Value Creation) compiled by the Ministry of Economy, Trade and Industry of Japan.

CSR information was prepared with reference to the Environmental Reporting Guidelines (Fiscal Year 2012 Edition) of the Ministry of the Environment of Japan and the 2013 Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI).

Forward-Looking Statements

This annual report includes forward-looking statements pertaining to the business and prospects of Chugai. These statements reflect the Company's current analysis of existing information and trends. Actual results may differ from expectations due to risks and uncertainties that may affect the Company's businesses.

Note

The information regarding pharmaceuticals (including products under development) is not intended for advertising, promotion or medical advice. All trademarks are the property of their respective holders.

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● For details on items numbered in blue above, refer to "Composition of the Annual Report" on page 3.

Chugai's Stance on Sustainability

Chugai's Approach to ESG

Chugai conducts its business activities to fulfill its mission of benefiting the medical community and human health around the world. That fundamental commitment, shared by each employee, has not changed since the Company was founded in response to the shortage of medicine after the Great Kanto Earthquake of 1923.

In recent years, interest has grown in using environmental, social and governance (ESG) metrics to assess corporate value that does not appear in the financial statements. Chugai views corporate value as a comprehensive product of its economic performance, social awareness and human development. We believe that making meaningful efforts in these aspects will enable us to steadily fulfill our mission over the long term, and increase our corporate value. In other words, for Chugai, which is engaged in business related to the important social issue of health, ESG and the continuous, long-term fulfillment of its mission are inextricably linked.

ESG and Business Activities

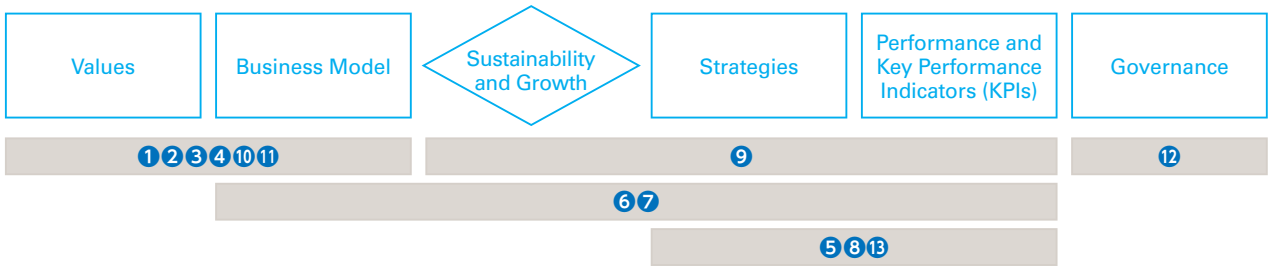
For example, the "social" aspect of ESG includes Chugai's business activities for fulfilling its mission, and "environmental" encompasses its Company-wide efforts to help protect the global environment as an endeavor for the sustained fulfillment of its mission over the long term. In governance, as we are a member of the Roche Group, but maintain management autonomy and independence as a publicly listed company, we promote risk management and compliance to fulfill the mandate of our various stakeholders appropriately and fairly. We also emphasize human resource management based on the idea that people are the source of value creation.

Measures for Further Evolution

Amid the growing global focus on ESG, external initiatives such as the Sustainable Development Goals (SDGs) are increasingly being used as key metrics. Chugai's mission shares common values with the SDGs, and many of its initiatives are in line with the SDGs. In tandem with formulation of the next mid-term business plan, we are conducting a social and environmental analysis using such external initiatives for reference, and are considering formulating targets for non-financial aspects from the perspective of long-term sustainability.

Composition of the Annual Report

Chugai considers all of its activities, including the ESG initiatives described above, as efforts for value creation. Accordingly, in this report we aim to provide information that gives readers a deeper understanding of how we create value. The composition of this report follows the Guidance for Integrated Corporate Disclosure and Company-Investor Dialogue for Collaborative Value Creation from the Ministry of Economy, Trade and Industry (METI) of Japan, as shown below.



Information on Chugai's CSR Initiatives

Chugai discloses its CSR initiatives in a variety of media, including this printed report and its website. Please refer to the website for further details on initiatives presented in this report.

For further details, see the CSR section of the Chugai website
https://www.chugai-pharm.co.jp/english/csr/

External Evaluation of Chugai's ESG Initiatives

FTSE4Good

MSCI 2017 Constituent MSCI ESG Leaders Indexes

Chugai is included in all three ESG indices selected by the Government Pension Investment Fund of Japan

FTSE Blossom Japan

MSCI 2017 Constituent MSCI Japan ESG Select Leaders Index

MSCI 2017 Constituent MSCI Japan Empowering Women Index (WIN)

Message from the CEO (Discussion)

Chugai appointed a new CEO on March 22, 2018. In this section, Representative Director & Chairman Osamu Nagayama, who served as CEO until that date, and Representative Director & President Tatsuro Kosaka, the newly appointed CEO, share their thoughts with stakeholders.

We constantly transform ourselves to deliver innovative pharmaceuticals.

Nagayama

Continuously bringing innovative drugs to patients suffering from disease is Chugai's purpose. Chugai was founded in 1925 in response to the severe shortage of medicine after the Great Kanto Earthquake, and the Company's commitment to contributing to healthcare with exceptional medicines has not changed since then. To live up to the Company's founding spirit, we constantly transform ourselves to adapt to the needs of the times and society. I believe this is the reason we have continued to grow.

Kosaka

Chugai's business model has certainly changed a great deal during its history of more than 90 years. In response to changes in social and business conditions, the Company switched its primary business focus from over-the-counter drugs to prescription drugs, and ventured into biopharmaceuticals ahead of its industry peers. We have never been afraid to change or to take risks. The turning point that laid the foundation for our current business model was the strategic alliance we began with Roche in 2002. I conducted negotiations for the alliance as head of the working group under your supervision, but I was deeply aware of how significant it would be for the medicines that Chugai creates to contribute to healthcare globally.

Nagayama

Diseases have no borders. Chugai exists to create innovative drugs that address unmet medical need,[1] but unless we deliver value to patients worldwide, we cannot fulfill that role. And there are limits to how much of the enormous cost associated with creating new drugs can be covered by a single

Diseases have no borders, so Chugai has to deliver value globally. We will enhance our corporate value by continuing to innovate for the benefit of patients around the world.

Osamu Nagayama
Representative Director & Chairman

company. The formation of this unique alliance, in which we are a member of Roche Group but still maintain our stock listing and management autonomy in Japan, was a decision we made in order to continue pursuing innovation independently as an R&D-driven company.

In 2017, the fifteenth anniversary of the alliance, Chugai's revenues and operating profit have more than tripled and our market capitalization has grown about 9 times[2] compared with their levels before the partnership. I see this as proof of the value of the business model we established through the alliance.

Creating a unique business model enabled global growth.

Kosaka

I agree. At the party held when the alliance was formed, someone said in a speech that "Chugai has become a global company overnight," and that really is true.

These last 15 years can be divided into three periods. In the first phase up to 2008, we were busy bringing the management of the "New Chugai" up to a global level. We carried out clinical development, regulatory filings and launches of multiple large projects simultaneously to make the products sold by Roche worldwide available in the Japanese market, which was an unprecedented challenge for us. At the same time, we introduced a project lifecycle management system and a Specialty MR system, carried out business process reengineering, and made other enhancements in anticipation of business scale expansion.

With the establishment of this business foundation during this phase, we were ready to step up our efforts in the second phase from 2009 to 2014 toward becoming a "top pharmaceutical company".

Nagayama

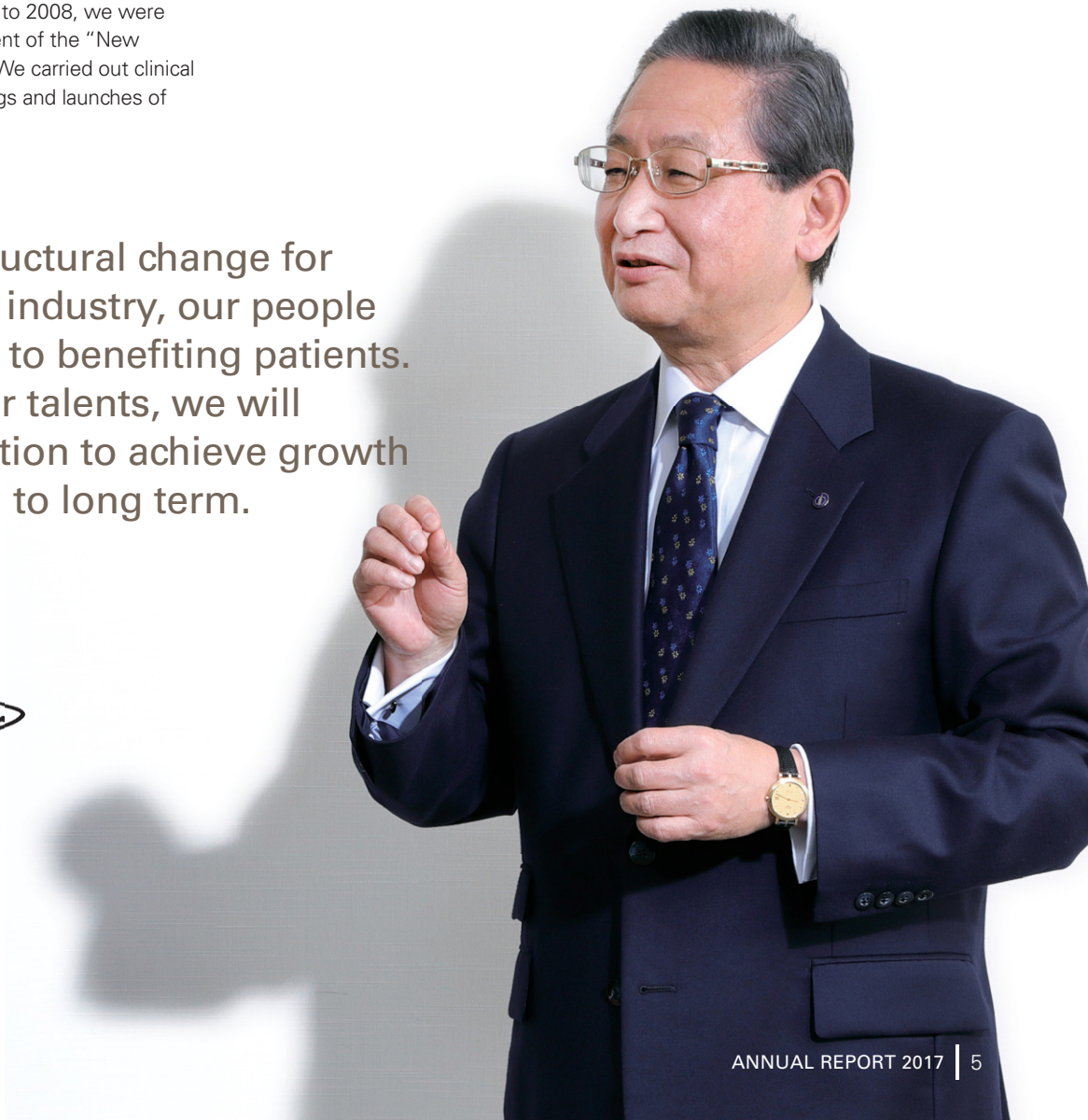
In 2009, we set our fundamental goal of becoming a top pharmaceutical company, backed by the growth of our employees.

The source of corporate value is people. The quality and volume of the global-level work our people experienced following the start of the

1. Medical need that is not adequately met due to a lack of effective treatments
2. As of December 31, 2017

In a time of structural change for the healthcare industry, our people will be the key to benefiting patients. Backed by their talents, we will pursue innovation to achieve growth in the medium to long term.

Tatsuro Kosaka
Representative Director,
President & CEO



alliance in 2002 significantly boosted their professional development. We had already established top positions in oncology and antibody research, but the awareness of our employees had not kept pace with the rapid expansion of our business in certain aspects.

Our next task was to instill in employees a mindset of setting ambitious goals for themselves rather than following other companies, and working with pride and awareness as an industry leader. That's why we set the goal of becoming a top pharmaceutical company.

We laid out a clear vision and encouraged the autonomous change of individual employees, which helped to raise the level of our subsequent activities. I think this prepared us to deliver unprecedented value to patients and the medical community in all our functions as a leading company, in ways such as continuous generation of innovative projects, promotion of personalized healthcare, and enhancement of safety management.

Kosaka

That brings us to the third phase from 2015 to the present. The goal of becoming a top pharmaceutical company is now well established among our employees, and we are taking on the challenge of new fields on our own through acquisition and implementation of competitiveness at a top global level. Mid-term business plan IBI 18, which incorporates our message of "Innovation beyond Imagination," is a management plan for taking on unprecedented challenges.

Nagayama

When I look back at our growth since the start of the alliance, I think it has been driven by our pursuit of innovation in every aspect of our business and by Chugai's unique earnings structure.

Chugai has two growth engines. One is the products we in-license from Roche. Exclusively selling the Roche Group's groundbreaking therapies in Japan provides a stable revenue base. That stability has allowed us to tackle more challenging and innovative projects in our own research activities, our second growth engine. The innovative products resulting from that research are sold in the global market through the Roche Group. This is a revenue base that drives growth, and provides the capital for pursuing further innovation.

Definition of a "Top Pharmaceutical Company" (The company Chugai aims to become by the late 2010s)

A company that focuses on first-in-class[1] and best-in-class[2] products and services, and continuously provides new solutions to patients and medical communities around the world.

— Innovation all for the patients —

1. An original drug that is highly novel and useful, and will significantly change the therapeutic system
2. A drug that offers clear advantages over other existing drugs in the same category, such as those with the same molecular target

Quantitative Aspects

1. Among the top three Japanese pharmaceutical companies in the following:
- Domestic market share
- Ratio of consolidated operating profit to revenues
- Consolidated operating profit per employee
- Domestic sales per medical representative

2. No. 1 presence in strategic disease areas
- Oncology/Renal/Bone & Joint/RA: Top-class sales share and stakeholder satisfaction
- Establishment of top brand in hospital market by supporting medical liaison networks between medical professionals

3. Expansion of global presence
- Higher overseas sales ratio
- Number of large global products in lineup
- Number of global projects in late-stage development
- Continuous addition of first-in-class and best-in-class in-house projects to the portfolio

Qualitative Aspects

1. A company that satisfies all its stakeholders and receives their active support and trust

2. A company that works proactively on a global level
- Continuous creation, development, and domestic and overseas launches of products with a competitive advantage in clinical results
- Contribution to the Roche Group's results through product-appropriate fostering and sales
- Leadership in pharmaceutical industry activities
- Activities in which all employees have an awareness, sense of responsibility and pride as part of a top pharmaceutical company

Industry-leading discovery capabilities lead to major value creation.

Nagayama Chugai's drug discovery capabilities are also an important growth engine for the Roche Group. Actemra and Alecensa, which were both discovered by Chugai, are being brought to patients around the world through Roche, and are contributing to the Roche Group's earnings. The fact that five[3] of the Roche Group's 19[3] breakthrough therapy designations (BTDs)[4] were for projects originating from Chugai research indicates the high level of our innovation capabilities.

Chugai was one of the first companies in Japan to begin discovery research using biotechnology and has established a world-leading technological platform, including antibody engineering technologies. The therapeutic antibodies and other drug candidates we discovered are now entering the clinical stage of development one after another. We are also working on creating middle molecule drugs as our next-generation technology in pursuit of value creation driven by advanced science and technology.

Kosaka In 2017, the second year of IBI 18, our strengths began to yield real results. As such, it was a pivotal year for us. In terms of financial performance, we achieved record revenues and operating profit, and the quantitative and qualitative objectives we set for becoming a top pharmaceutical company are now within reach.

In terms of strategy, Hemlibra, a product from Chugai research that promises to be one of our most important growth drivers, was launched first in the United States for hemophilia A with inhibitors, following simultaneous regulatory filings in Japan, the United States and Europe. This is a very significant achievement. Hemlibra is an innovative drug that was discovered using Chugai's proprietary bispecific antibody technology, and we were able to carry out rapid global development and a quick market launch through the Roche Group's network. It is thus a project that exemplifies the strength of our business model. As a drug that brings innovation to hemophilia treatment, Hemlibra is expected to offer significant benefit to patients worldwide. We also steadily advanced our priority agenda, including the smooth development progress of Tecentriq, another key growth driver, the establishment of a biological API production system to handle high-mix, low-volume production, and the development of a new system for providing solutions based on cooperation among the Marketing & Sales, Medical Affairs and Drug Safety divisions.

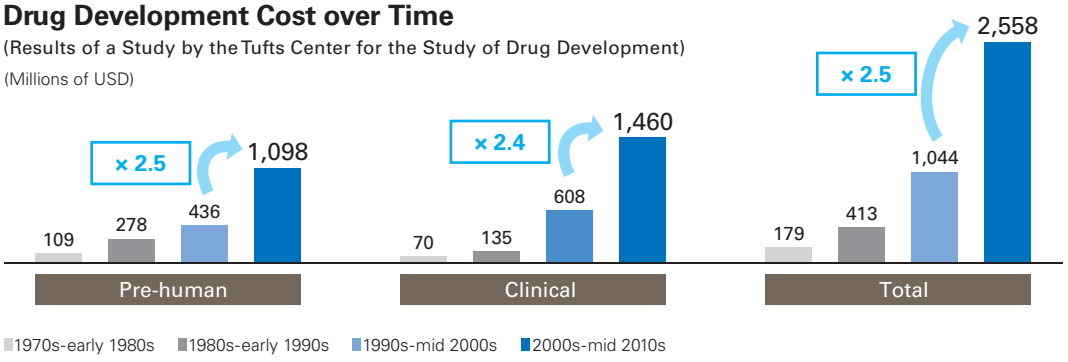
In 2018, the final year of IBI 18, the market environment is expected to pose challenges, such as the biannual NHI drug price revisions. However, we are committed to successfully completing our strategies in all functions – discovery, clinical development, manufacturing and solution provision – and adding to our accomplishments to wrap up our efforts during the three years of the plan.

3. As of February 1, 2018
4. A system introduced in July 2012 by the U.S. Food and Drug Administration aimed at expediting the development and review of drugs for the treatment of severe or life-threatening diseases or symptoms

Drug Development Cost over Time

(Results of a Study by the Tufts Center for the Study of Drug Development)

(Millions of USD)



Source: DiMasi, J.A., *Journal of Health Economics* (2016) 47: 20-33

The only response to structural changes in the industry is to pursue innovation.

Kosaka As we go forward, disruptive technologies such as artificial intelligence, the Internet of Things and nanotechnology are expected to bring about what has been described as the Fourth Industrial Revolution. In addition, there are threats to sustainability, including declining birth rates, aging populations, environmental degradation, and ballooning public debt. The interaction between these issues is likely to usher in a period of dramatic change unlike any we have ever experienced. In the healthcare industry, although new medical technologies are expected to generate new demand, competition is sure to intensify with the entry of players from other industries, and the global rise in social security costs and weakening fiscal positions will inevitably lead to further measures to control healthcare costs.

In order to continue creating value going forward, Chugai has to make the most of its strengths and prepare for the coming changes in the industry structure. The only way to do this is by pursuing innovation.

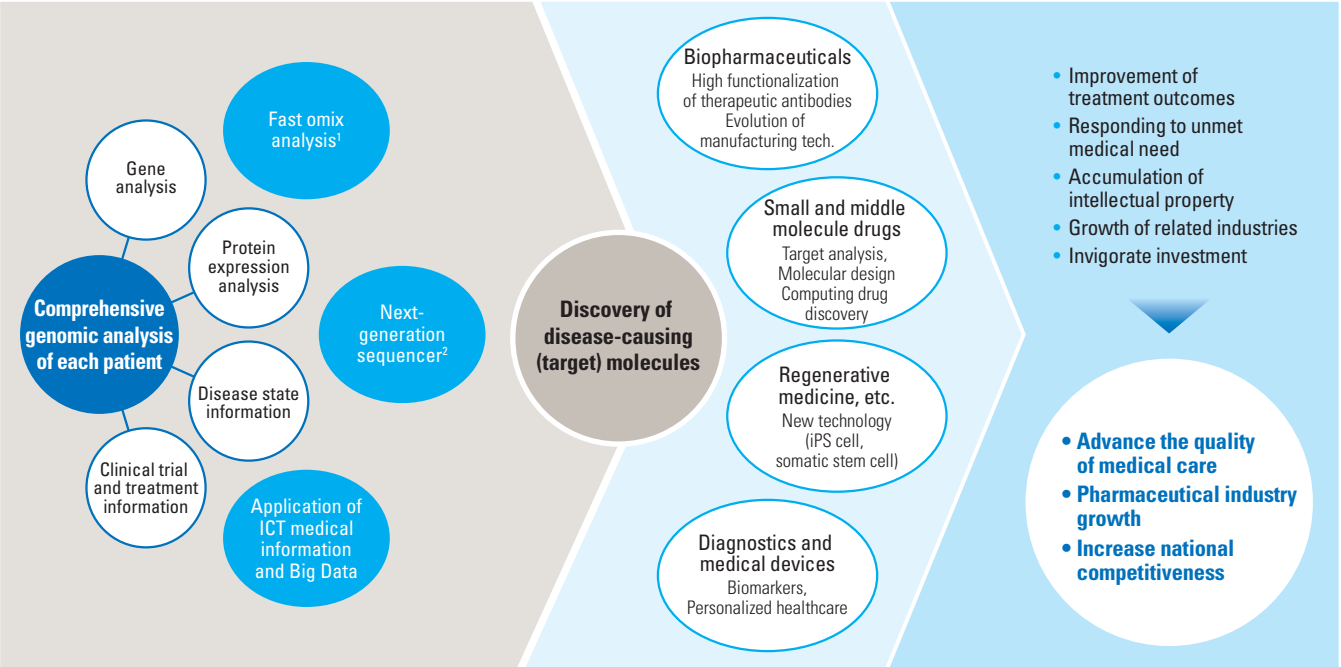
Nagayama Chugai's driving force truly is innovation. On the other hand, innovation – that is, the creation of novel medicines – is becoming increasingly difficult. Global competition to develop new drugs has intensified as the difficulty of development rises and technological advances drive up costs. According to one study,[5] successfully developing a new drug and bringing it to market requires investment of as much as U.S.$2.5 billion (roughly ¥300 billion), including the cost of projects that quietly fail. It is hard for a pharmaceutical company to grow and survive without the financial strength to shoulder that burden.

However, drug development is highly specialized by nature, so the risks associated with the business, the process of innovating, and the various technologies and amount of investment required are not well understood by the public. Unless innovation is properly valued, pharmaceutical companies cannot create breakthrough drugs to cure diseases that have no existing treatments. Life science, which includes the pharmaceutical industry, is a field that uses precise and advanced science and technology. It will continue to be a growth sector in the global industrial structure.

5. In a study by the Tufts Center for the Study of Drug Development (see graph on page 7), it was estimated that development of a single drug requires investment of approximately U.S.$2.5 billion (approximately ¥300 billion) based on the clinical development success rate.

Clarification of Disease Mechanisms and the Advancement of Emerging Drug Discovery Technologies

Progress of clarifying the disease mechanism **Sophistication of pharmaceutical and medical technology**



1. Comprehensive analysis, recording and use of in vivo DNA, protein and other molecules
2. A device that is capable of sequencing genomes at high speed

Kosaka

The pharmaceutical industry as a whole should be engaging in a discussion on health economics and the balance between innovation and cost. As a leader in the industry, Chugai should do what it can to encourage such debate.

In addition, while we have grown on the strength of our unique business model and technologies, there is no guarantee that this growth will continue indefinitely. As I said earlier, technological innovation with the potential to transform society is advancing. To continue innovating, we must think beyond the conventional framework of drug discovery.

In this context, while realizing advanced pharmaceutical treatments in our core realm of "the pill," we must expand our efforts "around and beyond the pill," in other words, beyond the borders of the pharmaceutical industry. In the realm of the pill, we will continuously produce innovative medicines by leveraging our existing strengths as well as middle molecule discovery technology – our next-generation core technology – and open innovation[6] that includes cutting-edge immunology research through a comprehensive alliance with IFReC.[7] Around the pill, in the realm of solutions bordering on medicines, we will start offering a genomic testing service that uses a next-generation sequencer in the business with Foundation Medicine Inc. (FMI) that we will launch on a full scale in 2018. We want to take advantage of the synergy of this service with the pharmaceutical business so that we can contribute to the advancement of personalized healthcare and genomic medicine. Beyond the pill, in fields beyond medicines, we intend to work toward greater innovation in various ways including through collaboration with partners in other industries while harnessing the so-called Fourth Industrial Revolution as an opportunity for innovation. Led by the Science & Technology Intelligence Department established in April 2017, we plan to link these efforts to a growth scenario as our first initiative.

The next mid-term business plan is currently being drawn up. We intend to disclose the specifics of our growth strategy when the plan is announced.

Under the new CEO structure, we will aim for continuous innovation and greater corporate value.

Nagayama

The year 2017 was very significant for Chugai. The initiatives we have taken began to yield results; we marked the fifteenth anniversary of the alliance with Roche; and, for me, it was the twenty-fifth year since I was first appointed President. Now, 2018 will be the year we prepare the next mid-term business plan as we approach our goal of becoming a top pharmaceutical company. I thought the timing was right to pass the baton to a new CEO, and Mr. Kosaka accepted. I will focus on supervising management as Representative Director & Chairman so that Chugai creates value befitting a top pharmaceutical company, including value from an environmental, social and governance (ESG) perspective.

Kosaka

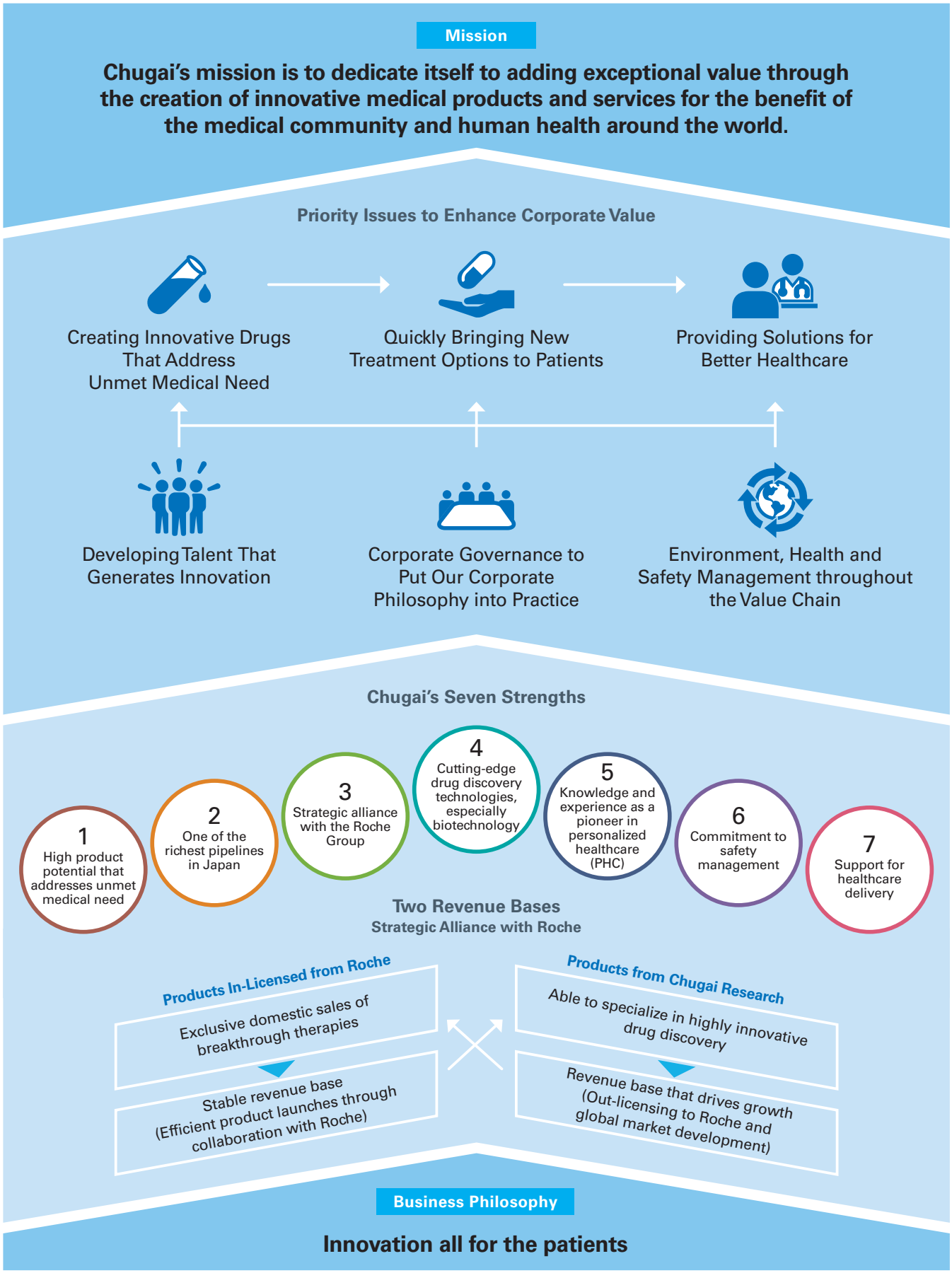
When I heard that I was going to be named the new CEO, I was very surprised, but I also felt a tremendous sense of responsibility and motivation.

As you said, our people are the key to pursuing innovation for the benefit of patients. Under IBI 18, I made a commitment to revamp our human resource strategy and talent management system to develop the next generation of managers. We have identified seven global competencies as the parameters for the type of people we seek, and by linking productivity, diversity and work-life synergy, we intend to be a company where talented people have the freedom to reach their full potential. I will place the highest importance on fostering an energetic, enjoyable and positive corporate culture because I believe such a culture is fertile ground for nurturing the seeds of innovation.

With people as its greatest asset, Chugai will further increase its corporate value by continuing to innovate. You can expect great things from Chugai as we move forward.

6. Generating innovative, new value by utilizing the technologies and development capabilities of external research networks in addition to in-house capabilities
7. Osaka University Immunology Frontier Research Center

Chugai's Value Creation Model



"Innovation all for the patients." Guided by this business philosophy, Chugai is focusing on priority issues to enhance its corporate value through innovation, drawing on a unique business model that is built on the strategic alliance with Roche, together with Chugai's "Seven Strengths." Through this approach to value creation, Chugai fulfills its mission of working for the benefit of the medical community and human health around the world.

Priority Issues to Enhance Corporate Value

To enhance its corporate value, Chugai is implementing a variety of activities that deliver new value to patients. At the same time, the external environment is changing dramatically, and the roles that the pharmaceutical industry and Chugai are expected to play are also changing. In these circumstances, Chugai has identified six main priority issues for generating innovation and further enhancing its corporate value. The most important of these are creating innovative drugs that address unmet medical need through continuous innovation, and quickly bringing new treatment options (groundbreaking drugs) to patients, while simultaneously providing solutions for better healthcare that go beyond just supplying products. To continue demonstrating such value, it is also essential to develop talent that generates innovation, and to promote environmental, health and safety management throughout the value chain. By continuously strengthening corporate governance to put our corporate philosophy into practice, we will create value over the medium to long term.

Applying Chugai's Seven Strengths

As a result of its continuous innovation for the benefit of patients and its creative initiatives, Chugai has built advantages that contribute to increasing its corporate value. After identifying Chugai's "strengths" from interviews with people inside and outside the Company, we evaluated and analyzed those strengths from the standpoints of value to patients and competitive advantage, resulting in 25 categories. We then organized those categories through outside analysis and other means and distilled them down to seven strengths. By fully applying and developing these strengths, which are the source of Chugai's unique value, we intend to continue contributing to solutions that provide new value for society.

Two Revenue Bases

The strategic alliance with Roche allows Chugai to in-license, develop and sell Roche's groundbreaking therapies on an exclusive basis in Japan. This stable revenue base allows us to concentrate investment on highly innovative proprietary technologies and drug discovery. Moreover, out-licensing our in-house products to Roche gives us access to global markets, which provides a revenue base that drives growth. Meanwhile, in addition to maximizing the value of Roche products in Japan, the alliance enables Roche to sell our products – which we create through highly innovative, specialized research – in global markets. It is a win-win relationship.

Value Creation Strategies ➡ page 29

2017 Performance (Capital)

R&D expenditures (Core Base)
¥88.9 billion

Market share in therapeutic antibodies (Japan)[1]
27.3%

Satisfaction ranking based on healthcare providers' assessments[2]
3rd

Employees
7,372

Enhancement of governance
Revision of remuneration system for directors

Energy consumption per employee
296 GJ

1. Copyright © 2018 IQVIA.
Source: JPM 2017.
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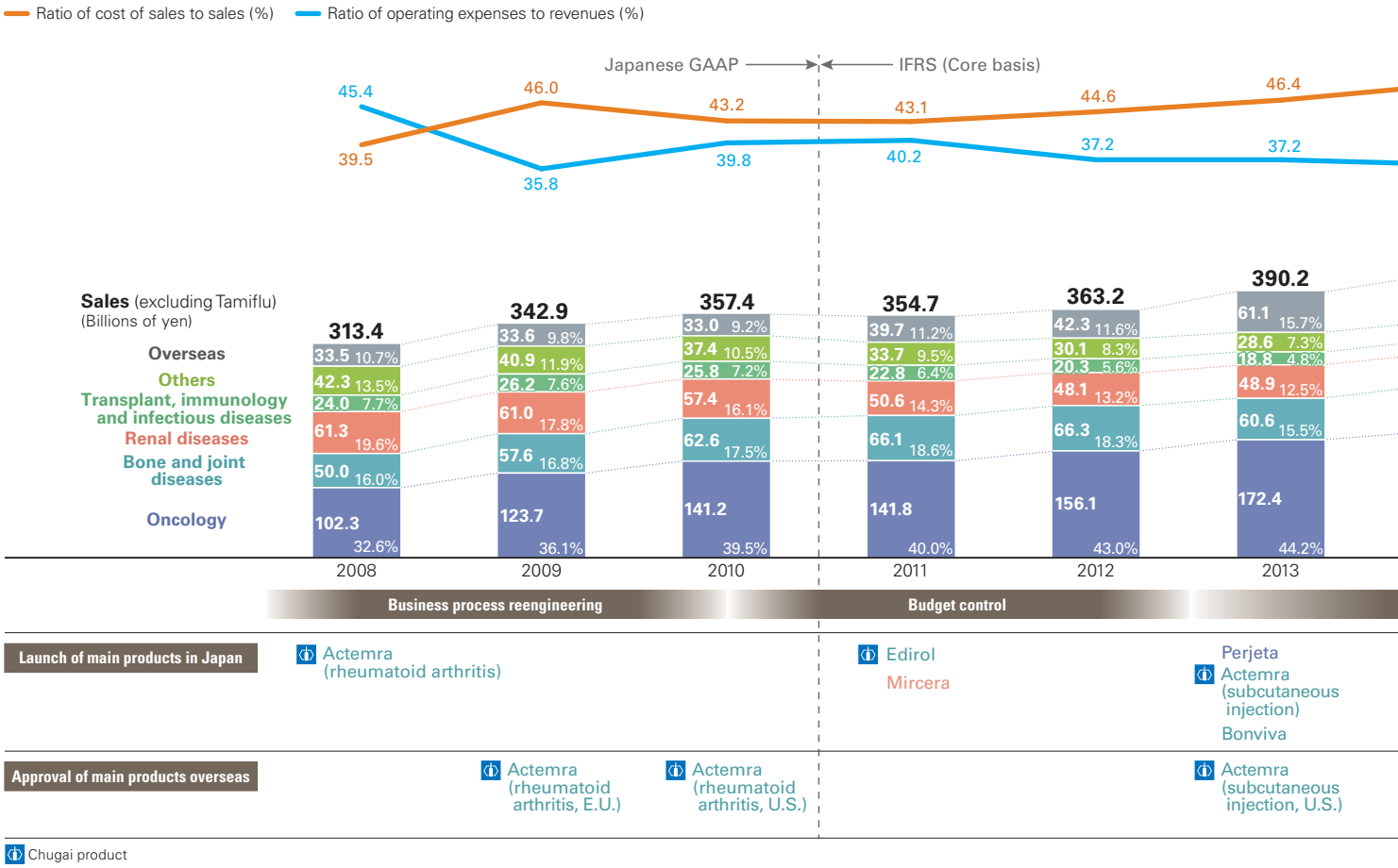
The scope of the market is defined by Chugai.
2. Based on a survey of overall assessments of companies by physicians in hospitals with 100 or more beds, as defined by Chugai

Financial and Non-Financial Highlights

Chugai Pharmaceutical Co., Ltd. and Consolidated Subsidiaries/Years ended December 31

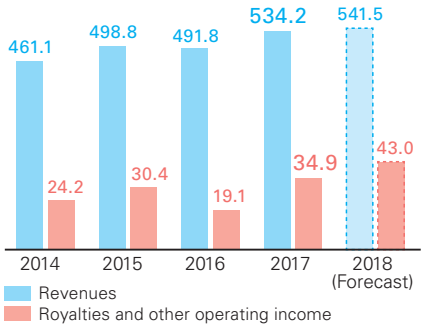
Financial Indicators (Core Basis)

Results



Revenues/ Royalties and Other Operating Income

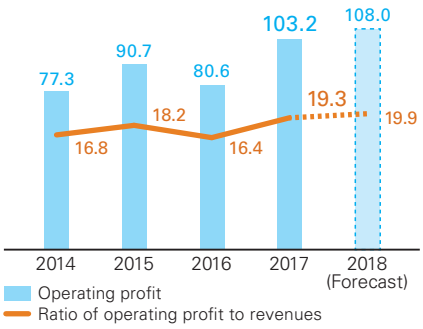
(Billions of yen)



Revenues continue to expand, led by increases in exports of Chugai products and in royalties and other operating income (ROOI). ROOI is composed of recurring income, which has been increasing in conjunction with overseas sales of Actemra, and non-recurring income, which changes from year to year and is the principal factor in the fluctuations in ROOI.

Operating Profit/ Ratio of Operating Profit to Revenues

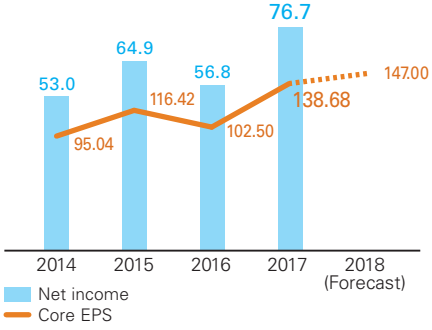
(Billions of yen/%)



Chugai's ratio of operating profit to revenues is consistently high due to the low ratio of operating expenses to revenues. In 2017, the increase in ROOI and the higher percentage of Chugai products in the sales mix resulted in a lower ratio of cost of sales to sales, which contributed to the increase in the ratio of operating profit to revenues. In 2018, we expect record profit for a second consecutive year due to growth of mainstay products and ROOI.

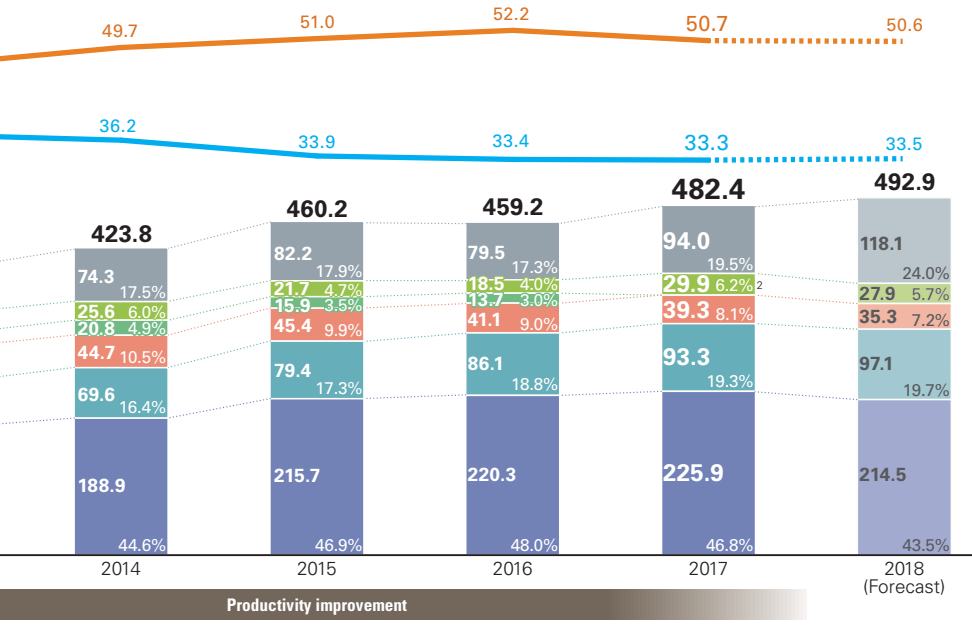
Net Income/Core EPS

(Billions of yen/Yen)



In mid-term business plan IBI 18, we set a Core EPS compound annual growth rate (CAGR) of less than 4 percent as the quantitative outlook, with 2015 as the baseline, and are using it as a key performance indicator shared both internally and externally. In the forecast for 2018, we project that this indicator will be 9.5 percent,[1] significantly higher than our original plan.

1. Based on average exchange rates for 2015



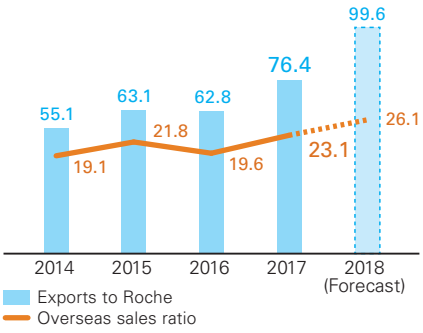
Chugai has substantially improved its cost structure in view of the rising cost of sales to sales ratio resulting from the increase in products in-licensed from Roche under the strategic alliance between the two companies. We have now secured high profitability by continuously achieving a ratio of operating expenses to revenues at a level that compares favorably with the world's leading pharmaceutical companies.

Sales have grown steadily in the area of oncology based on products in-licensed from Roche as well as Alecensa, a product from Chugai's research. Sales also continue to grow in the area of bone and joint diseases, driven by Chugai products Edirol and Actemra, the first therapeutic antibody created in Japan.

2. Sales of the transplant, immunology and infectious diseases area, which were disclosed separately up until 2016, were included and disclosed in sales of the Others area from 2017.

Exports to Roche/Overseas Sales Ratio

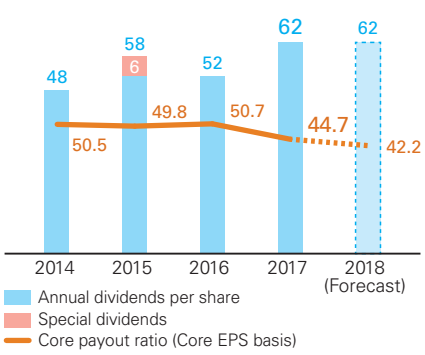
(Billions of yen/%)



Chugai product Actemra has grown into a mainstay product of the Roche Group, with global sales (including Japan) surpassing 1.9 billion Swiss francs in 2017. Alecensa, another product from Chugai research, received approval in Europe and the United States for the additional indication of first-line treatment at the end of 2017, and is expected to drive overseas sales.

Dividends per Share/Core Payout Ratio

(Yen/%)



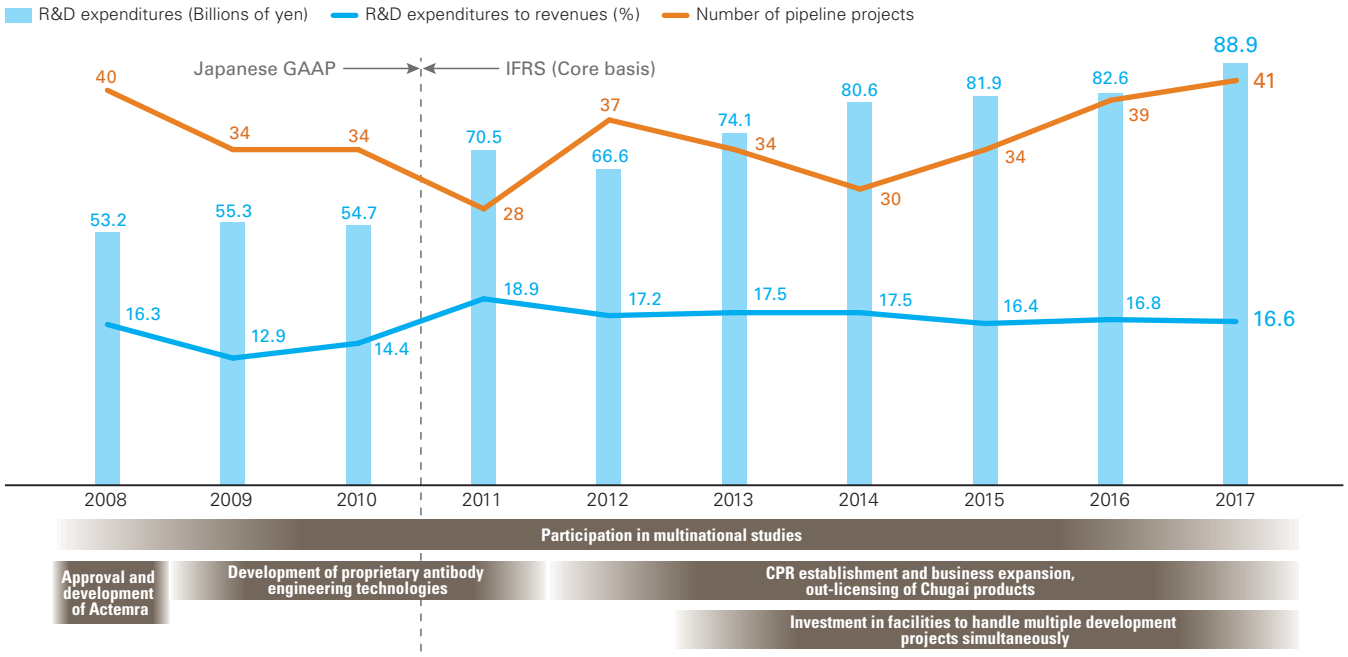
Regarding shareholder returns, we target stable dividends with a Core EPS payout ratio of 50 percent on average, based on an approach of dividing core net income equally between the Company and our shareholders. This policy will continue unchanged under IBI 18, our current mid-term business plan.

About Core Basis Results

Chugai reports its results on a Core basis from 2013 in conjunction with its decision to adopt IFRS. Core basis results are the IFRS basis results adjusted by excluding non-Core items, and are consistent with the concept of Core basis results disclosed by Roche. Core basis results are used by Chugai as internal performance indicators for representing recurring profit trends both internally and externally, and as indices for establishing profit distributions such as returns to shareholders. No items have been excluded from the IFRS balance sheet and cash flows, as the Core basis results concept only applies to the income statement.

Research, Clinical Development and Production

R&D Expenditures/R&D Expenditures to Revenues/Pipeline Projects

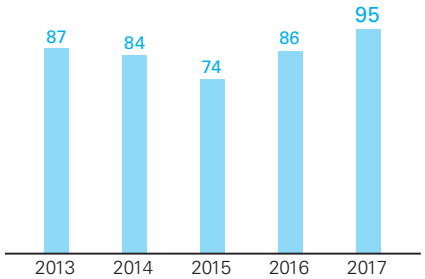


As revenues grow, Chugai increases investment in research and development. In addition to the steady creation of innovative drugs, this leads to research findings that may contribute to the advancement of healthcare and the pharmaceutical industry worldwide. Our policy is to proactively conduct speedy research and development in light of the competitive environment, as well as upfront investment to acquire and enhance future competitiveness, while keeping growth in overall operating expenses within the rate of revenue growth as a general principle.

Under our strategic alliance with Roche, we have been promoting new drug development with higher success rates and greater efficiency by collaborating with Roche in ways such as examining and deciding on which Roche products to in-license based on the results of early-stage clinical trials. In recent years, we have maintained a robust pipeline, with numerous products from Chugai research having moved into the clinical phase, including in-house products from Chugai Pharmabody Research (CPR),[1] which has expanded its operations to accelerate the creation of innovative therapeutic antibodies.

1. Established in Singapore in 2012

Publications in Academic Papers and Presentations at Scientific Conferences regarding Chugai Research Findings[2]

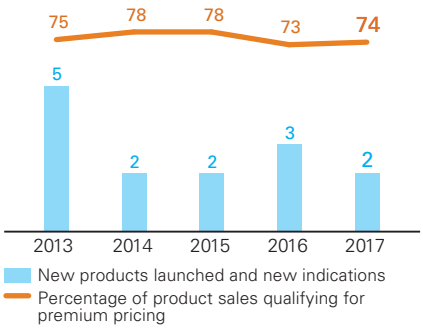


Chugai develops innovative medicines that allow it to differentiate itself from competitors by continuously establishing proprietary drug discovery technologies and applying them to development candidates while promoting research on commercialization for high quality and high added value. We will continue to generate research findings that may contribute to the overall advancement of healthcare, presenting those findings at scientific conferences and publishing them in academic papers.

2. Total of drug discovery and pharmaceutical technology

New Products Launched and New Indications/Percentage of Product Sales Qualifying for Premium Pricing

(Number/%)

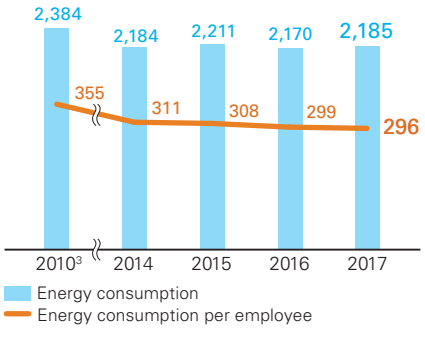


Products that qualify for premium pricing account for a consistently high proportion of Chugai's sales. With our stable revenue base from the efficient in-licensing of Roche products for the Japanese market, we will continue to concentrate on the creation of innovative medicines to provide new value to patients.

Note: Products subject to special market-expansion repricing (2013: Actemra, Avastin; 2016, 2017: Avastin) are counted as products qualifying for premium pricing because they were assumed to meet the conditions for such pricing in the relevant fiscal years.

Energy Consumption/ Energy Consumption per Employee

(Thousands of GJ/GJ per employee)

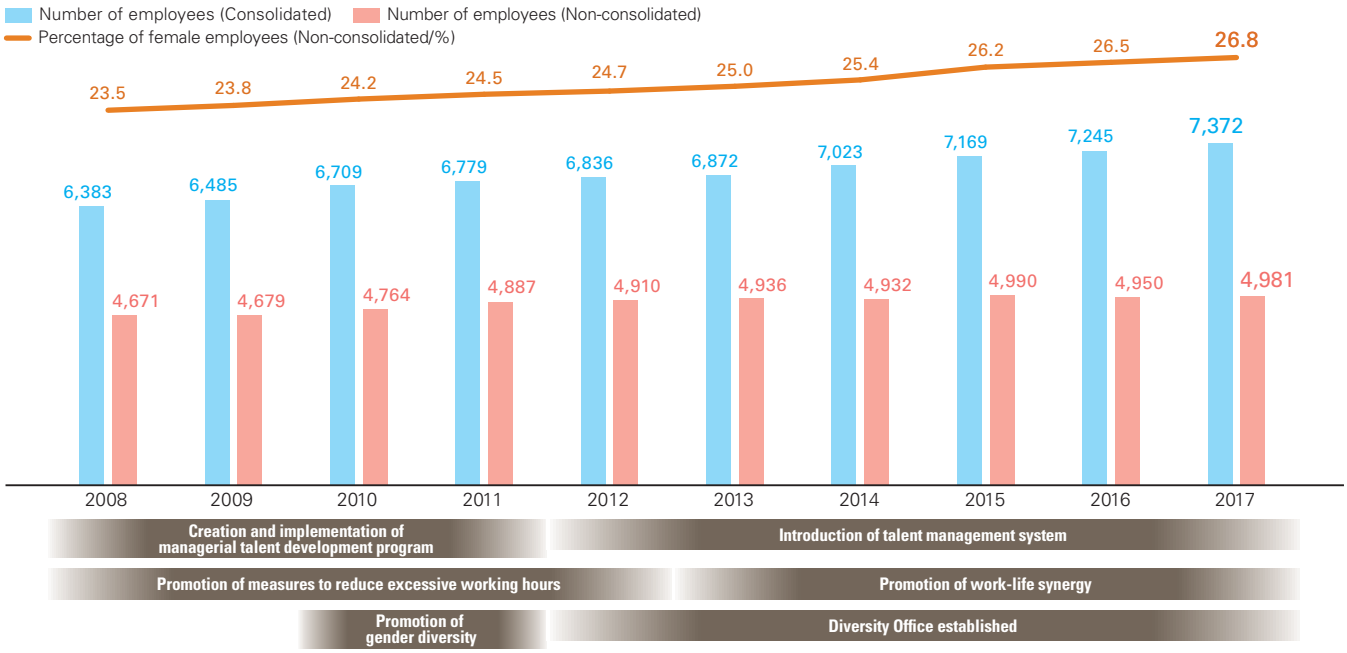


As it expands its production system for new drugs by introducing facilities, Chugai is also working to reduce energy consumption as one of its tasks based on its core value, "We care about the global environment." (See "Environmental, Health and Safety Data" on pages 76-77 for details.)

3. Benchmark year for mid-term environmental goals

Human Resource Management

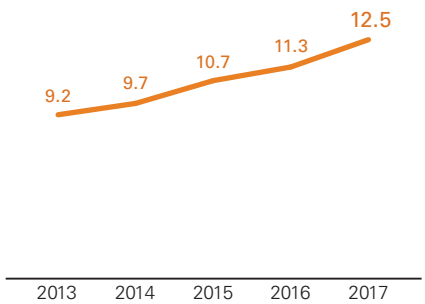
Employees/Percentage of Female Employees



Chugai is working to enhance its management of human resources based on the belief that its people are the source of its contribution to patients in terms of providing greater value. We have implemented a talent management system to develop and retain leaders and core personnel, and also promote diversity and inclusion and work-life synergy so our diverse human resources can generate new value. The percentage of female employees is rising, and women have been steadily making inroads not only in our personnel systems but also in our organizational culture.

Percentage of Female Managers

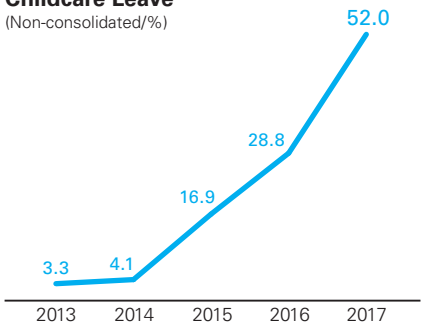
(Non-consolidated/%)



The percentage of female managers is increasing year by year. We have set a target of 13 percent for 2018, and are focusing on programs such as management candidate training to support the career development and professional growth of women. We are aware that there is still room for improvement compared with global levels and plan to further accelerate our initiatives to develop female leaders.

Percentage of Male Employees Taking Childcare Leave[4]

(Non-consolidated/%)

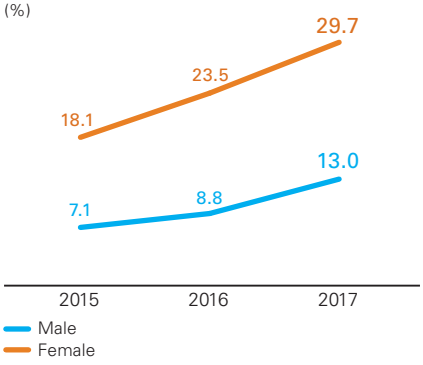


Chugai implements various measures to promote work-life synergy so that employees can choose work arrangements that fit their lifestyles. The number of male employees taking childcare leave is increasing. In addition to sending e-mails about taking childcare leave to men with newborn children and their supervisors, we have created a handbook for supervisors that contains examples of employees taking leave and guidance on key management points.

4. Number of male employees taking childcare leave as a percentage of all male employees with newborn children

Percentage of Employees Using the Telecommuting System[5]

(%)



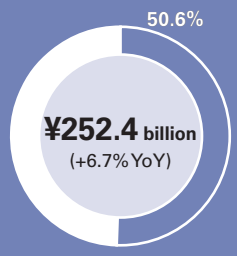
Since introducing the telecommuting system in 2012 for employees caring for young children and other family members, and for late-night teleconferencing with people overseas, we expanded the conditions for use of the system in 2015 to include productivity improvement, temporary injury and regular outpatient treatment. The number of users is on the rise. We will continue our efforts to raise awareness about the use of this system to promote diverse work styles.

5. Percentage of eligible employees

Review by Disease Area

Oncology

Sales and Percentage of Total Sales



Opportunities and Risks

Opportunities

- Cancer is the largest area of unmet medical need (the leading cause of death in Japan).
- Drugs are expected to have better efficacy and fewer side effects due to advances in personalized healthcare.
- Phase Three of the Basic Plan to Promote Cancer Control Programs is accelerating cancer genomic medicine.

Risks

- Intensifying global competition for cancer immunotherapies including anti-PD-1/PD-L1 immune checkpoint inhibitors
- Return of premium for new drug creation for mainstay products
- Entry of large pharmaceutical companies into biosimilar markets

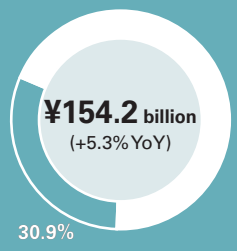
Review of 2017 Performance

In Japan, despite the slower growth of Avastin, sales increased 2.5 percent year on year to ¥225.9 billion, led by the strong performance of Alecensa, a product from Chugai research, and Perjeta.

Overall sales, including overseas sales, increased 6.7 percent to ¥252.4 billion supported by a 275.7 percent increase to ¥13.9 billion in Alecensa exports to Roche.

Bone and Joint Diseases/ Autoimmune Diseases

Sales and Percentage of Total Sales[1]



Opportunities and Risks

Opportunities

- The emergence of biologics has dramatically improved the effectiveness of rheumatoid arthritis (RA) treatment, and the treatment goal is shifting to remission (a symptom-free state).
- The number of osteoporosis patients is increasing yearly as populations age.
- There are many potential osteoporosis patients because the treatment rate and adherence to treatment remain low.
- There are many autoimmune diseases with high unmet medical need (neuromyelitis optica, large-vessel vasculitis, systemic sclerosis, etc.).

Risks

- Intensifying global competition in the RA market
- Slower growth due to the maturing of Actemra in the medium to long term
- The emergence of biosimilars that compete with biologics

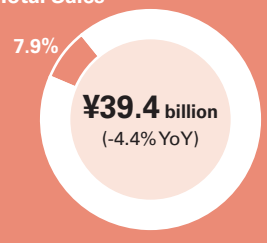
Review of 2017 Performance

In Japan, sales increased 8.4 percent year on year to ¥93.3 billion. The increase was driven by the solid performance of core products Actemra, a product from Chugai research for treatment of RA and other diseases; Edirol, another product from Chugai research and the top brand in oral osteoporosis drugs; and Bonviva, which treats osteoporosis by inhibiting bone resorption.

Overall sales including overseas sales such as exports of Actemra, which is approved in more than 115 countries and is sold through Roche, increased 5.3 percent to ¥154.2 billion.

Renal Diseases

Sales and Percentage of Total Sales



Opportunities and Risks

Opportunities

- The Japanese government is taking focused measures to address chronic kidney disease (CKD). Early intervention in potential patients is also expected to improve the treatment rate of renal anemia.
- Renal anemia is divided into the dialysis stage and the pre-dialysis stage, and the number of patients treated in the pre-dialysis stage is trending upward every year.

Risks

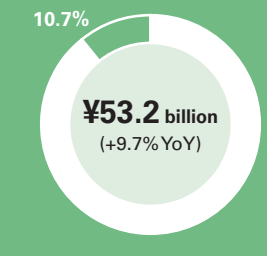
- Intensifying competition in the renal anemia market

Review of 2017 Performance

In Japan, sales decreased 4.4 percent year on year to ¥39.3 billion. Sales of Oxarol, an agent for secondary hyperparathyroidism, and Mircera, a long-acting erythropoiesis-stimulating agent, decreased in part because of the effect of competition, including from generics.

Others

Sales and Percentage of Total Sales



Opportunities and Risks

Opportunities

- Neurology is an area of very high unmet medical need, with many pathologies and syndromes.
- Influenza is an acute infectious disease that can confine over 10 percent of the population to bed with sudden high fever.
- For hemophilia patients, the burden of treatment and the occurrence of inhibitors are issues.
- In addition to skin deterioration, itching associated with atopic dermatitis reduces patients' quality of life by disrupting sleep.

Risks

- Intensifying global competition due to the limited number of known molecular targets
- Possibility of few target patients despite high unmet medical need

Review of 2017 Performance

Sales of anti-influenza agent Tamiflu for ordinary use decreased 0.8 percent year on year to ¥11.9 billion, and sales for government stockpiles, etc. increased 233.3 percent to ¥5.0 billion.

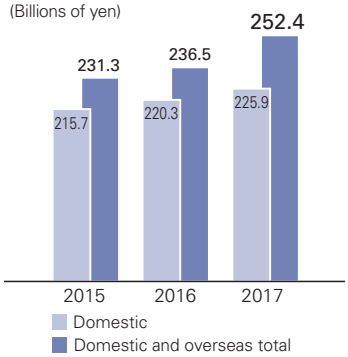
Overall sales in the other diseases category increased 9.7 percent year on year to ¥53.2 billion, as immunosuppressant CellCept showed solid growth.

1. Bone and joint diseases only

Sales

Domestic market share in oncology area: No. 1[2]

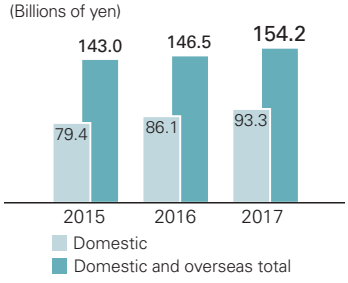
(Billions of yen)



Domestic market share in osteoporosis area: No. 2[2]

Domestic market share in RA area: No. 3[2]

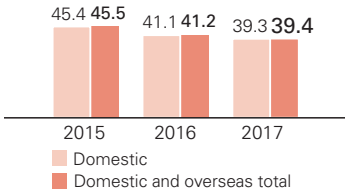
(Billions of yen)



Note: Graph shows sales for the bone and joint disease area only.

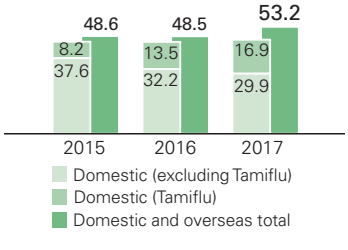
Domestic market share in renal disease area: No. 2[2]

(Billions of yen)



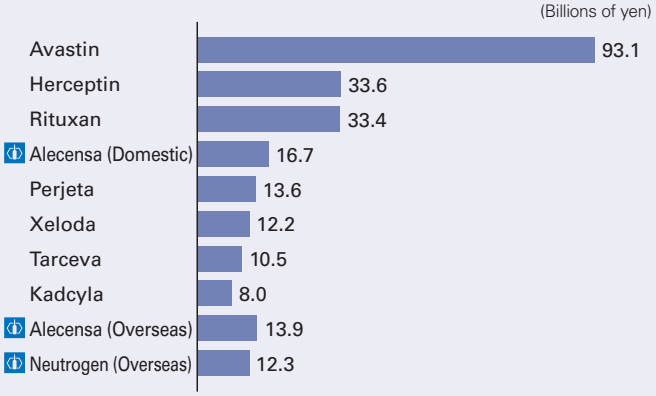
Others

(Billions of yen)

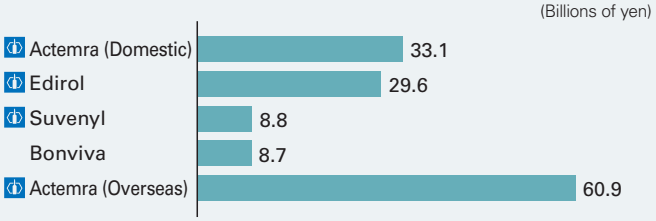


Sales of Major Products

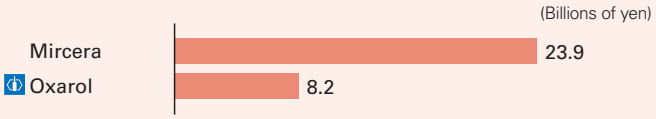
(Billions of yen)



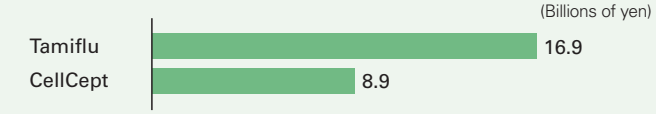
(Billions of yen)



(Billions of yen)



(Billions of yen)



Development Pipeline

(Including additional indications)

- AF802 (Alecensa)
- RG435 (Avastin)
- RG1273 (Perjeta)
- RG3502 (Kadcyla)
- RG7446 (Tecentriq)
- GA101
- RG7440
- RG7596
- GC33
- CKI27
- RG7604
- ERY974
- RG7421

- ED-71 (Edirol)
- NRD101 (Suvenyl)
- MRA (Actemra)
- SA237
- RG7845

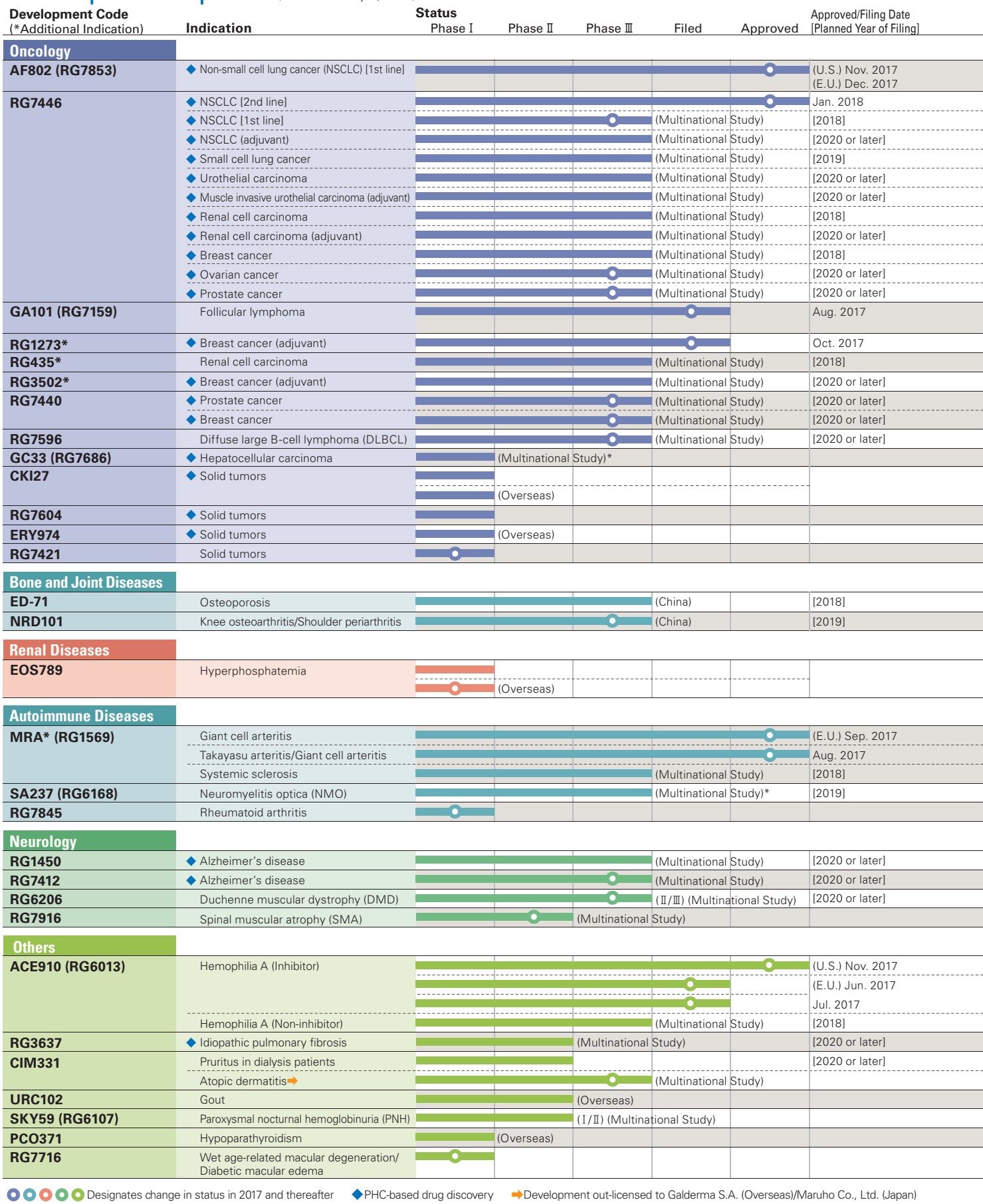
- EOS789

- ACE910 (Hemlibra)
- RG1450
- RG7412
- RG6206
- RG7916
- RG3637
- CIM331
- URC102
- SKY59
- PCO371
- RG7716

2. Copyright © 2018 IQVIA. Source: JPM 2017. Reprinted with permission. The scope of the market is defined by Chugai.

Products from Chugai research

Development Pipeline (As of February 1, 2018)



Designates change in status in 2017 and thereafter ◆PHC-based drug discovery ➡Development out-licensed to Galderma S.A. (Overseas)/Maruho Co., Ltd. (Japan)

* Multinational study managed by Chugai Pharmaceutical

Generic Name/Product Name	Origin (Collaborator)	Mode of Action
alectinib/Alecensa	In-house (Roche)	ALK inhibitor (Oral)
atezolizumab/Tecentriq	Roche	Engineered anti-PDL1 monoclonal antibody (Injection)
obinutuzumab/ Product name undetermined (Overseas name: Gazyva/Gazyvaro (E.U.))	Roche (Nippon Shinyaku)	Glycoengineered type II anti-CD20 monoclonal antibody (Injection)
pertuzumab/Perjeta	Roche	HER2 dimerization inhibitory humanized monoclonal antibody (Injection)
bevacizumab/Avastin	Roche	Anti-VEGF (Vascular Endothelial Growth Factor) humanized monoclonal antibody (Injection)
trastuzumab emtansine/Kadcyla	Roche	Anti-HER2 antibody-tubulin polymerization inhibitor conjugate (Injection)
ipatasertib/Product name undetermined	Roche/Array BioPharma	AKT inhibitor (Oral)
polatuzumab vedotin/ Product name undetermined	Roche	Anti-CD79b antibody-drug conjugate (Injection)
codrituzumab/Product name undetermined	In-house (Roche)	Anti-Glypican-3 humanized monoclonal antibody (Injection)
Generic and product names undetermined	In-house	Raf and MEK dual inhibitor (Oral)
taselisib/Product name undetermined	Roche	PI3K inhibitor (Oral)
Generic and product names undetermined	In-house	Anti-Glypican-3/CD3 bispecific antibody (Injection)
cobimetinib/Product name undetermined	Roche/Exelixis Cotellic	MEK inhibitor (Oral)
eldecalcitol/Edirol	In-house	Activated vitamin D_3 agent (Oral)
purified sodium hyaluronate/Suvenyl	In-house	Sodium hyaluronate (Injection)
Generic and product names undetermined	In-house	— (Oral)
tocilizumab/Actemra (Overseas name: Actemra/RoActemra (E.U.))	In-house (Roche)	Humanized anti-human IL-6 receptor monoclonal antibody (Injection)
satralizumab/Product name undetermined	In-house (Roche)	Anti-IL-6 receptor recycling antibody (Injection)
Generic and product names undetermined	Roche	BTK inhibitor (Oral)
gantenerumab/Product name undetermined	Roche/MorphoSys	Anti-amyloid-beta human monoclonal antibody (Injection)
crenezumab/Product name undetermined	Roche/AC Immune	Anti-amyloid-beta humanized monoclonal antibody (Injection)
Generic and product names undetermined	Roche/Bristol-Myers Squibb	Anti-myostatin adnectin (Injection)
Generic and product names undetermined	Roche/PTC Therapeutics	SMN2 splicing modifier (Oral)
emicizumab/Hemlibra	In-house (Roche)	Anti-factor IXa/X bispecific antibody (Injection)
lebrikizumab/Product name undetermined	Roche	Anti-IL-13 humanized monoclonal antibody (Injection)
nemolizumab/Product name undetermined	In-house	Anti-IL-31 receptor A humanized monoclonal antibody (Injection)
Generic and product names undetermined	In-house/JW Pharmaceutical(JW Pharmaceutical)	URAT1 inhibitor (Oral)
Generic and product names undetermined	In-house (Roche)	Anti-C5 recycling antibody (Injection)
Generic and product names undetermined	In-house	PTH1 receptor agonist (Oral)
Generic and product names undetermined	Roche	Anti-VEFG/Ang2 bispecific antibody (Injection)

Note: In principle, completion of first dose is regarded as the start of clinical studies in each phase.

Chugai Strategy

CONTENTS

Overview of Mid-Term Business Plan IBI 18

INNOVATION BEYOND IMAGINATION

Quantitative Outlook

Core EPS CAGR
(2015-18)

Low single digit[1]

- In the three years of IBI 18, we will establish a solid foundation for dramatic growth in the 2020s.
- We will continue to target a Core EPS payout ratio of 50 percent on average.

1. Growth less than 4%, based on average exchange rates for 2015

External Environment

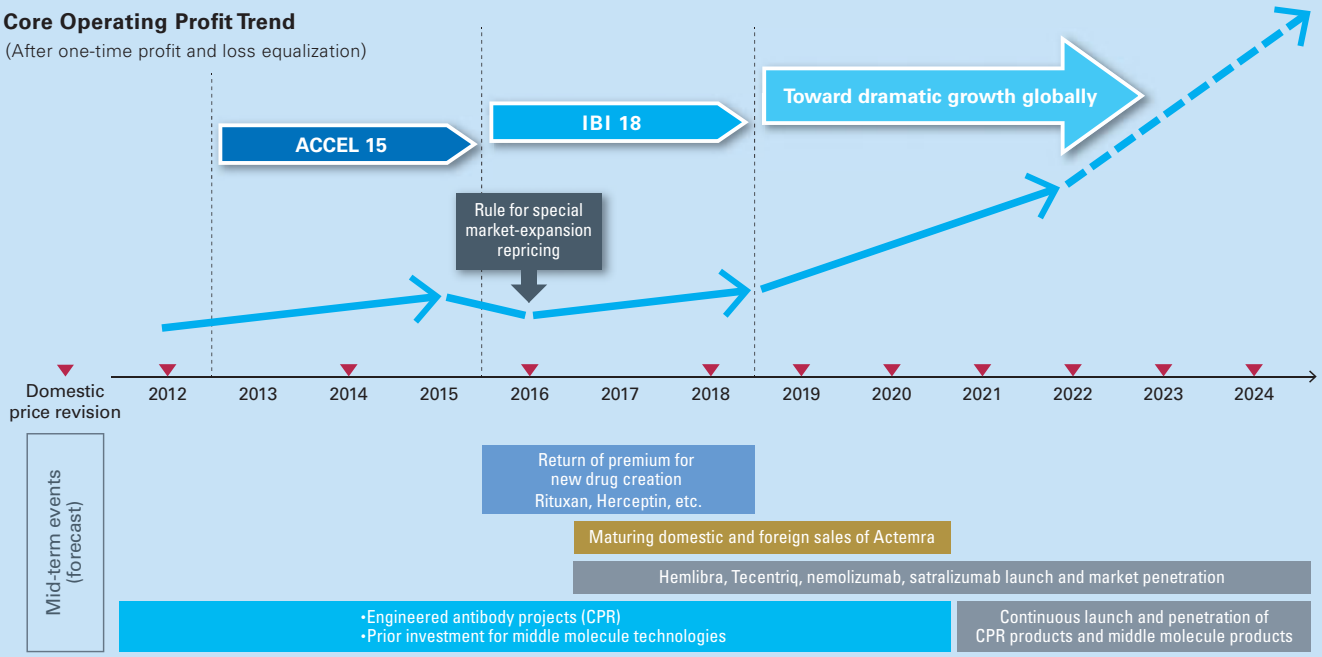
Opportunities	Risks
Global > Increasing importance of pharmaceuticals due to growth and aging of the global population > Expansion of opportunities to generate innovation based on advancements in life science and information and communications technology (ICT)	**Global** > Progress of measures to curb healthcare costs in various countries > Increasing competition in innovation among companies > Declining success rates and rising costs in research and development > Possibility that major pharmaceutical companies will launch biosimilars[2] > Dramatic changes in the competitive environment due to disruptive technologies and new entrants from different industries > Tightening of regulations for safety, quality assurance, marketing and other areas
Japan > Initiatives to promote development of breakthrough therapies, including establishment of the Sakigake designation system (fast-track review system) and the inauguration of the Japan Agency for Medical Research and Development	**Japan** > Strong pressure to contain drug costs with the rapidly aging population and financial difficulties (Revision of the NHI drug pricing system) > April 2016 introduction of a rule for special market-expansion repricing

2. Successor products to biopharmaceuticals whose patent term has expired, made by manufacturers other than the manufacturer that developed the antecedent biopharmaceutical

Mid-Term Events and Performance Trend

Core Operating Profit Trend

(After one-time profit and loss equalization)



Priority Agenda of IBI 18

- Acquisition and implementation of competitiveness at a top global level
- Selection and concentration strategy for acceleration of growth

Drug Discovery	Development	Pharmaceutical Technology	Marketing & Sales/Medical Affairs/Drug Safety
● Continuous creation of engineered antibody projects ● Establishment of drug discovery technologies for middle molecules ● Strengthening of research base for oncology/immunology	● Acceleration of Hemlibra and Tecentriq as a top priority ● Realization of early PoC with TCR[3] ● Strengthening process for proof of medical/economic value	● Enhancement of CMC[4] development infrastructure for early PoC acquisition ● Strengthening competitive advantages from late development to initial commercial production ● Strengthening QA, QC and regulatory functions	● Realization of sales growth by concentrating on sales driver products, Hemlibra and Tecentriq ● Providing advanced solutions through cross-functional teams ● Establishment of system adapted to local characteristics
Company-wide			
● Acquisition, development and assignment of global top-class talent to lead value creation activities through innovation			

● Expansion of achievements through selection and concentration utilizing competitive advantage
● Strengthening competitive foundation for global top-class level

3. Translational clinical research: Clinical research during preclinical stage to PoC that clinically verifies the scientific concept that was developed through drug discovery operations
4. Chemistry, Manufacturing and Controls: A concept that integrates API process research and pharmaceutical development research with quality evaluation research

Priority Agenda for 2018

Continuous creation of innovative engineered antibody projects and establishment of drug discovery technologies for middle molecules

- Initiate clinical trials for two antibody projects: 2018-2019
- Further progress in middle molecule drug discovery: select a clinical drug candidate by the completion of IBI 18

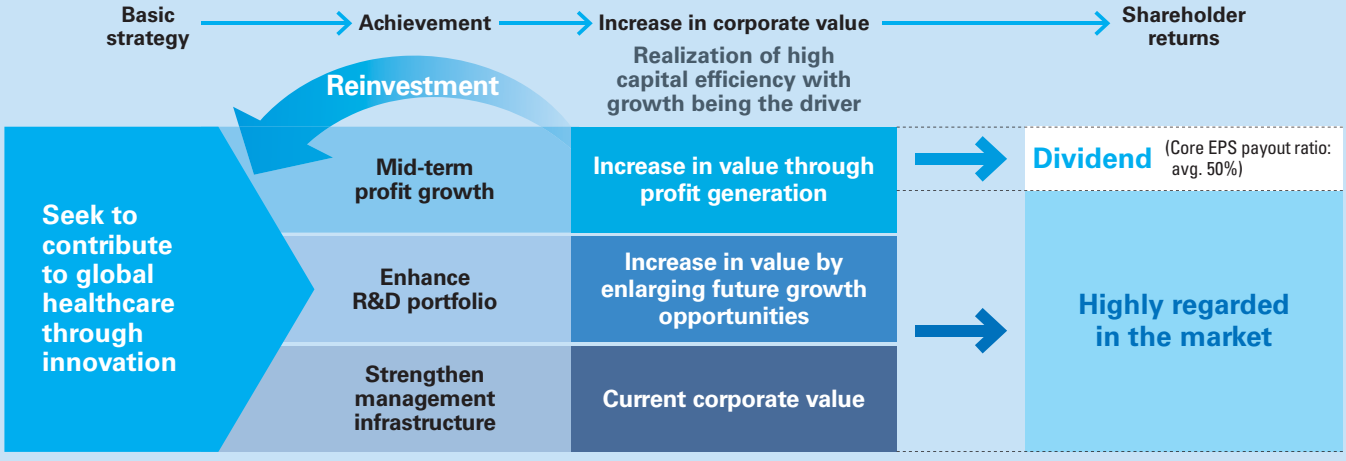
Secure development of growth-driver projects

- Regulatory filing for seven projects
  - Hemlibra: hemophilia A without inhibitors (Japan, U.S., E.U.)
  - Tecentriq: three line extensions (renal cell carcinoma (RCC), breast cancer, 1st line non-small cell lung cancer (NSCLC))
  - Actemra (systemic sclerosis), Avastin (RCC), Edirol (osteoporosis [China])

Strengthen the system for providing solutions and secure market penetration of new products

- Fastest maximization of value of four new products (Tecentriq, Alaglio, Hemlibra, obinutuzumab) and Perjeta line extension (adjuvant breast cancer)
- Hemlibra co-promotion in Europe
- Collaboration with Foundation Medicine Inc.: contribute to PHC with cancer genomic medicine as the No. 1 company in oncology

Basic Principles of Increasing Corporate Value and Shareholder Returns



CEO on Chugai's Strategy

IBI 18, a plan to enhance competitiveness and accelerate growth to achieve our goal of becoming a top pharmaceutical company, has progressed very smoothly. The operating environment is likely to remain difficult in 2018, but with our stronger competitive foundation, we will add to our accomplishments and solidify our contribution to all stakeholders through innovation. The keys to our success will be raising the capabilities of our people and pursuing innovation. Chugai remains committed to enhancing its corporate value.

The progress of IBI 18 has been remarkably smooth.

IBI 18 is our mid-term business plan for the three years from 2016 to 2018. The plan is aimed at acquiring and implementing competitiveness at a top global level and pursuing a selection and concentration strategy for acceleration of growth. In addition to fundamental changes to the drug pricing system in Japan and intensifying global competition in drug development, trends such as the entry of major pharmaceutical companies into the biosimilar business and the emergence of disruptive technologies that lead to completely new value are making the future business environment harder to predict. Therefore, under IBI 18 we are using our existing strengths to enhance our competitiveness in every function and pursue innovation as we seek to transform into a globally successful company in an uncertain environment.

As of the end of 2017, the second year of IBI 18, our progress has been remarkably smooth. All employees have worked hard to achieve the very high strategic goals we set for every function, and virtually all measures are moving ahead steadily. Results in several areas have even been better than planned. I am very proud that we have demonstrated to our stakeholders a strong ability to deliver on our strategies.

In 2017, we laid the groundwork for further progress globally.

Both revenues and profits in 2017 exceeded our targets and set new records. This is largely attributable to the increase in exports, royalties and other operating profit resulting from growth of global products from Chugai research, namely Actemra, a treatment for rheumatoid arthritis, and Alecensa, a treatment for ALK-positive non-small cell lung cancer.

Strategically, we achieved an important milestone for future strong growth in the global market with the launch of Chugai product Hemlibra (ACE910), a top-priority project. Applications for regulatory approval of Hemlibra for the treatment of hemophilia A with inhibitors were filed in June in the United States and Europe, and in July in Japan. In November, it obtained approval in the United States, where it was launched for the first time in the world. Alecensa, another product from Chugai research, was initially launched in Europe in February for second-line lung cancer treatment, and was approved for the additional indication of first-line treatment in November in the United States and in December in Europe. Among products in-licensed from Roche, we filed an application in Japan for approval of anti-PD-L1 antibody Tecentriq in second-line treatment of lung cancer. This project uses cancer immunotherapy, which has gained attention as a new type of cancer treatment. Approval was obtained in January 2018.

Other strategic initiatives are also progressing smoothly, including the establishment of a technology platform for middle molecule discovery and optimization of the production system for simultaneous development and rapid launches of multiple antibody projects. Under the new system for providing solutions that we established in Japan in April 2017, we began providing expert consultation and moved forward with initiatives suited to regional healthcare needs through collaboration among the Marketing & Sales, Medical Affairs and Drug Safety divisions. The measures in IBI 18 for enhancing our competitiveness at a top global level are almost complete, and we are now ready to add to our accomplishments in the final year of the plan.

Chugai is making solid progress in implementing its roadmap for value creation.

Tatsuro Kosaka
Representative Director,
President & CEO

In 2018, we will complete IBI 18 and build on our achievements.

In 2018, the final year of IBI 18, we will complete the measures under our three-point priority agenda for the year supported by the competitive foundation we have established and build on our achievements.

The first objective in the priority agenda is "continuous creation of innovative engineered antibody projects and establishment of drug discovery technologies for middle molecules." Using our antibody engineering technologies, we will accelerate the creation of new therapeutic antibody projects, and expect to initiate clinical trials for two antibody projects in the period from 2018 through 2019. In middle molecule drug discovery, we are eyeing the start of clinical trials during the next mid-term business plan, and hope to select a clinical candidate by the end of 2018.

The second objective is to "secure development of growth-driver projects." We are planning regulatory filings for seven projects, including for the development of Hemlibra for hemophilia A without inhibitors in Japan, the United States and Europe, and three line extensions for Tecentriq.

The third objective is to "strengthen the system for providing solutions and secure market penetration of new products." We aim for the fastest maximization of value based on appropriate use for four new products – Tecentriq, Alaglio, Hemlibra and obinutuzumab (GA101) – and a Perjeta line extension (adjuvant therapy for breast cancer). In addition, we will roll out the comprehensive gene profiling technology of Roche Group company FMI in Japan to contribute further to the advancement of personalized healthcare through cancer genomic medicine. In the FMI business, we plan to offer an information service with diagnostic functions by detecting alterations in 324 cancer-related genes in a single operation, which enables companion diagnostics and gene profiling. We are now setting up the organizational structure for the start of this business, centered on the PHC Strategy Department, which will be established in April 2018.

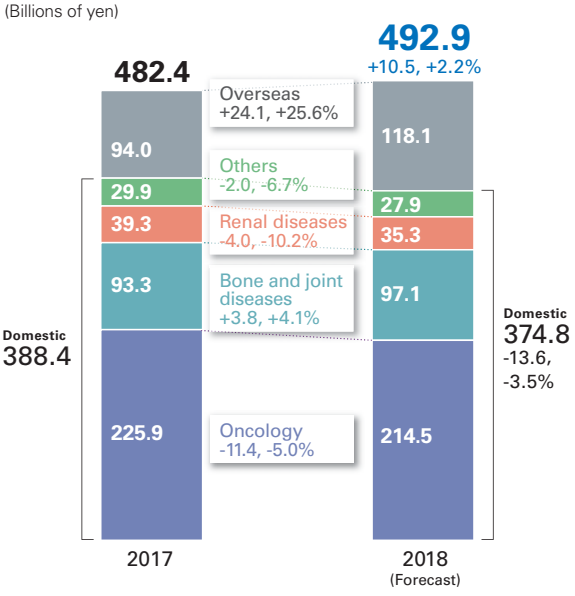
We expect to exceed the quantitative outlook of IBI 18 by a wide margin.

In 2018, despite the significant impact of the NHI drug price revisions, we forecast that revenues and Core operating profit will increase to ¥541.5 billion and ¥108.0 billion, respectively, driven by growth of new and mainstay products in Japan and overseas. As a result, we now anticipate that the Core EPS compound annual growth rate (CAGR) in the quantitative outlook of IBI 18 will be 9.5 percent,[1] well above the original low-single-digit target.

1. Based on average exchange rates for 2015

2018 Sales Forecast (Excluding Tamiflu)

(Billions of yen)



(Year-on-year percentage change)

Overseas		
Alecensa	26.4	+12.5 (+89.9%)
Actemra	73.0	+12.1 (+19.9%)
Hemlibra	2.0	-1.1 (-35.5%)
Renal diseases		
Oxarol	5.8	-2.4 (-29.3%)
Bone and joint diseases		
Edirol	31.7	+2.1 (+7.1%)
Actemra	35.2	+2.1 (+6.3%)
Bonviva	9.9	+1.2 (+13.8%)
Oncology		
Alecensa	22.7	+6.0 (+35.9%)
Alaglio	0.7	+0.7 (—)
Tarceva	9.8	-0.7 (-6.7%)
Avastin	92.0	-1.1 (-1.2%)
HER2 franchise	49.5	-5.7 (-10.3%)
Rituxan	23.4	-10.0 (-29.9%)

Note: Details of HER2 franchise Herceptin (26.6) -7.0 (-20.8%)
Perjeta (14.6) +1.0 (+7.4%)
Kadcyla (8.3) +0.3 (+3.8%)

For dividends, we maintain our policy of targeting a Core EPS[2] payout ratio of 50 percent on average based on stable dividends, after taking into consideration strategic funding needs and the results forecast. In line with this policy, we declared total dividends of ¥62.00 per share for 2017, an increase of ¥10.00 from the previous year, for a payout ratio of 44.7 percent. We expect to keep dividends at ¥62.00 per share in 2018 and plan to use internal reserves to make efficient investments to explore future business opportunities, which will increase corporate value, leading to greater shareholder value.

We are making solid progress in implementing our roadmap for value creation.

Products from Chugai research, including Alecensa and Hemlibra, and groundbreaking products in-licensed from Roche, such as Tecentriq, are Chugai's two growth pillars that will drive business expansion. In addition, we are steadily laying the foundation for further growth in the future, a foundation which includes the continuous generation of innovative antibody projects that apply our proprietary antibody engineering technologies and the creation of middle molecule drugs. In this way, we are making solid progress in implementing our roadmap for value creation.

Meanwhile, we are working to establish even more profitable operations by further improving our cost structure and conducting work style reforms for higher productivity which center on realizing diversity and inclusion and raising work-life synergy.

The key to our success will be increasing the capabilities of our people, the source of our corporate value. And as always, we will continue to concentrate on innovation. Through this approach, we will accomplish our mission of providing innovative products and services and expand the benefit we bring to patients and all other stakeholders. We believe that the results of this innovation will be assessed favorably by financial markets and lead to stable dividends.

I recently became the CEO of Chugai. My highest priorities are to contribute to patients and to pursue innovation, and I pledge to focus all my efforts on enhancing Chugai's corporate value, including non-financial value from an environmental, social and governance (ESG) perspective. Chugai will continue to transform itself as part of its commitment to growth. We appreciate your ongoing support.

2. Diluted net income per share attributable to Chugai shareholders after deducting items that Chugai defines as non-core items

Progress toward Quantitative Targets for Becoming a Top Pharmaceutical Company (2017)

1. Gain a position among the top three major Japanese pharmaceutical companies[1]

Domestic sales share	Ranked 5th[2]	△
Ratio of consolidated operating profit to revenues	Ranked 4th	△
Consolidated operating profit per employee	Ranked 3rd	○
Domestic sales per MR[3]	Ranked 2nd	○

2. Gain the top share in our strategic disease areas in Japan[2]

Oncology	Ranked 1st	○

Other main areas in 2017: Renal (ESA): 2nd, Osteoporosis: 2nd, Rheumatoid arthritis: 3rd

3. Increase overseas revenues ratio

Overseas revenues ratio	23.1%	○

○ = Achieved △ = Almost achieved

1. Financial results: Chugai: 2017, other companies: Years ended December 31, 2016 or March 31, 2017
2. Copyright © 2018 IQVIA.
Source: JPM 2017.
Reprinted with permission.
The scope of the market is defined by Chugai.
3. Calculated by Chugai, based on data from Fuji-Keizai Co., Ltd.

Progress of IBI 18

Established foundation to acquire and implement competitiveness at a top global level

Drug Discovery

- Cutting-edge immunology research in comprehensive collaboration with IFReC
- Initiated clinical trials for two in-house engineered antibody projects
- Advancement in middle molecule drug discovery research

Development

- Hemlibra trilateral regulatory filing (U.S., E.U. and Japan) and U.S. approval
- Progress of Tecentriq development in multiple cancer types and approval in 2nd line NSCLC

Pharmaceutical Technology

- Progress in construction of high-mix low-volume production site for antibody API
- Completion of FDA pre-license inspection for Hemlibra and enhancement of QC, QA, regulatory system for global supply

Sales/Medical Affairs/Safety

- Established a new system for providing solutions initiated through collaboration of three divisions
- Area strategy scheme to meet diverse regional medical need

CFO on Engagement with Investors

I was appointed CFO of Chugai on March 22, 2018. In my 35 years at Chugai I have been involved in planning and finance-related work. In the last few years, I was in charge of the Finance & Accounting Dept. under the former CFO, but now I will be performing the duties of the CFO myself.

Chugai will continue to tirelessly take on challenges as a top pharmaceutical company that consistently provides innovative products and services. To ensure that Chugai remains in a position to do so, I will plan and implement strategies and work to effectively and efficiently allocate and use its assets. I want to create opportunities for dialogue with both internal and external stakeholders to share with them an honest view of Chugai's current state and the direction it intends to take in the future. I ask for your continued understanding and support.

1. Return on equity
2. Core: Core basis results are the results after adjusting non-Core items to IFRS basis results. Core basis results are used by Chugai as internal performance indicators for representing recurring profit trends both internally and externally, and as indices for establishing profit distributions such as returns to shareholders. EPS: Earnings per share CAGR: Compound annual growth rate

Engagement Agenda Item 1 Financial and Capital Strategy

Q. What are your views on financial targets?

Sustained growth in absolute return by improving margins is an important financial KPI in our business model.

ROE[1] is now being emphasized in Japan, and I get many questions about this metric from shareholders and investors. However, the financial target we have set in our mid-term business plan IBI 18 is Core EPS CAGR.[2] The reason for this is that we are aiming for sustained growth in absolute return over the medium and long term.

ROE is the product of the ratio of profit to revenues (the net profit margin), asset turnover and financial leverage. In Chugai's case, a large portion of our business is biopharmaceuticals, for which the manufacturing process is relatively lengthy, and we hold adequate safety stock to fulfill our duty of providing reliable supply. For these reasons, there are certain limitations on increasing turnover. In addition, to maintain our management

I will maintain an active dialogue with shareholders and investors so that they have a full understanding of Chugai's envisioned future and the state of its corporate activities, including non-financial aspects.

Toshiaki Itagaki
Executive Vice President & CFO
General Manager of Finance Supervisory Div., General Manager of IT Supervisory Div. and General Manager of Finance & Accounting Dept.

independence based on our alliance with Roche, we must keep Roche's equity share within a certain range. Therefore, we cannot reduce shareholders' equity with share buybacks and treasury share cancellation as easily as some other companies can.

Therefore, improving margins is our main driver for improving ROE, and the best indicator of sustained growth in absolute terms from the viewpoint of shareholders is Core EPS CAGR.

3. The number of days from the purchase of raw materials to the collection of cash from the sale of finished products
4. Operating profit after tax and capital charge
5. Weighted average cost of capital

Q. Since you have no target for ROE, does that mean you are not conscious of the cost of capital?

The concepts of ROE and cost of capital are built into our internal management decision-making processes and mechanisms.

Companies obviously have a responsibility to efficiently use the capital provided by shareholders to achieve a level of profits higher than they expect. At Chugai, we also work diligently to optimize turnover by managing inventories and the cash conversion cycle (CCC),[3] and to adjust shareholders' equity with a dividend policy that emphasizes balancing shareholder returns and investment for future growth.

In addition, we conduct management using OPAC,[4] which is adjusted for cost of capital, and draw up strategies in formulating mid-term business plans to clarify the gap with targets that consider the capital spread. In assessing the business feasibility of investments and development themes, the concept of the cost of capital is built into our internal management decision-making processes and mechanisms in ways such as discounting present value at the WACC.[5] While we have only announced financial targets for Core EPS, we are by no means disregarding ROE and the cost of capital.

Engagement Agenda Item 2 **Strategic Investments and Dividend Policy**

Q. What is the current state of cash flow and how will Chugai use cash flow going forward?

We will use robust operating cash flow for strategic investments in facilities and in research and development to increase corporate value.

As of December 31, 2017, we held net cash of more than ¥240.0 billion. Cash inflow from operating activities is expected to increase as long as Core EPS continues to grow. Whenever we invest funds to bring new products to market or for in-house discovery and development, they are expensed on the income statement. However, most investments in future growth, such as in-licensing of technologies or development candidates, equity alliances, and capital expenditures, which require significant funding, are accounted for on the balance sheet. Chugai plans to invest aggressively in these areas.

For the time being, our main use of cash flow will be for investments in facilities and equipment. We are expecting to generate a steady stream of innovative projects through the use of our antibody engineering technologies and other means. To handle the simultaneous development of multiple projects and rapid product launches, we have been making investments for expansion of antibody API production capacity during the last few years. The new production facility (UK3) at the Ukima Plant is one example. It is expected to begin test production in 2018, with the start of full-scale commercial production planned for 2019.

Also coming up are major investments for expanding and enhancing our next-generation R&D infrastructure. We will complete the purchase of 170,000 m^2 of land for business use (Yokohama, Kanagawa Prefecture) at the end of 2018, and plan to commence construction of a new research laboratory there in 2019.

In addition, we will make strategic investments, such as in alliances with outside partners and in-licensing. Based on our agreement with Osaka University for comprehensive collaboration with IFReC related to immunology research, we will provide ¥10 billion over 10 years. Due to rapid advances in science and technology, we are on the threshold of an era in which disruptive innovation has the potential to dramatically alter industry structures built on former technologies and business models. We need to identify emerging trends, create opportunities for ourselves and draw up growth scenarios. The Science & Technology Intelligence Department was established in April 2017 as a specialized unit to handle such intelligence functions. It will actively look outward for acquisition of new technologies and partnerships with companies that possess innovative technologies, and will also seek opportunities for open innovation.

Q. What is your policy on returns to shareholders?

We will meet expectations by increasing corporate value through our business activities. For the time being, profits will be divided evenly between dividends and internal reserves.

First of all, we want to meet the expectations of shareholders by enhancing shareholder value. To accomplish that, we plan to continuously increase corporate value by creating groundbreaking drugs and innovative services. We will then return the resulting profits in the form of stable and steadily increasing dividends. Over the past several years, we have targeted a payout ratio of 50 percent of Core EPS on average. As long as Core EPS continues to grow, we will be able to increase dividends, but we cannot neglect strategic investments for sustained growth. For the time being, we believe that we can fund investments with cash inflow from operating activities every year while maintaining net cash at the current level.

Engagement Agenda Item 3 **Dialogue with Investors**

Q. How do you plan to engage with investors and other stakeholders?

I want to share values with stakeholders through dialogue so they can understand Chugai as it is.

If I were to describe Chugai with one word, that word would be "integrity." It has several definitions in the dictionary, but in my view the essence of integrity is "an attitude of sincerely facing yourself, your organization and society as a whole, and honestly pushing for what you think is best."

When I joined Chugai 35 years ago, I was taught that "pursuit of economic performance," "pursuit of social awareness" and "pursuit of human development" were the Company's principles of conduct. I learned that as a public entity, a company cannot survive if any of these elements is lacking, and that pursuit of social awareness and human development were especially important for Chugai, whose business is closely related to life. I also think that ESG, which has been gaining attention recently, means conducting management with integrity and respect for society and humanity.

In terms of pursuing the principles of conduct that have been passed down through the generations at Chugai, ESG represents the aspects that companies must never forget if they want to grow sustainably in co-existence with society. Accordingly, I want to give stakeholders a detailed view of our activities, including these non-financial aspects.

One of my key responsibilities as CFO is to gain stakeholders' support by ensuring appropriate and timely disclosure of both qualitative and quantitative information to give them an understanding of Chugai as it is. I will not limit this to one-way communication. I will use dialogue to get a full understanding of stakeholder expectations, and reflect those expectations in the Company's management. I look forward to hearing our stakeholders' candid opinions and requests.

Status and Plans for Major Investments in Facilities and Research and Development

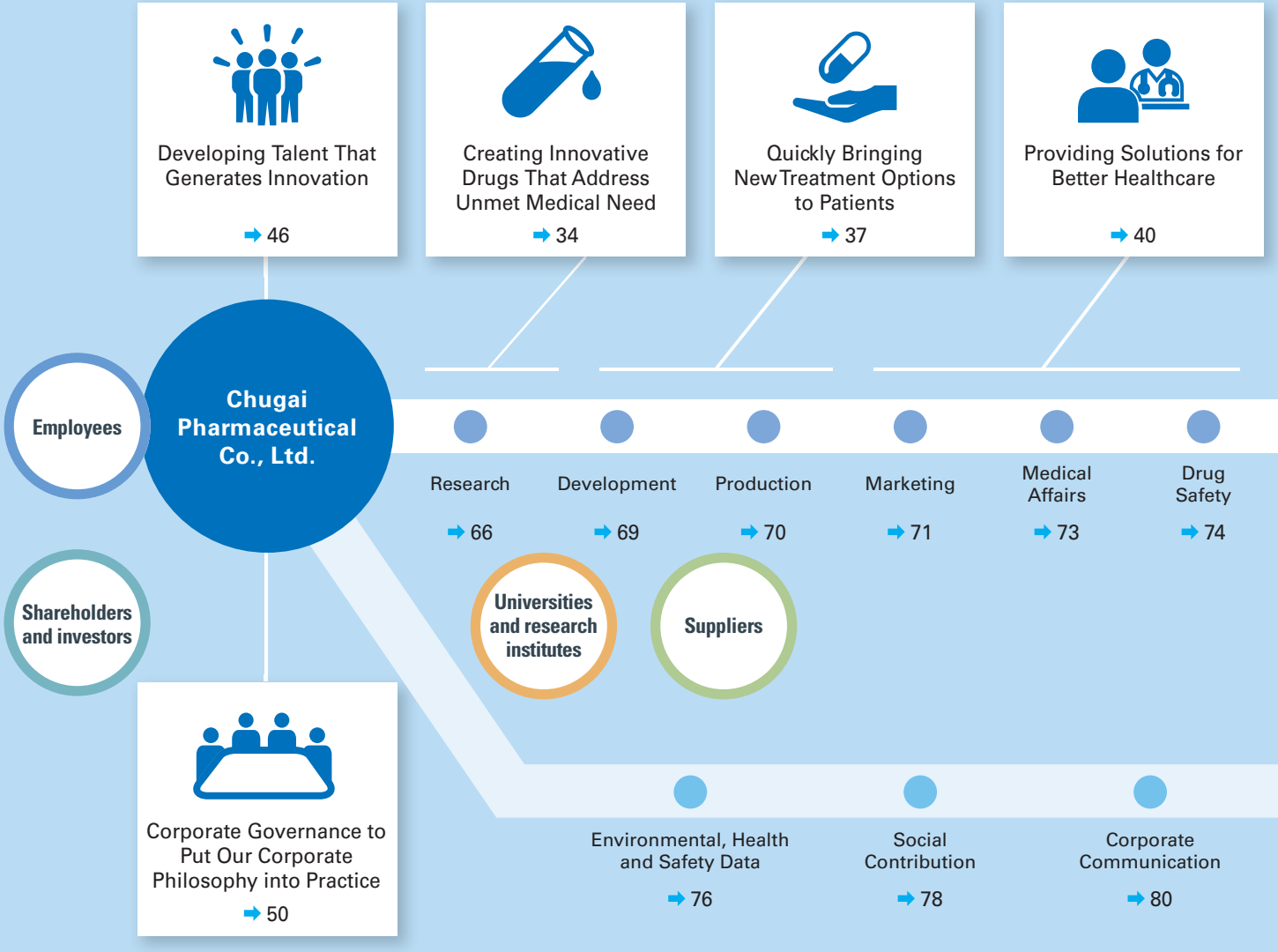
Planned Time Frame	Planned Investment	Site	Details
2012-2021	SGD 476 million	CPR (Singapore)	Accelerate creation of clinical candidates utilizing proprietary antibody technologies
2013-2015	¥2.9 billion	Ukima Plant	Doubling of manufacturing capacity for investigational biologics (Simultaneous development of multiple projects)
2013-2018	¥6.0 billion	Utsunomiya Plant	Enhancement of high-mix, low-volume production capability for pre-filled syringe form products (Installment of tray filler)
2015-2017	¥6.0 billion	Fujieda Plant	Strengthening of solid formulation manufacturing facility, etc. (Achievement of quick launch and steady supply)
2015-2018	¥37.2 billion	Ukima Plant	Enhancement of high-mix, low-volume production of antibody APIs for initial commercial products (Expansion of production capability with construction of UK3 facility)
2016-2018	¥43.4 billion	—	Purchase of business site in Totsuka Ward, Yokohama, Kanagawa Prefecture
2017-2027	¥10.0 billion	—	Comprehensive collaboration in research activities with IFReC

Value Creation Strategies

CONTENTS

Courtyard at Fuji Gotemba Research Laboratories

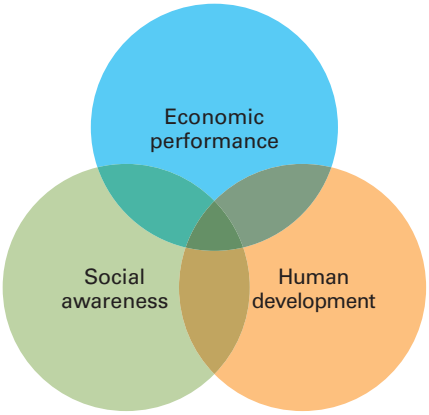
Creating Value with Stakeholders

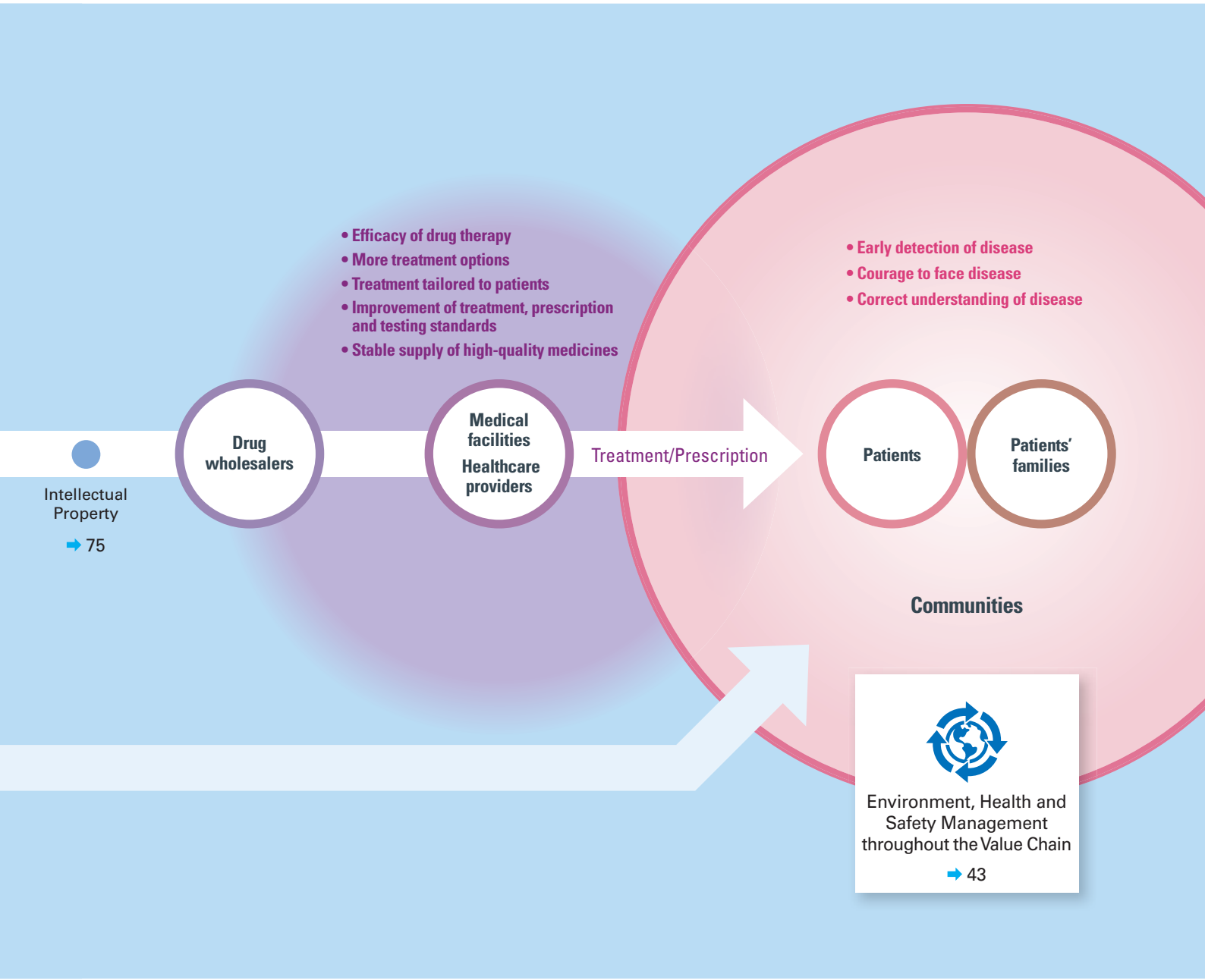


Chugai's business activities depend on the support of many stakeholders. Among them are patients, consumers, healthcare providers, shareholders and investors, business partners, society, non-profit and non-governmental organizations, and our employees. As changes in the business environment intensify, profit growth alone will not be enough for achieving long-term sustainable growth; processes and quality will also be scrutinized more closely than ever.

At Chugai, we have long held the belief that corporate value is a comprehensive product of our economic performance, social awareness and human development. We have planned and implemented our business strategies based on this concept, and have actively pursued initiatives to increase our non-financial value. As we go forward, we will fuse these three elements – economic performance, social awareness and human development – on a higher plane to achieve our mission of benefiting the medical community and human health around the world. By doing so, we intend to increase the value that Chugai creates.

Chugai's Concept of Corporate Value





The value that Chugai creates goes beyond improving the effectiveness of patient treatment through medicines. We also create value in ways such as enabling healthcare providers to deliver better treatment and helping patients to detect their disease early, understand it better and face it with courage. We are focusing on priority issues to support this value creation, entitled "Priority Issues to Enhance Corporate Value."

The Chugai Group's mission is to "dedicate itself to adding exceptional value through the creation of innovative medical products and services for the benefit of the medical community and human health around the world." We share the values expressed in United Nations SDG 3 – Ensure healthy lives and promote well-being for all at all ages. Many of our CSR activities to date are also aligned with other SDGs.

U.N. Sustainable Development Goals (SDGs)

Deputy Chairman on Engagement with Society

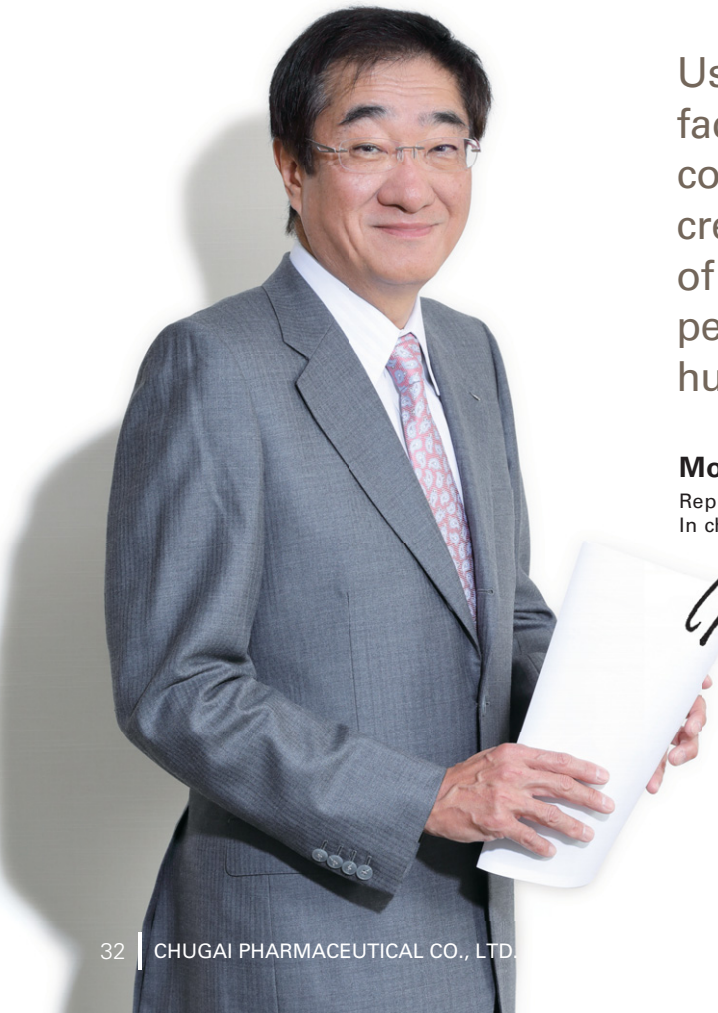
Solutions That Fit the Times

Chugai's mission is to benefit the medical community and human health around the world. As such, the role we play is continually changing. The pharmaceutical industry is facing an era of uncertainty marked by trends such as a declining birth rate and aging population, the growing need to contain healthcare costs, and low success rates and rising costs in research and development. In these circumstances, Chugai's presence in the industry is increasing. For this reason, we must address larger societal issues together with our stakeholders. One of the qualitative objectives of Chugai's fundamental goal of becoming a top pharmaceutical company is to be a "company that satisfies all its stakeholders and receives their active support and trust." I believe that by using innovation to solve the issues facing patients and the medical community, we will earn the trust of society.

Value Creation: Progress and Results

In 2017, our numerous research and development projects showed progress, and new drug approvals and launches were on schedule. Chugai's efforts continued to focus on providing solutions for social issues by creating innovative drugs and making them available to patients as quickly as possible. However, our achievements for the year went beyond that. For example, we promoted the use of extensive safety information through the databases we built to support effective adverse drug reaction management and continuation of treatment for patients. In addition, we contributed to community-based care by establishing a solution provision system adapted to the new regional healthcare system that will begin in 2018 in Japan. We see all of these accomplishments as major steps forward.

Helping patients gain an accurate understanding of their disease and improving their social and treatment environments are also issues that we can help to address, and we made progress in these areas as well. For disease awareness, in addition to the existing activities that we conduct jointly with local public bodies, we began cooperating with companies in other industries to increase the effectiveness of our efforts. We also implemented programs to support employees during cancer treatment and after they return to work, based on the belief that this is an activity in which Chugai should take the lead. In these and other initiatives, we are at the forefront of the industry in Japan.



Using innovation to solve the issues facing patients and the medical community is Chugai's vision of value creation. We will meet the expectations of our stakeholders by fusing economic performance, social awareness and human development on a higher plane.

Motoo Ueno
Representative Director & Deputy Chairman
In charge of Corporate Social Responsibility Dept., Audit Dept.

Meeting the Requirements and Expectations of Society

In our internal operations, we have made improvements to governance and our human resource strategy. One initiative in particular that I have spearheaded is strengthening compliance at the global level. At Chugai, we believe that corporate ethics take priority over profits, and as such, our definition of compliance goes beyond simply following laws and regulations to include meeting the requirements and expectations of society. With the increase in our global activities, it was important that we also build a robust global compliance system. We began that effort in 2016, and in 2017 we reorganized our committee structure and established a global system that includes overseas subsidiaries. The new system has enabled unified management of corporate compliance,[1] healthcare compliance[2] and regulatory compliance,[3] which had been handled separately. To promote the new system in frontline operations, I personally visited our overseas subsidiaries to talk about it with employees and exchange ideas, and I think our message was well received. We will continue such activities as we go forward.

Considering Strategies from a Long-Term Perspective

In the long term, advances in artificial intelligence and other disruptive technologies are likely to have a significant impact. In the medium term, it is important that we adopt these technologies to create added value, and in the long term we must also consider using them as tools to address outstanding social issues and deal with those that newly emerge. Cooperation with companies from other industries will be a key management priority in such initiatives, and we will work to enhance such collaborative efforts to generate further innovation.

To achieve sustainable long-term growth under these conditions, we must more clearly define the issues we should help to address and the value we offer, and act more strategically. Accordingly, in tandem with the formulation of the next mid-term business plan in 2018, we will also consider establishing a long-term vision and targets for non-financial aspects of our business after analyzing the social environment and identifying the value that we can contribute.

Corporate Value through Economic Performance, Social Awareness and Human Development

Underlying Chugai's approach to value creation that I have outlined is the consistent and firm belief that our corporate value is a comprehensive product of our economic performance, social awareness and human development, and that it is important to fuse these three elements on a higher plane. Ten years have passed since we established our CSR policy and started managing CSR action plans and their progress. Initially, many employees viewed CSR and business as separate endeavors, but through continued proactive communication within the Company, and diligent efforts by managers at every level to link our concept of economic performance, social awareness and human development to daily business activities and apply it in each job, I am proud to say that the concept has taken root.

Our vision for value creation is now widely shared. In my view, there is no better foundation for corporate growth and development. Through innovation, Chugai will continue to advance value creation that benefits the medical community and patients around the world. We appreciate your ongoing support.

1. Defined by Chugai as compliance with general laws, industry standards, Company rules and other regulations, as well as with societal norms and values
2. Defined by Chugai as compliance in general business operations related to conducting clinical testing, clinical research and nonclinical research, support operations, collecting medical information and providing drug information
3. Defined by Chugai as compliance with pharmaceutical regulations in Japan and overseas and with Company rules and procedures based on those regulations

Chugai Business Conduct Guidelines (Chugai BCG)

In order for the Chugai Group to fulfill its Mission Statement, be trusted and selected by society for its faithful conduct, and make sustained contributions to society, the Chugai BCG has been established as a set of standards governing both corporate and individual employee behavior based on the Core Values of the Chugai Mission Statement.

- **Responsibility to Patients and Consumers**
  We will always put the patient and the consumer first, and provide high-quality products and services of superior safety and efficacy.
- **Strict Adherence to the Law**
  In all our business activities, we will strictly adhere to all laws and their underlying principles.
- **Respect for Human Rights**
  We will respect human rights in every aspect of our business activities.
- **Fair Trade**
  We will engage in fair and transparent transactions with medical institutions and organizations, suppliers, customers and other business partners.
- **Management of Corporate Assets**
  We will achieve our management objectives through the optimal and appropriate management and use of corporate assets.
- **Disclosure of Information**
  We will actively and fairly disclose our corporate information in accordance with both legal requirements and the principles of social justice.
- **Social Contribution**
  We will remain aware of our responsibility as a good corporate citizen and actively continue with our social action programs.
- **Protection of the Global Environment**
  We believe the supreme value to the future of "one and only Earth" and, therefore, we continue our efforts to reconcile our business activity with nature and environments.
- **Relations with Governmental and Administrative Bodies**
  We will maintain fair and transparent relations with policymakers and administrative bodies.
- **Relations with External Bodies**
  We will maintain fair and transparent relations, within reason, with external bodies.

Creating Innovative Drugs That Address Unmet Medical Need

R&D expenditures (Core basis)
¥88.9 billion
+¥6.3 billion YoY

In-house products in development pipeline
13
No change YoY

Percentage of product sales qualifying for premium pricing
74%[1]
+1.0 pt YoY

In 2017, Chugai spent ¥88.9 billion on research and development. As a percentage of revenues, Chugai's R&D expenditures are 16.6%, which is relatively low compared with other Japanese pharmaceutical companies. This is a reflection of the efficiency of Chugai's R&D expenditures, made possible by the strategic alliance with Roche. Taking advantage of this, we have continued to focus on the evolution of our unique research technologies. As a result, 13 products in our development pipeline originate from our own research. Our products currently on the market are already addressing unmet medical need; including products in-licensed from Roche, 74% percent of our product sales qualify for premium pricing, an exceptionally high percentage.

Strengths
- Cutting-edge drug discovery technologies, especially biotechnology
  (Technology-driven drug discovery that enables differentiation)
- Strategic alliance with the Roche Group
  (Sharing of infrastructure, including a rich compound library)

Challenges
- Increasing difficulty and escalating cost of new drug development worldwide
- Potential paradigm shift in drug discovery due to disruptive technologies
- Lack of adequate standards for governments to assess the value of innovation
- Lack of attractive infrastructure in Japan for retaining top researchers

Chugai's Commitment to Innovation and Results

Pharmaceuticals have come a long way since the discovery of penicillin in 1928. The application of organic synthesis techniques and genomic technologies, the emergence of therapeutic antibodies, molecular targeted therapies, and other innovative therapies have made a significant contribution to medical treatment. Nevertheless, there are still people suffering from disease all over the world.

The business models of pharmaceutical companies vary, but given our technologies, knowledge, alliance structure and other characteristics, it is clear that continuously creating new treatments to address unmet medical need is the reason for Chugai's existence, and that is linked to benefiting patients worldwide. Rather than allocating capital and resources to development and marketing of generic drugs or expansion of our overseas marketing network, we are committed to creating new drugs through innovation – drugs with the potential to be first-in-class or best-in-class.

This approach has produced real results. We have announced a number of proprietary antibody engineering technologies, such as our Recycling Antibody® and bispecific antibody technologies, and we continue to steadily create products from our own research in an industry where development of novel drugs is becoming more and more difficult. Five BTDs from the FDA have been granted for our products, proof that our drug discovery capabilities are global-standard.

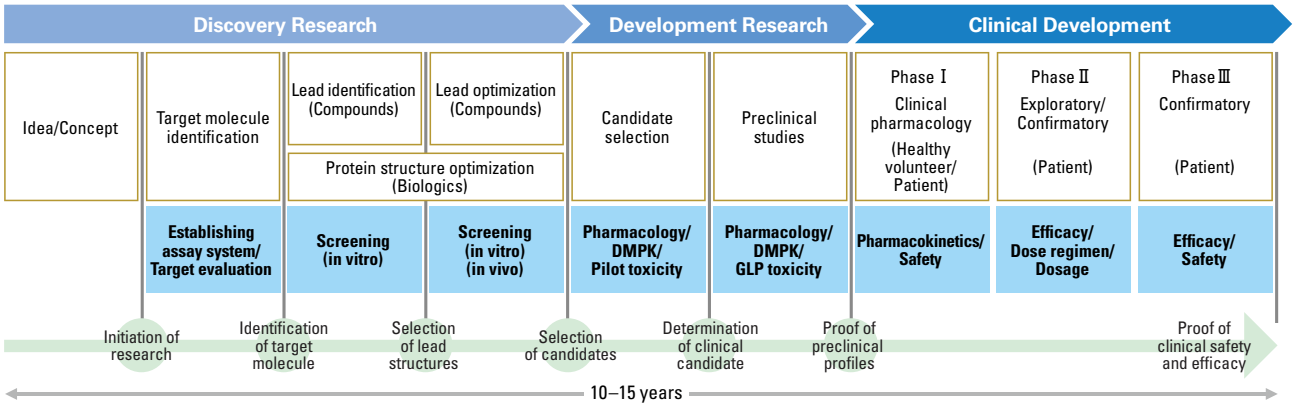
The Business Model and Technologies That Enable Innovative Discovery and Development

One of Chugai's strategic advantages that enables it to continuously create innovative drugs is its ability to concentrate resources on innovative research. Efficient development in Japan of projects in-licensed from Roche provides a stable revenue base while we conduct global development of projects from our own research in collaboration with Roche. This enables us to concentrate personnel and funds on groundbreaking in-house projects, leading to the creation of a steady stream of innovative drugs. Another powerful advantage is our access to Roche's global research infrastructure. The ability to share Roche's global research resources and infrastructure, including a rich compound library for use in high-throughput screening,[2] is a significant plus for Chugai in terms of cost, efficiency and other factors, and has dramatically increased our research productivity.

The key to this business model is Chugai's antibody engineering and other drug discovery technologies. Chugai's world-leading discovery technologies enable the Roche Group to sell innovative products globally, which helps drive the Group's overall growth. It is a win-win relationship. Chugai began conducting research and development of biopharmaceuticals more than 30 years ago, and the former Nippon Roche had also established world-class technology for the discovery of chemically synthesized agents. Over the years, we have cultivated knowledge and experience through our own pioneering initiatives while also incorporating outside technologies. As a result, we have

1. Avastin, which was subject to special market-expansion repricing, is counted as a product qualifying for premium pricing because it was assumed to meet the conditions for such pricing in 2017.
2. A technology that conducts evaluations at a high speed with robots or other means to select chemical compounds having activities for drug creation targets from a library consisting of a vast number of compound types with various structures

Process and Milestones of Drug Development



continuously evolved our technologies, and have built a technology platform that we can flexibly and appropriately apply to drug discovery.

This disciplined approach to research and technology has become integral to Chugai's identity. In the relationships we are building with our research and development partners, including Roche, Genentech and academia, we recognize each other's technological strengths and expertise, which leads to valuable discussions. At the discovery research stage, which includes basic research, open innovation is essential for acquiring new candidate compounds, and here too, our technological strengths have helped us to build a productive external network.

Innovating to Accelerate the Creation of New Drugs

Going forward, the environment for drug discovery is expected to be dramatically transformed by advances in disruptive technologies such as artificial intelligence and the Internet of Things, even as the difficulty of creating new drugs increases. To continue addressing unmet medical need in these circumstances, we believe it is imperative to speed up the drug discovery process, and at the same time to achieve new innovations that are not simply an extension of our current technologies.

To enable continuous generation of engineered antibody projects we need to increase the speed of drug discovery. For that reason, we established Chugai Pharmabody Research (CPR) in Singapore in 2012 to specialize in creating new therapeutic antibodies. In 2016, SKY59 and ERY974, which were discovered at CPR, entered the clinical phase of development.

In technological innovation, we are focusing on middle molecule drug discovery technologies and oncology/immunology research as part of the priority agenda of IBI 18 in order to establish a next-generation drug discovery technology platform. We are ahead of the competition in examining technical challenges and establishing the foundation for middle molecule drug discovery, which is showing promise even for previously undruggable targets, and are now setting our sights on the creation of middle molecule drugs. In oncology/immunology research, we entered into an agreement with Osaka University for comprehensive collaboration with the Immunology Frontier Research Center (IFReC) in May 2016 to further strengthen our research infrastructure. The combination of IFReC's cutting-edge immunology research and Chugai's proprietary technologies and expertise in discovery research is expected to lead to the creation and development of innovative new drugs. We are also looking to innovate the drug discovery process itself, including for next-generation personalized healthcare, by applying the highly advanced genomic analysis techniques and other capabilities of FMI, which joined the Roche Group in 2015.

Collaboration Scheme with IFReC

1. IFReC researchers will continue academic basic research without restriction.
2. Research outcomes of independent research projects[1] conducted at IFReC will be regularly disclosed (reported) to Chugai twice per year.
3. Chugai will select research projects[2] for joint research on the basis of the reports.
4. IFReC researchers will engage in joint research with Chugai.
5. During and after the final stages of non-clinical research, Chugai may engage in translational research projects independently.

1. Excluding research projects already under contract with a third party.
2. The number of joint research projects to be engaged in will be decided through discussions between IFReC and Chugai.

FOCUS

Establishment of discovery technologies for middle molecule drugs is progressing. We want to deliver these next-generation medicines to patients.

Takeo Iida
Researcher
Chemical Biotechnology Group
Discovery Technology Research Dept.

Today there are numerous innovative drugs that have revolutionized medical treatment. However, they can act on only a small fraction of the targets that cause disease. One of the roles we have taken on to help patients still suffering from illness is to create middle molecule drugs.

Small molecule drugs can penetrate into cells, but are unable to block protein-protein interactions. Conversely, therapeutic antibodies are able to act strongly and specifically on targets, but their size prevents them from passing through cell membranes. Combining the advantages of both of these drug categories, middle molecule drugs are next-generation medicines that can approach previously undruggable targets because they can both enter into cells and act strongly and specifically on targets.

Chugai has been conducting basic research on middle molecules for more than a decade. We have accelerated these efforts in the last few years, and are now building a middle molecule compound library and establishing basic drug discovery technologies, including a compound screening method. We have started applying these technologies to various discovery stage projects, which has yielded a steady stream of candidate compounds.

There have been many hurdles, but drug discovery experts in every area, including biotechnology, chemistry, pharmacology, pharmacokinetics and safety, have collaborated to build better compounds and assay methods, which has led to the advances we are seeing today. These advances are the result of the continuous efforts of team members to overcome challenges for the benefit of patients.

However, unprecedented challenges will continue to arise. Chugai is making company-wide efforts to bring this new kind of medicine to patients, and by surmounting the issues faced at every stage – not only in research but in manufacturing, clinical development and regulatory filings – we intend to be a pioneer in creating and developing middle molecule drugs.

Priority Issues to Enhance Corporate Value Development Production

Quickly Bringing New Treatment Options to Patients

Pipeline projects
41
+2 YoY

New products launched and new indications
2
−1 YoY

Domestic market share in therapeutic antibodies
No. 1[1]
No change YoY

With its own innovative projects along with numerous compounds in-licensed from Roche, Chugai currently has 41 pipeline projects, among the most of any Japanese pharmaceutical company. Cooperation with Roche, a cross-departmental lifecycle management system, and production functions that support rapid product launches and simultaneous development of multiple projects have led to a steady succession of product launches and new indications – a total of seven from 2015 through 2017. As a result, we have been able to make innovative products available to patients in a timely and appropriate manner, and currently hold the top market share in Japan for oncology and therapeutic antibody products.

Strengths
- One of the richest pipelines in Japan
- High product potential that addresses unmet medical need
- Strategic alliance with the Roche Group (Global development using Roche's network)

Challenges
- Escalating measures in various countries to contain healthcare costs
- Stricter standards for development and production worldwide
- Intensifying global competition in development

Internal Collaboration and Integrated Production System for Patients

No matter how many innovative drug candidates we discover, they will be of no use unless we can quickly develop them into commercial products amid intense global development competition and make them available to patients through regulatory approval in various countries. We also have to ensure a stable supply of those products.

Accordingly, to bring Chugai's innovative drugs to patients as quickly as possible, we have established a lifecycle management system that coordinates multiple functions, including research and clinical development, manufacturing, drug safety, regulatory affairs, and sales and marketing. Function leaders are assigned from different departments for each development project, and cross-departmental lifecycle teams work together under lifecycle leaders, who have been given authority over certain personnel matters, to expedite the progress of each project and the filing of applications for approval.

In manufacturing, we have shortened development time by building a seamless, integrated production system from CMC[2] development to commercial production. We continue to upgrade and enhance these technologies and systems to ensure high-quality, stable supplies of innovative drugs on a commercial scale.

Business Process Innovation Aimed at Global Competitiveness

In the global market, where multiple pharmaceutical companies compete fiercely to develop drugs for a single molecular target, quickly proving scientific value is vital. We have therefore been working to speed up global development by following a development model with a higher probability of success and by making efforts to prove the value of in-house projects from the early stages of development. As a result, Alecensa took just seven years from concept to launch in Japan, and Hemlibra (ACE910) was out-licensed to Roche less than two years after the start of clinical development, two unprecedented achievements for Chugai. In addition, Chugai's new approach of managing multinational studies has been successful for satralizumab (SA237) and nemolizumab (CIM331), leading to the out-licensing of both compounds.

Continuing innovation in our business process, in August 2014 we amended our business agreement with Roche regarding out-licensing. Among the changes, we now offer Roche compounds for in-licensing upon achievement of early PoC.[3] This enables Chugai to prioritize allocation of resources to the acceleration of early clinical development and proof of medical and economic value. We are working to speed up development overall by designing global development plans and negotiating

1. Copyright © 2018 IQVIA. Source: JPM 2017. Reprinted with permission. The scope of the market is defined by Chugai.
2. Chemistry, Manufacturing and Control: A concept that integrates API process research and pharmaceutical development research with quality evaluation research
3. Proof of concept: Confirmation that the therapeutic effect conceived in the research stage is effective in humans. Early PoC means that in addition to safety, signs of efficacy or pharmacological effect have been confirmed in a limited number of cases.

with partners earlier. Moreover, we have shifted to unified management in our three key regions of Japan, the United States and Europe by integrating and reorganizing our overseas subsidiaries under the Translational Clinical Research (TCR) Division established in 2015. By promoting cooperation between research and development from an earlier stage, we are establishing a faster, more competitive global development strategy while taking on a certain level of risk.

A New Production System Designed for Flexibility and Speed

In its production operations, Chugai is aiming for simultaneous development of multiple products for the quickest launches possible to continuously bring to market the innovative development projects generated from its research. Flexible application of equipment and staff between investigational new drug production and commercial production lines has raised the level of GMP[4] and promoted technology sharing, enabling a dramatic reduction in development time. Now Chugai is working on new changes to further increase flexibility, speed and productivity.

Specifically, at the Ukima Plant, we have achieved a significant increase in capacity utilization by employing plastic single-use bioreactors, and are constructing UK3, a new antibody API facility capable of high-mix, low-volume production from late-stage development to initial commercial products to prepare for development candidates that apply next-generation antibody technologies. At the Utsunomiya Plant, we have increased production flexibility by installing tray fillers that can handle filling of liquid medicines without making line changes or modifications, regardless of the syringe type.

In technology development, we are focusing on building a technology platform that leads to the early establishment of manufacturing methods. We are taking positive steps to build and patent such a platform for commercial production of innovative medicines such as next-generation antibodies and middle molecules, as we believe it will give us a distinct advantage in the future.

At the same time, regulatory authorities in Japan and other countries are raising the standards required for product quality. It is thus becoming increasingly important to continuously strengthen quality control and quality assurance, and to transfer quality management technology and expertise from development to manufacturing plants in order to obtain approvals without delay and maintain a world-class level of quality. We inaugurated the Quality Development Department in 2016, and have since integrated quality-related development and testing functions and carried out various initiatives, including centralizing management of related functions at production bases and horizontal deployment of technologies and expertise.

4. Good Manufacturing Practice: Standards for pharmaceutical production management and quality control

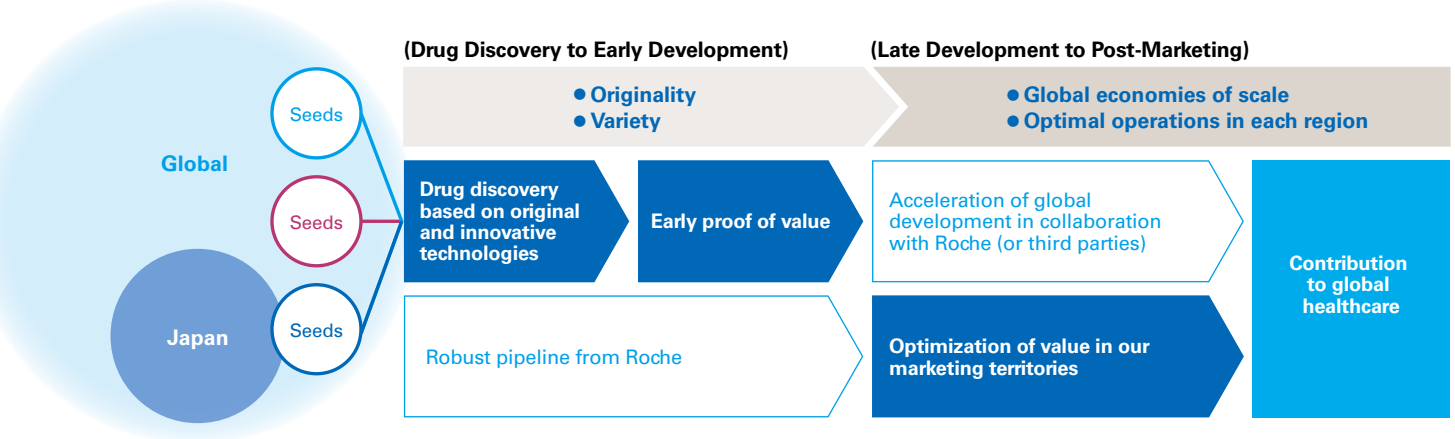
Exterior of UK3

6,000 L bioreactor in UK3

Biological API Production: Our Facility Portfolio

Plant	Target	Bioreactors	Features	Products
Utsunomiya	Commercial production (Large-scale)	10,000 L x 8 (UT1, UT2: Stainless steel tanks)	• Competitive low-cost production • Dedicated facilities	Actemra
Ukima	Commercial production/ Production of investigational APIs (Large-to-medium-scale)	6,000 L x 6 (UK3: Stainless steel tanks)	• Emphasis on flexibility • Can handle high-mix, low-volume production	Future development projects (Initial commercial production)
Ukima	Commercial production/ Production of investigational APIs (Small-scale)	2,000 L x 4 (UK1, UK2: Single-use)	• Improved capacity utilization through the application of single-use bioreactor technology	Future development projects (Initial commercial production)

Our Business Model for Generating Continuous Innovation



FOCUS

UK3, a new manufacturing facility at the Ukima Plant, will enable rapid launches of therapeutic antibodies and simultaneous development of multiple projects.

Akinori Imamura
Group Manager
Manufacturing Group 5
Ukima Plant

Chugai has a rich pipeline of biopharmaceuticals as a result of the continuous creation of new drug candidates made possible through the use of its antibody engineering technologies. The key to making these new drug candidates available to patients as quickly as possible is to increase speed at every stage from development to commercial production and enable the manufacture and supply of multiple products.

The Ukima Plant has been developing therapeutic antibodies using two manufacturing facilities, UK1 and UK2, for the supply of investigational drugs for early development. With the completion of UK3, a new facility for handling late clinical development to initial commercial production, we have established an end-to-end production system from early clinical development to launch that enables rapid development of multiple projects. This integrated system is not only top level in Japan, it is world-class.

Flexibility is the key feature of UK3. By flexibly combining its six 6,000-liter bioreactor tanks with two purification lines, it will be capable of simultaneously producing two products in the amounts required. Its design is also adaptable to the different manufacturing methods specific to engineered antibodies. The flexibility of this innovative facility will enable us to supply our proprietary engineered antibody drug candidates to patients at an unprecedented speed.

The UK3 building is also seismically isolated and contains emergency power generators, making the facility highly disaster resistant and capable of uninterrupted supply of medicines. Moreover, the production lines have a closed system design to the maximum extent possible to preserve a high level of quality and greatly reduce risk of contamination. In addition, the new facility has been designed to incorporate information technology for compiling production records and other data, enabling continuous improvement in terms of quality and cost.

Installation of equipment is complete, and performance testing has begun. Given the sophistication and complexity of this equipment, training of technicians and information sharing among members is essential. Members of the numerous departments concerned are working toward the start of trial production in the third quarter of 2018. We are committed to achieving the stable operation of this advanced production facility so that Chugai's innovative medicines can be delivered to patients as quickly as possible.

Priority Issues to Enhance Corporate Value Marketing | Medical Affairs | Drug Safety

Providing Solutions for Better Healthcare

Cases where safety information was collected in post-marketing studies
136,151

Customer inquiries
57,488[1]

Satisfaction ranking based on healthcare providers' assessments
3rd[2]

Providing solutions to healthcare providers is another way in which Chugai contributes to patients and their treatment. Our initiatives for promoting appropriate use of drugs include proposing treatment options and adverse event management strategies according to regional characteristics and patient need, providing various kinds of information, and supporting these efforts by collecting and evaluating a vast amount of safety information from around the world. We provide appropriate information based on state-of-the-art science in response to the approximately 60,000 inquiries we receive each year from healthcare providers and other customers. As a result of these initiatives, Chugai ranks 3rd in assessments from healthcare providers.

Strengths
- High product potential that addresses unmet medical need
- Commitment to safety management
- Support for healthcare delivery
- Knowledge and experience as a pioneer in personalized healthcare (PHC)

Challenges
- Policies to dramatically reduce drug costs in Japan (revision of drug pricing system)
- Tightening of regulations for safety, quality assurance and marketing
- Increasing specialization and sophistication of healthcare providers' information requirements

Providing Solutions in All Disease Areas Is Our Duty

Addressing unmet medical need involves more than simply providing medicines. To ensure that those medicines are used properly, it is also essential to provide product-related medical information and comprehensive safety information to healthcare providers. As Chugai holds a leading position in a number of disease areas, including oncology and bone and joint diseases, it is responsible for addressing issues from the onset of the patient's disease to medical examination, testing and diagnosis, prescription and treatment continuation in all disease areas. Our roles include encouraging potential patients who may not be aware of their illness to be examined by a physician, promoting appropriate tests and proposing adverse event management to healthcare providers to support the continuation of treatment.

To perform those roles, we have created a database compiled from real-world data, including incidence rates, examination rates, diagnosis rates, availability of platform, sales of various pharmaceuticals and treatment continuation rates. This database enables us to visualize the flow of patients and the coordination of care among medical institutions. The solutions that we provide address problems at the points where the various elements intersect in the patient journey.

Changing Our Framework for Providing Solutions in Japan

Under healthcare system reforms in Japan scheduled to take effect in April 2018, healthcare delivery will be overseen by prefectural governments. This is expected to lead to regional diversification of patient flow and functional division among medical institutions. Treatment of specialty diseases will no longer be centered in advanced treatment hospitals, and coordination of care between regional core hospitals and primary care physicians will be essential.

In response to these changes, in April 2017 Chugai led the industry in establishing a new cooperative cross-functional structure for its Marketing & Sales, Medical Affairs and Drug Safety divisions, which are in charge of providing solutions. We are now taking steps to provide more sophisticated and diverse solutions through cooperation and division of roles according to the responsibilities and expertise of each division.

Providing Solutions for Each Region and Demonstrating Value Including Coordination of Different Industries

Our basic activities in providing solutions for each region are consulting, which focuses on proposing treatment options and adverse event management

1. Number of inquiries to the Medical Information Department (including telephone, e-mail and fax inquiries)
2. Based on a survey of overall assessments of companies by physicians in hospitals with 100 or more beds, as defined by Chugai

plans tailored to individual patients, and liaison, in which we act as an intermediary between local healthcare providers and between local healthcare institutions. Our recent structural reforms will accelerate the optimization of these functions based on our branch network, which we have further broken down by region. In addition, we abolished the disease-area unit structure, which had been divided into the Oncology Unit and Primary Unit, and assigned general MRs, who cover all disease areas and deal with core hospitals and other general healthcare institutions, and specialty MRs for specialty disease areas such as oncology and autoimmune diseases.

With three major products to be launched in 2018, we will bolster training for MRs on how to present and support these new products. For area-based liaison functions, the Liaison Conference, where the activities of MRs in their respective regions are announced, has been held since 2013, and has helped to raise the level of MR activities and led to sharing of knowledge.

In addition, we began new initiatives in 2017. We are partnering with large cosmetics manufacturers and major life insurance companies to promote disease awareness programs in the areas of bone and joint diseases and oncology, and are working to provide new kinds of value through collaboration with local governments, public organizations and companies in other industries.

Delivering Product Value Backed by Science

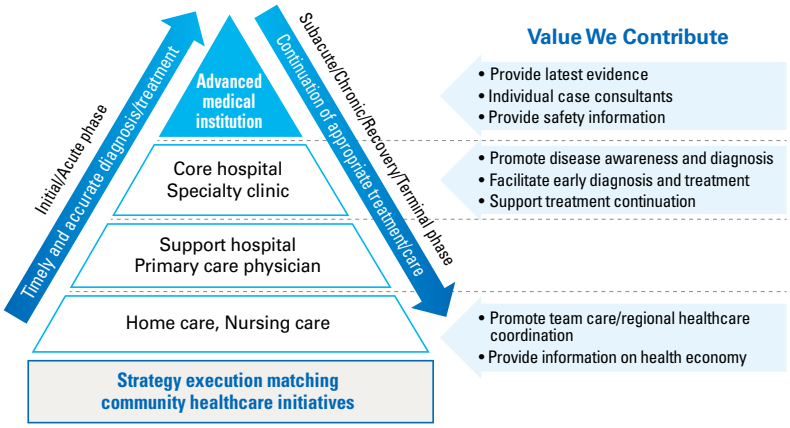
In medical affairs, we conduct and support contract-based post-marketing studies to generate, communicate and disseminate evidence on efficacy and safety in the clinical setting and non-clinical studies (basic research) to shed light on the modes of action of drugs. Conducted in cooperation with medical institutions and healthcare providers, these studies are based on complete transparency. The newly established Medical Liaison Coordination Section supports the provision of area-based solutions. In addition, the Medical Information Department, which was established in 2016 with the transfer of the function from the Marketing & Sales Division, responds to inquiries from customers by providing relevant information backed by the latest science as a consistent global voice in cooperation with Roche and Chugai's overseas subsidiaries.

Leading the Industry in Promoting the Use of Safety Information

In drug safety, we are building a safety management system in line with global standards to support the consistent collection and analysis of safety information from the preclinical and clinical stages, with the aim of establishing expertise in safety evaluation. Our timely collection and provision of safety data has attracted interest from the medical community and the industry overall. In particular, our ability to rapidly provide information according to patient characteristics using the post-marketing surveillance database tool (PMS DB tool) and safety information database tool (SI DB tool) that we developed in 2016 has won praise from healthcare providers.[3] This same system, which includes post-marketing surveillance and domestic post-marketing safety data, allows us to respond in a more timely manner to needs for urgent safety information. Also, at certain core hospitals we have commenced a trial service of an app[4] that supports adherence to medication in conjunction with a multidisciplinary social networking service (SNS). The app helps to alleviate the anxiety of patients undergoing treatment by facilitating smooth communication between patients and their healthcare providers. In addition, we have added Safety Experts as professionals to the staff of each regional management office to support risk communication geared to local characteristics, and are strengthening safety-related consultation according to needs and building networks with local doctors and pharmacists.

3. Source: Online article by Nikkei Medical Publishing, Inc. on AGING Web "Chugai's Ideal Information Prescription: 'PMS and SAFETY Database Tools' Providing Necessary Information to Those Who Need It, When They Need It" (Japanese only)
Part 1 (November 10, 2017)
http://www.nikkeibp.co.jp/aging/article/innovator/2017111001/
Part 2 (November 17, 2017)
http://www.nikkeibp.co.jp/aging/article/innovator/2017111701/
4. A service developed by Chugai to support multidisciplinary team care in cancer treatment. The app is linked with MedicalCareSTATION, a completely private SNS developed exclusively for healthcare providers and operated by Embrace Co., Ltd., and promotes drug adherence and adverse event management.

System to Provide Solutions in Japan



Key Success Factors

Strengthen Expertise	• Concentrate MR resources on specialty and acute care hospitals • Strengthen input of specialty MRs in oncology, RA, kidney and transplant/immunology disease areas
Area Optimization	• Planning and execution of prefectural-based detailed strategies • Delegation to branch offices, and maintenance of back office system • Cooperative support system covering both oncology and primary areas, backed by allocation of general MRs • Creation of a system to facilitate access to treatment for potential patients • Execution of a flexible, effective area-specific distribution strategy

FOCUS

We cooperated with people in various occupations to establish a clinic/hospital referral system to increase the treatment rate of osteoporosis.

Aya Kawai
Yokohama General Sect. 4
Yokohama Branch
(Currently assigned to
Oncology Sect. 3, Tokyo Branch 1)

Osteoporosis increases the risk of bone fractures even in normal daily life. Fractures of the femoral neck and spine in particular can severely impact patients' quality of life, for example, by causing them to become bedridden. Because of this, osteoporosis has attracted public attention. However, unless a bone density test is done, many people are unaware that they have the disease until they suffer a bone fracture. Consequently, the treatment rate of osteoporosis in Japan is estimated at only about 20 percent.

Kanagawa Prefecture, which my team was in charge of, is Japan's second largest prefecture by population but ranked third lowest in the screening rate. The treatment rate was only average, and the number of qualified osteoporosis managers* was low considering the number of patients requiring diagnosis or treatment. We wanted to do whatever we could to improve conditions for osteoporosis treatment in the region, so we set out to establish a diagnosis and treatment model with the cooperation of various people within and outside the Company.

Our first task was to make it easier for potential patients to get tested and receive treatment. Since the number of facilities with bone density testing equipment is limited, we worked to establish a clinic/hospital referral system by creating a referral list and sharing information on facilities so that patients could receive advice from general practitioners about testing facilities and receive referrals to suitable treatment facilities if diagnosed. At the same time, we held workshops and meetings to share best practices with physicians in specialty areas including orthopedic surgery, gynecology and internal medicine, as well as pharmacists and laboratory and other medical technicians, and actively worked to create a structure for raising awareness. We also promoted long-term treatment and improvement in drug adherence using Chugai products and other medicines.

As a result of these initiatives, there has been a noticeable increase in the number of referrals. Our efforts have also received recognition, and the commitment of Chugai employees to addressing the issues facing patients and healthcare providers has helped to build trust. In 2017, our initiatives were commended at the Liaison Conference, an event for sharing activities within the Company. We plan to spread success stories such as this nationwide, and want to further evolve the clinic/hospital referral system.

* Medical staff who are certified by the Japan Osteoporosis Society as specialists in osteoporosis liaison services

Priority Issues to Enhance Corporate Value

Environmental, Health and Safety Management throughout the Value Chain

Energy consumption per employee
296 GJ
-16.6% compared with 2010

Recycling ratio for industrial waste
76.4%
–1.8% pts YoY

Certified in 2018 as a White 500 company[1]

Environmental protection, which has a significant impact both in and outside the Company, and health and safety management underpin Chugai's business activities for realizing its mission to benefit the medical community and human health around the world. Accordingly, we conduct a wide range of environmental, health and safety (EHS)-related initiatives throughout the Company. We are enhancing environmental management at all business sites to ensure efficient use of energy and appropriate use of water and discharge of wastewater. In health and safety initiatives, we emphasize the physical and mental health of employees, and in recent years have been focusing in particular on activities to support cancer treatment and mental health. The extensive support provided through our personnel systems and organizational culture has received external recognition.

Strengths
- Integrated environmental, health and safety management
- Ongoing initiatives to address environmental issues based on mid-term goals
- Timely sharing of issue resolution through cooperation with the Roche Group

Challenges
- Enhance supplier management system
- Develop EHS auditors
- Strengthen ability to address increasingly sophisticated EHS issues

Our Objective: More Unified and Holistic EHS Management

As a healthcare company, Chugai is engaged in many specialized scientific activities. One aspect of those activities involves handling antibodies and highly active pharmaceutical substances. Our responsibilities in environmental protection and health and safety are numerous, and we consider them an important foundation for all our business activities. Therefore, we have included "Protection of the Global Environment" in the Chugai Business Conduct Guidelines (BCG), and are carrying out proactive environmental initiatives. At the same time, we recognize the importance of the well-being of our employees, and have been taking measures to maintain and promote their health.

As the demands of society have grown more diverse and sophisticated, integrated management of EHS is now required worldwide because of the close connection between "environmental protection" and "health and safety." Accordingly, Chugai has developed an integrated management system for EHS and implements the plan – do – check – act (PDCA) cycle at each facility.

We consider EHS management to extend throughout the value chain, from the procurement of raw materials and supply of products to the disposal of products after use by healthcare providers and

1. A certification given by Japan's Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi to large companies in Japan that practice outstanding health and productivity management. For details, see the website of Japan's Ministry of Economy, Trade and Industry (http://www.meti.go.jp/english/press/2018/0220_003.html).

Initiatives by Theme

Theme	Approach to Initiative
Reduction of Climate Change Risk	Reduce greenhouse gas emissions by reducing energy consumption and phasing out the use of CFCs and HCFCs. Focus not only on energy management at plants and laboratories, but also on Company-wide initiatives. Promote eco-friendly cars in MR fleet, etc.
Resource Conservation/ Waste Management	Achieve zero emissions of waste by improving recycling ratio and further reducing landfill waste.
Biodiversity Protection	Prevent emissions of pollutants into the environment by observing regulatory limits for air, water quality and soil. In particular, focus on controlling emissions into water with whole effluent toxicity (WET) tests and other methods to protect the water environment.
Chemical Substance Management	Promote the establishment of a system for proper management of chemical substances to ensure safety and prevent environmental pollution.
Reduction of Environmental Risk	Ensure thorough compliance with environmental laws and regulations by conducting extensive environmental law checks through external consultants.
Implementation of Risk Assessment	Create work environments that are free from unacceptable risks.
Employee Health Management	Maintain a support system based on cooperation with the health management organization and related departments. Improve health literacy.
Support for Employees with Cancer	Provide enhanced support for continuing to work while undergoing cancer treatment. Raise cancer screening rates.
Measures to prevent and treat lifestyle diseases among employees	Recommend check-ups for high-risk individuals and provide health guidance to those diagnosed.
Measures for employees' mental health	Conduct a return-to-work program for employees on leave due to mental health issues.
Measures to address employee presenteeism (working while sick)	Plan and implement measures based on survey results.
Measures to prevent workplace injury	Conduct measures based on EHS risk assessments.

patients. Going forward, we intend to broaden our activities to cover the overall value chain in closer cooperation with customers and suppliers, partners and industry organizations.

To utilize the PDCA cycle effectively, we introduced health and safety risk assessment in 2014 to remove workplace health and safety hazards. Since 2008, we have implemented an assessment system throughout the Chugai Group to reduce the risk of occupational injuries from exposure to all substances handled, not only restricted substances.

Implementing the PDCA Cycle with Mid-Term and Annual Environmental Goals

Chugai has set the following four mid-term environmental goals focusing on management of energy consumption and waste, with 2020 as the final year, to promote a medium-to-long-term perspective in environmental protection activities. We are implementing the PDCA cycle and conducting initiatives to meet these goals and the associated annual goals.

Mid-Term Environmental Goals	• Energy consumption per employee: 20 percent reduction compared with 2010 • Discontinuance of the use of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) • Zero emissions of waste[2]: Three facilities • Average fuel efficiency of MR fleet: 16 km/L or higher
Environmental Goals for 2017	• Energy consumption and greenhouse gas (GHG) emissions: Reduction of 2 percent or more compared with 2016 • Ratio of eco-friendly cars[3]: 60 percent or higher; average fuel efficiency of MR fleet: 16 km/L or higher • A recycling ratio of 80 percent or higher, a final disposal ratio of 2 percent or lower, and on-site verification of 40 percent or more of waste disposal contractor facilities • Plain paper copier (PPC) paper purchased: Less than the previous year; recycling ratio of 80 percent or higher

Progress of Initiatives in Climate Change, Waste Disposal, Recycling and Biodiversity[4]

To mitigate climate change risk, Chugai is working to reduce its GHG emissions through measures including reducing energy consumption, introducing eco-friendly cars, and reducing the use of CFCs and HCFCs toward eventual discontinuance. In resource conservation and waste management, we aim to increase the waste recycling ratio and further reduce landfill waste to achieve zero emissions of waste, and our initiatives are yielding results.

Water is an important raw material in pharmaceutical manufacturing, and it is also a crucial global resource. Chugai therefore monitors the volume of water it uses and the wastewater it discharges each year, and is building awareness of the effective use of water resources. Moreover, from the standpoint of protecting biodiversity, we began conducting WET tests in 2013 to ascertain the ecological impact of wastewater discharged from our facilities. In 2017, we conducted WET tests once at all plants and research laboratories, and confirmed that there were no problems.

Sound Organizational and Individual Health Is the Foundation for Growth

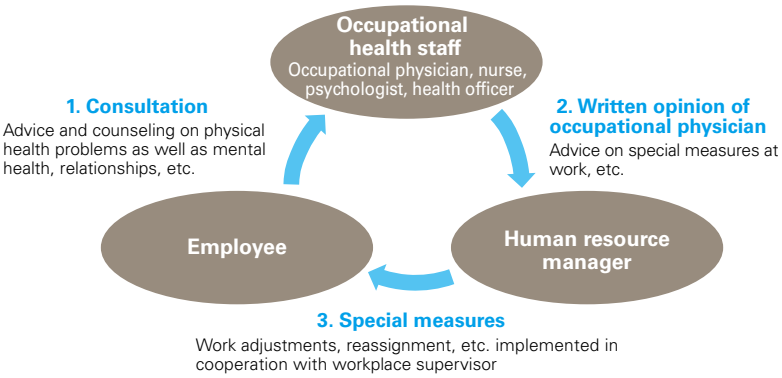
Chugai believes that sound employee physical and mental health and a satisfying and rewarding work environment where all employees can do their jobs with enthusiasm are the foundation for growth. Based on a policy of cooperating with the health insurance society and the labor union in simultaneous pursuit of both individual health and organizational health, we are proactively upgrading promotion frameworks, ensuring safety, preventing occupational injuries, promoting health maintenance, taking measures for mental health and creating vibrant, healthy work environments throughout the Company. (See "Focus" on the next page for details.)

Furthermore, we are conducting ongoing awareness programs to promote understanding of mental health issues, including training for managers on how to deal with such issues appropriately.

Creating Healthy, Energetic Workplaces

To prevent problems such as poor mental health or harassment, Chugai conducts measures to vitalize workplaces and improve the working climate in order to create highly productive environments where employees can work energetically. Since 2013, our health management and human capital development organizations have collaboratively conducted team coaching training for a cumulative total of 1,205 participants at 74 organizations as of December 31, 2017. Post-training surveys have shown improvement in work engagement, workplace identification and other items.

Basic Health Management Structure



2. A waste recycling ratio of 99 percent or higher
3. Includes hybrids and fuel-efficient vehicles
4. We received independent verification of our 2017 GHG emissions associated with energy consumption, leakage of CFCs and HCFCs, use of aircraft for business travel, and industrial waste generated.

FOCUS

Chugai has announced its Health Declaration. Quantitative targets will take health management to the next level.

Nobuaki Kato
Environment, Health and Safety Group,
Corporate Social Responsibility Department

Chugai has issued a "Health Declaration" to accelerate the "health and productivity management" that it has focused on up to now, and announced health management policies and priority agenda targets. Employee health management applies not just to employees who are having problems or are on leave due to illness or injury, but to all employees who need special consideration for their health status, including people with anomalies observed in health checkups, people working long hours, expectant and nursing mothers, and employees with disabilities. Occupational physicians, nurses, psychologists, health officers and other occupational health staff have provided the necessary support in cooperation with human resources staff and workplace managers and supervisors. These measures have produced results to a certain extent, and we plan to continue them while also focusing on prevention, including health and disease education.

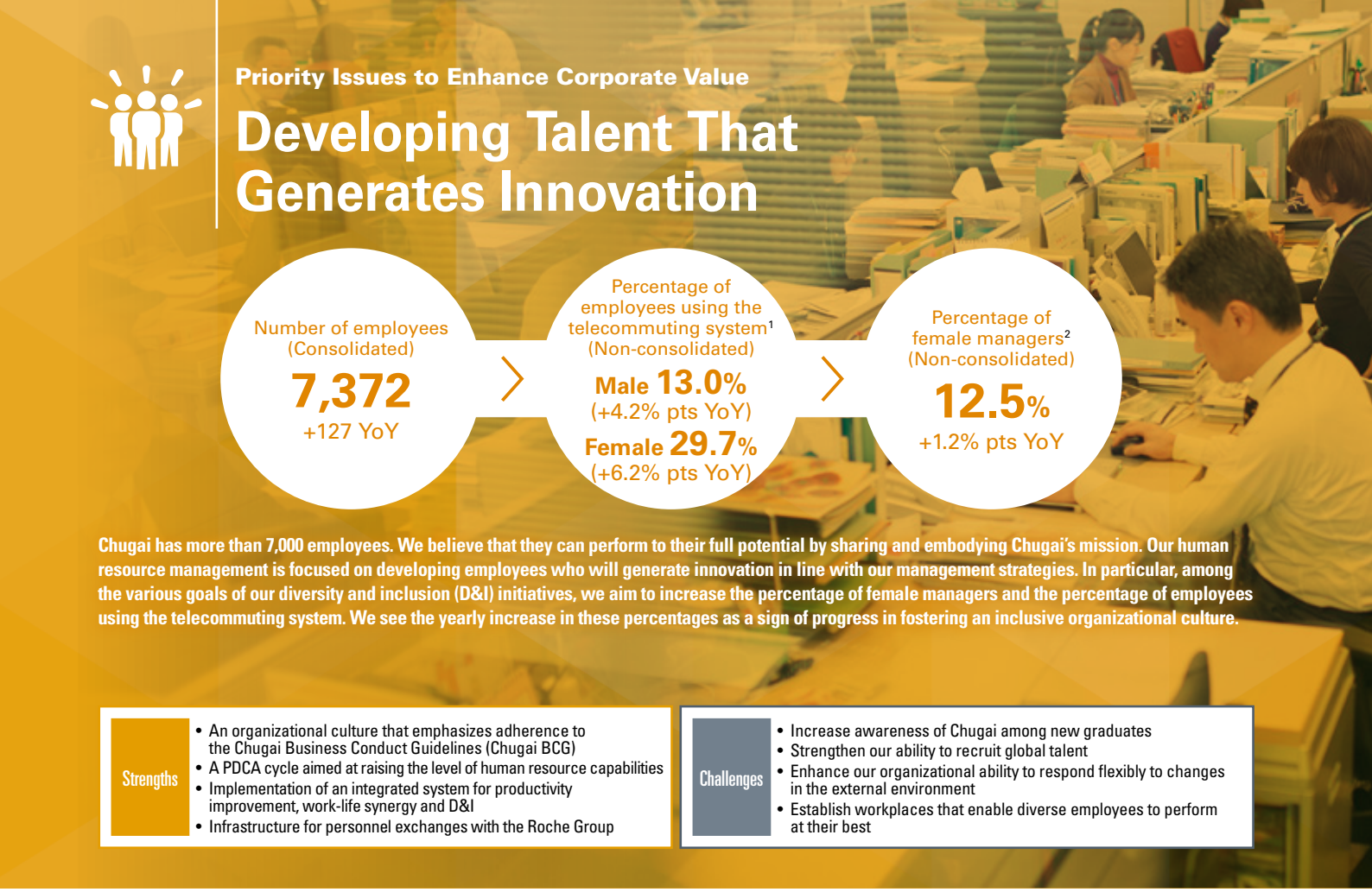
One area where Chugai has been in the forefront is enhancement of support systems for mental health and cancer treatment.

To facilitate a smooth return to work for employees on leave due to mental health issues, we conduct an ongoing program tailored to each individual. We have found that this program improves the relapse-free job retention rate one year after the return to work. In addition, as a leader in the field of oncology, Chugai has enhanced its support for employees who are working while undergoing cancer treatment so that they can do both. We continue to maintain and improve the consultation system for carrying out measures in accordance with treatment conditions as well as the support system for working during outpatient treatment.

A new initiative is to use employees' self-evaluation of their performance to quantify and analyze measures for employee health and the work environment. As a result, we will be able to set targets for each measure, which will enable more effective actions.

Priority Issues to Enhance Corporate Value

Developing Talent That Generates Innovation



Number of employees (Consolidated)
7,372
+127 YoY

Percentage of employees using the telecommuting system[1] (Non-consolidated)
Male 13.0%
(+4.2% pts YoY)
Female 29.7%
(+6.2% pts YoY)

Percentage of female managers[2] (Non-consolidated)
12.5%
+1.2% pts YoY

Chugai has more than 7,000 employees. We believe that they can perform to their full potential by sharing and embodying Chugai's mission. Our human resource management is focused on developing employees who will generate innovation in line with our management strategies. In particular, among the various goals of our diversity and inclusion (D&I) initiatives, we aim to increase the percentage of female managers and the percentage of employees using the telecommuting system. We see the yearly increase in these percentages as a sign of progress in fostering an inclusive organizational culture.

Strengths
- An organizational culture that emphasizes adherence to the Chugai Business Conduct Guidelines (Chugai BCG)
- A PDCA cycle aimed at raising the level of human resource capabilities
- Implementation of an integrated system for productivity improvement, work-life synergy and D&I
- Infrastructure for personnel exchanges with the Roche Group

Challenges
- Increase awareness of Chugai among new graduates
- Strengthen our ability to recruit global talent
- Enhance our organizational ability to respond flexibly to changes in the external environment
- Establish workplaces that enable diverse employees to perform at their best

The Type of People We Seek as a Top Pharmaceutical Company

At Chugai, we place high importance on human resource management based on our conviction that people are an invaluable asset in realizing a company's growth and development. As the foundation for that growth, all employees must embody Chugai's Mission Statement,[3] and we must develop human resources who will generate the innovation needed to achieve our fundamental goal of becoming a top pharmaceutical company.

Reforming Our Human Resource Strategy to Accelerate Innovation

Since 2012, we have created the various measures and systems that form our human resource strategy for becoming a top pharmaceutical company, including introducing talent management, promoting diversity and revising our personnel systems.

At the same time, in promoting the priority agenda objectives of IBI 18 – "Acquisition and implementation of competitiveness at a top global level" and "Selection and concentration strategy for acceleration of growth" – innovation is more important than ever, and the quality and speed of strategy execution must be at a top global level. Therefore, in IBI 18 we have set priorities for raising organizational capabilities in human resource management. We clearly define the type of human resources we seek in order to achieve the goals of IBI 18, and are taking various measures to secure those resources.

1) "Talent management" for developing and securing employees who will play a leading role in achieving our top pharmaceutical company vision and advancing our management strategies

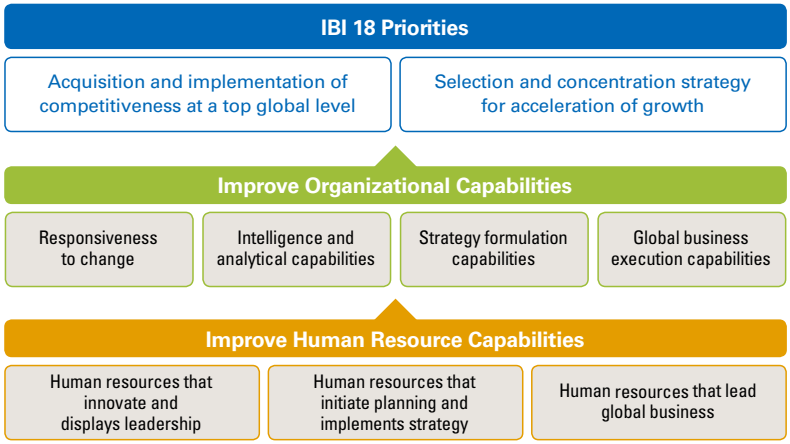
2) "Competency-based development through personnel systems" to raise organizational and individual capabilities

3) "Establishment and enhancement of the foundations of human resource management," including fostering an organizational culture through the promotion of D&I

We formerly used a survey to implement the PDCA cycle for improving the capabilities of our employees. In 2018, we introduced an updated

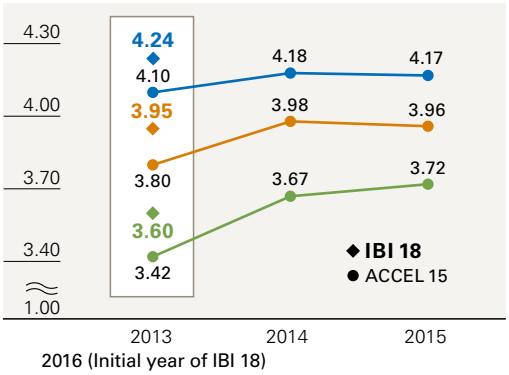
1. Percentage of eligible employees
2. Number of female managers as a percentage of the total number of managers in the Company
3. The Chugai Group upholds its Mission Statement – consisting of its mission, its core values and its envisioned future – in order to be a business that meets a diverse array of stakeholder expectations as it realizes its corporate responsibility to society. It is on the basis of this Mission Statement and its business philosophy, "Innovation all for the patients," that the Chugai Group conducts its business operations.

Challenges for Achieving IBI 18 (Organizational and Human Resource Capabilities)



survey. Although indicators such as the degree of penetration of strategies, which is directly linked to growth, have been rising steadily, the new survey is intended to raise our human resource capabilities based on factors such as comparison with major global pharmaceutical companies because we aim to compete at a top global level.

Degree of Promotion of Strategies (All-employee survey results)
(On a 5-point scale)



Evaluation Item

- I understand why it is necessary to achieve the targets of ACCEL 15/IBI 18 (Understanding)
- I am doing what I must to carry out ACCEL 15/IBI 18 (Action)
- My workplace has started to change for the better due to activities for ACCEL 15/IBI 18 (Realization)

Note: This survey was not conducted in 2017.

Talent Management for Becoming a Top Pharmaceutical Company:

Structuring Human Resource Development Plans with the Strong Commitment of Management

Since 2012, Chugai has built a talent management system for developing individuals based on visualization of human resources and their capabilities. Each department held discussions on medium-to-long-term human resource development policies and formulated development plans. At the same time, we have created a talent pool of future management candidates. In addition, we clarified our succession plan by selecting successor candidates for a total of 94 general manager and department manager positions in Japan. The Company-wide plan for grooming successor candidates, including medium-to-long-term career paths for each candidate, is being formulated through discussions by executive management and department managers.

In IBI 18, we have expanded talent management to a global scale, creating a new system that will enable Chugai to systematically and continuously recruit, develop and promote people who can perform internationally. For key positions in strategy execution, in addition to internal candidates, we also consider hiring from outside the Company, whether in Japan or overseas, and candidate selection is under the direct supervision of the president.

On the other hand, we still face challenges when it comes to general hiring across the Company. Due to the tendency toward uniform recruiting activities, particularly when hiring recent university graduates in Japan, differences in hiring outcomes have arisen between departments. However, since the type of employees we are looking for has become clearer through talent management, we plan to redesign our recruiting strategy to focus our efforts on hiring a large number of people who can generate innovation.

Competency-Based Development Through Personnel Systems:

Changing to Global-Level Standards and Foundations

In competency-based development, which is a prerequisite for implementing talent management, we have clarified the mindset and behavior that Chugai requires and have standardized the competencies on which employees are evaluated.

In IBI 18, we have redefined these competencies as the standards needed at the global level. A key question is how we will develop our human resources based on these competencies. Accordingly, we are conducting workshops and training for the managers of individual organizations to encourage dialogue between supervisors and their staff based on these competencies.

In 2017, we revamped our backbone system for human resource management to reflect the evolution of the talent management system described above. The new system, called "CAPTAIN" (Chugai All Persons Talent Information system), is a multilingual, cloud-based global personnel system. The use of a common personnel database throughout the Chugai Group will enable unified talent management and real-time monitoring and analysis of organizational conditions by managers, leading to faster, more effective enhancement of our human resource capabilities.

Establishment and Enhancement of the Foundations of Human Resource Management:

Integrated Management of D&I, Work-Life Synergy and Productivity Improvement

Chugai has positioned D&I as a priority issue for the establishment and enhancement of the foundations of human resource management. We believe that D&I, which leads to the creation of a diverse workforce that works together with enthusiasm, is essential in order for employees to generate new value – in other words, diversity is necessary for generating innovation. As such, in 2010 we launched a working team led by the president, and in 2012 we established a dedicated organization that has since been conducting initiatives to promote diversity. To promote gender diversity, we are actively providing opportunities for women to succeed. We set a target for 2018 of a 13 percent female manager

ratio, and have focused on career planning and development measures for women. To promote the success of older employees and foreign employees in Japan, we are building awareness of their potential through training and other programs and creating environments including workplace systems to help them play active roles. Under IBI 18, we are making special efforts to practice inclusion, which focuses on individual differences, and are taking steps to use diversity to vitalize our organization and contribute to our business success.

We also provide work arrangements and support systems so that all employees can have individual work styles and lifestyles that accommodate a variety of life events including but not limited to childbirth, child care and nursing care. With respect to "work style reform," which is currently a focal issue in Japan, studies and discussions between labor and management are under way toward not only raising productivity, but even changing our business itself.

These D&I and work-life synergy initiatives are integrally linked with productivity improvement in IBI 18, and are aimed at raising our corporate value.

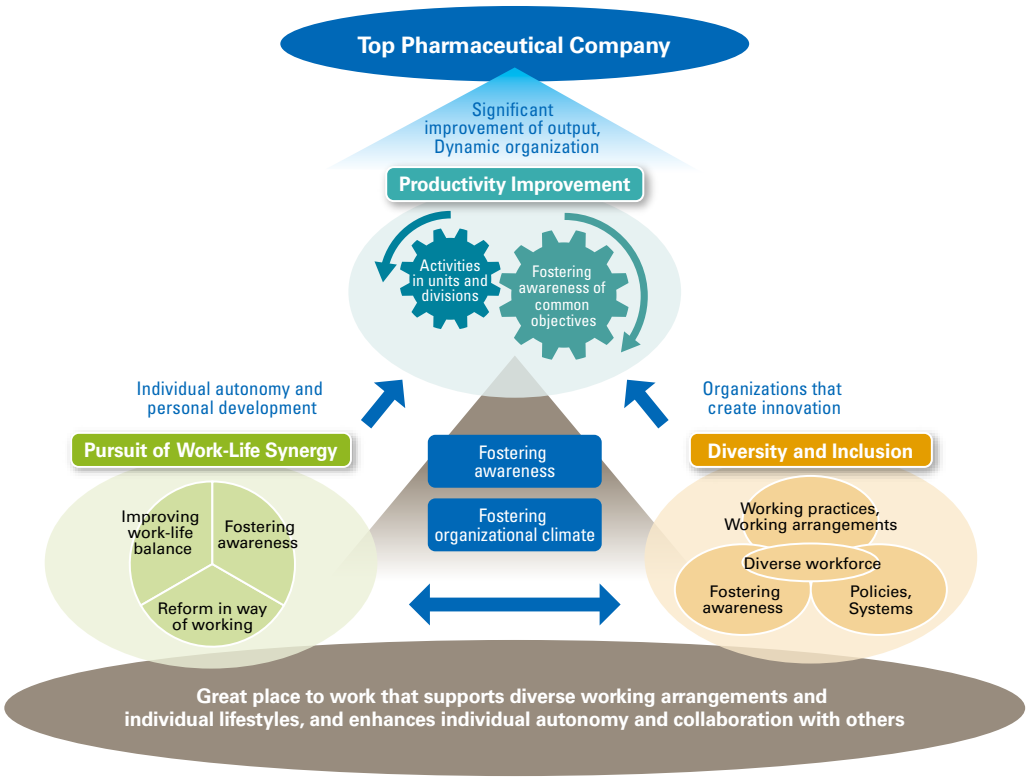
For four years in a row, Chugai has been selected as a Nadeshiko Brand for its exceptional record in promoting the success of women.

By promoting D&I and work-life synergy, we will create workplace environments where all employees can maximize their potential, which will increase the productivity of the entire organization and enable us to increase corporate value over the medium to long term. Along with these interconnected initiatives, we are conducting rational testing and analysis of the relationship of each productivity measure to D&I and work-life synergy.

Sharing of Core Values Is an Ongoing Effort

For Chugai, it is essential that all employees embody its Mission Statement. Therefore, promoting understanding and penetration of the Chugai BCG and human rights issues is an ongoing priority. Training is conducted for all employees every year. Emphasis is on corporate ethics in the first half and respect for human rights in the second half. In 2017, workplace training was conducted under the topics "The Global Compliance Framework" and "Prevention of Maternity Harassment" in the first half, and "Anti-Bribery Measures" and "LGBT: Consideration of Individual Differences" in the second half.

Productivity Improvement, Work-Life Synergy and Diversity and Inclusion



FOCUS

Through the evolution of talent management, we will advance a human resource strategy aligned with Chugai's management strategies.

Koma Oki
Group Manager
Global HR Group
Human Resources Management Department

IBI 18 is a strategic plan designed to raise Chugai's competitiveness to a global level, and requires greater quality and speed in each of its functions. We are also entering fields and specialty areas that cannot be handled with conventional approaches, so we need to identify people who have the necessary capabilities. Ensuring diversity to build a foundation for generating innovation is also becoming more important.

Accordingly, Chugai further upgraded its talent management system in 2017, restructuring it on a global basis. The new system places emphasis on assessing human resources in terms of individual qualities such as ability, experience, aptitude and career orientation. Specifically, we are building a globally shared personnel database, defining global competencies, clarifying key positions for execution of strategies, and identifying candidates for them.

The global competencies we have defined are in the form of seven standards to provide a simpler, more universal framework than we had previously. These clearer evaluation measures will enable employees to identify the gaps between the standards and their own performance, and apply that knowledge to improving their capabilities. At the same time, managers can engage in dialogue with those employees about their improvement actions and career plans, and promote human resource development. These efforts have already begun.

The foundation for evolution is now in place, but the key to assessing human resources and unlocking their full potential is to provide opportunities and environments that make the most of people's talents, allowing each individual to flourish. To realize this objective, we will promote communication on human resources and employee development, and foster an organizational culture in which they are given priority.

Global Competencies

Decision-making Standards	Customer Focused
	Global Perspective
	Integrity
Behavioral Standards	Strategic Thinking
	Collaboration
	Commitment
	Team & People Development

Priority Issues to Enhance Corporate Value

Corporate Governance to Put Our Corporate Philosophy into Practice

Chugai's mission is to dedicate itself to adding exceptional value through the creation of innovative medical products and services for the benefit of the medical community and human health around the world.

To fulfill this mission and achieve our fundamental goal of becoming a top pharmaceutical company, we have a unique business model. Under the strategic alliance with Roche, one of the world's largest pharmaceutical manufacturers, Chugai is a member of the Roche Group, but at the same time maintains managerial autonomy and independence as a separate listed company. Chugai pursues management that fulfills the mandate of many stakeholders appropriately and fairly.

Fifteen years have passed since the start of the alliance with Roche. Chugai's management has achieved significant results during that time, but will continue its steady efforts to enhance corporate governance for ongoing growth in corporate value.

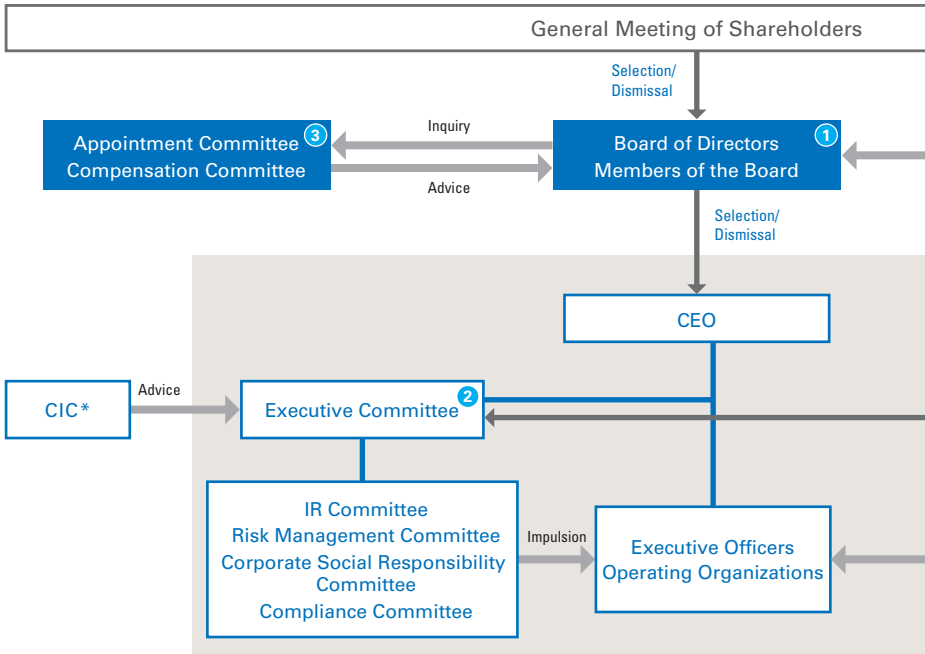
❶ Board of Directors: The Board of Directors makes decisions on management issues of primary importance and receives quarterly reports on the state of business execution as well as reports on key decisions made at the Executive Committee. It is also responsible for oversight of the execution of business operations. The board consists of nine directors including three independent outside directors.

❷ Executive Committee: The Executive Committee makes decisions on Company-wide management strategy and important matters concerning business execution. It consists of executive directors, including the CEO, and key executive officers and full-time Audit & Supervisory Board members. In addition, the IR Committee, Risk Management Committee, Corporate Social Responsibility Committee and Compliance Committee have been established under the Executive Committee.

❸ Appointment Committee and Compensation Committee: As an advisory board to the Board of Directors, the Appointment Committee deliberates on the selection of director candidates and candidates to succeed the executive directors, including the CEO. The Appointment Committee consists of one member from inside the Company and at least three outside members, including at least one independent outside director. The member from inside the Company is appointed by the Board of Directors from among the representative directors and persons with experience as representative directors. The outside committee members are appointed by the Board of Directors from among the non-executive directors and persons with experience as non-executive directors.

As an advisory board to the Board of Directors, the Compensation Committee deliberates on remuneration policy and the remuneration of individual directors. It consists of at least three outside committee members, including at least one outside director, appointed by the Board of Directors from among the non-executive directors including outside directors and persons with experience as non-executive directors.

Chugai's Corporate Governance System (As of April 1, 2018)



* Chugai International Council (CIC): Chugai established the CIC as an advisory body composed of Japanese, American and European industry leaders and professionals in various sectors to respond accurately to changes in the global business environment and conduct business in an appropriate manner, and to provide advice to further enhance decision-making.

Implementing the PDCA Cycle to Enhance Governance

At Chugai, corporate governance is an integral part of management. We believe that raising the effectiveness of corporate governance is important because simply creating systems and mechanisms is insufficient for increasing corporate value. In other words, constantly implementing the PDCA cycle to continuously examine and improve corporate governance is essential. Making consistent efforts toward that objective is a major responsibility of management. We are currently applying all of the principles of the Corporate Governance Code of the Tokyo Stock Exchange, but given the rapid pace of change in our operating environment and strategies, we plan to periodically reconfirm the sufficiency of our efforts to ensure sustainable growth.

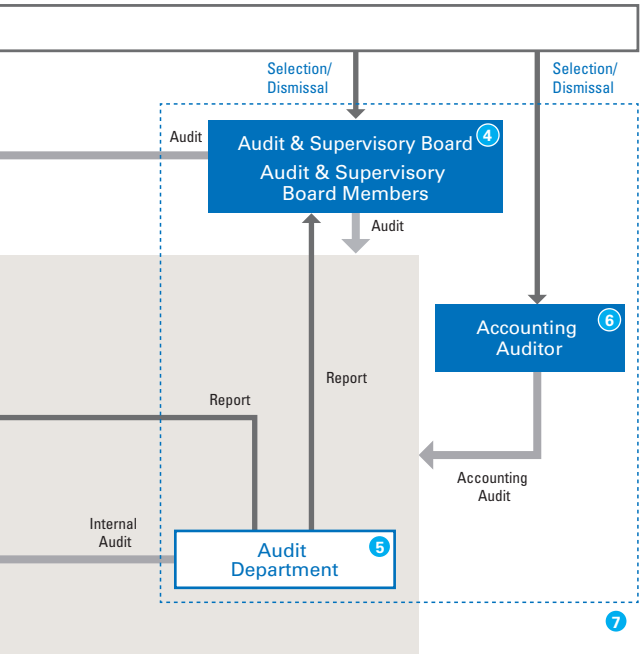
To fulfill our accountability to shareholders and other investors, Chugai's corporate governance initiatives and policies are clearly stated in the Chugai Pharmaceutical Co., Ltd. Basic Corporate Governance Policy, which is disclosed on our website.[1]

Improvements and Progress in 2017

In 2017, we again gathered the opinions of directors and outside directors, Audit & Supervisory Board members, and external experts (attorneys). These opinions formed the basis for a self-assessment survey of each director, which was used to evaluate the effectiveness of the Board of Directors. We identified issues, conducted multiple analyses and studies with external experts, determined how the Board of Directors could improve, and moved to implement enhancements.

One main area of improvement was increasing opportunities to provide information to outside directors and Audit & Supervisory Board members to enhance the ability of the Board of Directors to deliberate. At the same time, trends in the industry environment and other information were provided through a "Chairman's Message" by the Chairman of the Board of Directors at the beginning of board meetings. Supplementary information on agenda items was provided to outside directors by the Executive Office as necessary.

1. https://www.chugai-pharm.co.jp/english/ir/policy/governance.html



4 Audit & Supervisory Board Member Audits: Chugai has an Audit & Supervisory Board, and audits of management decision-making and business execution are conducted independently from business operations by four Audit & Supervisory Board members, including two outside members.

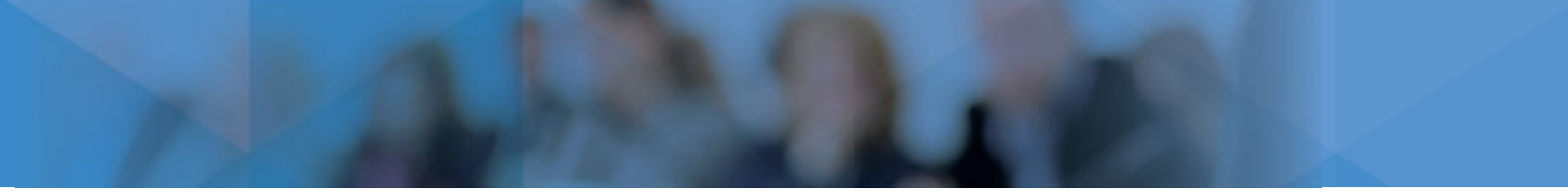
Audit & Supervisory Board members express their opinions in real time from the standpoint of appropriate corporate governance in a variety of situations including at meetings of the Board of Directors, the Executive Committee (full-time Audit & Supervisory Board members only) and the Audit & Supervisory Board.

5 Internal Audits: The Audit Department, with a staff that includes certified internal auditors and certified fraud examiners, conducts audits of the status of business execution of the Chugai Group, including subsidiaries, from various standpoints, such as the effectiveness, efficiency and compliance of business activities; reports and makes recommendations to the Executive Committee; and reports to the Audit & Supervisory Board. In addition, Audit Department staff serve as Audit & Supervisory Board members at subsidiaries.

In addition, the Audit Department assesses whether effective internal controls are established and being implemented in accordance with internal control standards generally accepted as fair and appropriate in Japan to ensure the reliability of financial reporting based on the Financial Instruments and Exchange Act.

6 Accounting Audits: KPMG AZSA LLC handles accounting audits and internal control audits.

7 Cooperative Auditing: Audit & Supervisory Board members, the Audit Department and the Accounting Auditor cooperate closely by regularly exchanging information to improve the effectiveness of their respective audits. Audit & Supervisory Board members and the Accounting Auditor confirm each other's audit plans and hold regular meetings to exchange opinions on matters including the results of quarterly audit reports. In addition, they work to strengthen governance at Group companies by coordinating with Audit & Supervisory Board members at subsidiaries on quarterly reports, fiscal year-end reports and other matters. The Office of Audit & Supervisory Board Members ensures the independence and enhances the auditing functions of Audit & Supervisory Board members.



In addition, as in the previous year, liaison meetings for outside officers were held and a facility tour was conducted at the Utsunomiya Plant, Chugai's main biopharmaceutical production base, following a board meeting at the facility. The tour was a good chance to follow up on the capital investment, and was also an effective means of providing information to outside directors and Audit & Supervisory Board members.

Main New Initiatives for Analyzing and Evaluating the Effectiveness of the Board of Directors

- A "Chairman's Message" by the Chairman of the Board of Directors at the beginning of board meetings
- Increased opportunities to provide information to outside directors and Audit & Supervisory Board members through lectures by external experts

Chugai's Corporate Governance in 2017

Organizational form		Company with an Audit & Supervisory Board
Management and execution		Separated
Introduction of external perspectives		Implemented • 3 outside directors (3 of whom are independent), 2 outside Audit & Supervisory Board members (1 of whom is independent), and 3 non-executive directors • Appointment Committee and Compensation Committee as advisory boards • CIC (Chugai International Council)
Board of Directors	Composition	10 members (4 executive directors, 6 non-executive directors (of whom 3 are independent))
	Number of meetings in 2017	9
Executive Committee	Composition	Management Strategy Committee:[1] 15 members (4 directors, 9 executive officers (excluding directors), and 2 Audit & Supervisory Board members) Business Operation Committee:[2] 13 members (2 directors, 9 executive officers (excluding directors) and 2 Audit & Supervisory Board members)
	Number of meetings in 2017	Management Strategy Committee: 32 Business Operation Committee: 15
Appointment Committee	Chairperson	Outside director
	Composition	4 members (1 director, 2 outside directors and 1 person with experience as an outside director of Chugai)
	Number of meetings in 2017	3
Compensation Committee	Chairperson	Person with experience as an outside director of Chugai
	Composition	3 members (1 outside director, 1 person with experience as an outside director of Chugai and 1 non-executive director)
	Number of meetings in 2017	3
Audit & Supervisory Board	Composition	4 members (2 full-time Audit & Supervisory Board members and 2 outside Audit & Supervisory Board members including 1 who is independent)
	Number of meetings in 2017	11 (including 1 extraordinary meeting)
Internal committees		Established IR Committee, Risk Management Committee, Corporate Social Responsibility Committee and Compliance Committee

1. Management Strategy Committee agenda items: Largely fundamental strategies and policies relevant to overall management
2. Business Operation Committee agenda items: Specific policies and other items that are important for business execution

Principal Matters Deliberated by the Board of Directors

Matters Concerning the General Meeting of Shareholders	• Calling of the General Meeting of Shareholders and determination of the agenda items • Approval of the Business Report, financial statements and other documents • Selection of director and Audit & Supervisory Board member candidates
Matters Concerning Directors and Audit & Supervisory Board Members	• Selection and dismissal of representative directors and executive directors • Directors' remuneration and bonuses • Approval of selection and dismissal of executive officers and advisors
Matters Concerning Stock	• Repurchase of shares, issue of new shares, etc. • Payment of interim dividend
Matters Concerning Management in General	• Formulation of plans and policies, and reports on their progress • Discussion of new business plans, alliances and other matters • Discussion of decision-making structure and organizations • Matters concerning finance and assets
Other Matters	• Approval and reporting of competing transactions • Approval and reporting of conflict of interest transactions • Implementation and reporting of evaluation of the effectiveness of the Board of Directors • Status of voting on proposals at the General Meeting of Shareholders • Verification of cross-shareholdings

Roles of Directors

Executive Directors

Responsible for business execution and supervision, executive directors report on and explain business execution matters and hold discussions on management. They execute the strategies decided in Board of Directors meetings.

Chairman of the Board of Directors
Ensures that the main points of resolutions and the direction of discussions are clear so that sound, transparent decision-making can be carried out expeditiously at board meetings. The Chairman also works to ensure the provision of information necessary for discussion and encourages vigorous debate.

"I will focus on monitoring management and resource allocation, taking into consideration the outlook of the external environment. I will also work to continuously enhance governance, giving weight to the views of outside directors and Audit & Supervisory Board members."

Osamu Nagayama
Representative Director & Chairman
Outside Director and Chairman of the Board of Directors of Sony Corporation

"To respond to the increasing expectations and requirements of stakeholders, I will strive to enhance corporate value through innovation and the fusion of economic performance, social awareness and human development on a higher plane."

Motoo Ueno
Representative Director & Deputy Chairman
In charge of Corporate Social Responsibility Dept., Audit Dept.

"As the CEO, I am committed to realizing sustainable growth by focusing on clarification of the Company's direction, appropriate resource allocation, and improvement of employee motivation. My aim is to help make Chugai a company of continuous innovation."

Tatsuro Kosaka
Representative Director, President & CEO
Outside Director of Asahi Group Holdings, Ltd.

Non-Executive Directors (Outside Directors)

Appointed based on their knowledge and expertise as outside corporate executives or as medical, academic and other professionals. Their role is to provide advice concerning management, exercise supervisory functions and participate in discussions and decision-making at Board of Directors meetings from an objective, outside perspective.

"I will draw on my experience as a doctor and researcher to contribute to the creation of innovative medicines and the enhancement of safety and risk management and offer suggestions and advice to establish Chugai's reputation as a company that puts patients first."

Dr. Yasuo Ikeda (Independent Director)
Vice-Chairman of the Board of Directors, Musashi Academy of the Nezu Foundation,
Specially Appointed Professor of Waseda University,
Professor Emeritus of Keio University

"As an outside director, I will closely monitor execution to support Chugai's unparalleled value creation, which is backed by the strategic alliance with Roche."

Masayuki Oku (Independent Director)
Outside Director of Kao Corporation
Outside Director of Komatsu Ltd.
Outside Director of Panasonic Corporation
Outside Audit & Supervisory Board Member of Nankai Electric Railway Co., Ltd.
Non-Executive Director of The Bank of East Asia (China) Ltd.

"I will offer recommendations and advice to management from an objective standpoint as an outside director to help Chugai earn the trust of stakeholders through the creation of innovative drugs and the provision of solutions."

Yoichiro Ichimaru (Independent Director)
Executive Advisor of Toyota Motor Corporation
Senior Advisor of Aioi Nissay Dowa Insurance Co., Ltd.

Non-Executive Directors (Directors)

Provide an objective, expert perspective from a standpoint that is independent from business execution, offer recommendations and advice regarding strategies and management, and participate in discussions at Board of Directors meetings.

"I will strive to ensure management based on mutual respect, integrity and a long-term orientation so that Chugai continues to deliver value to society as an innovative, science-driven company."

Dr. Christoph Franz
Chairman of the Board of Directors, Roche Holding Ltd.
Member of the Board of Directors of Stadler Rail AG (Switzerland)
Member of the Board of Directors of Zurich Insurance Group Ltd. (Switzerland)

"I see my role as supporting Chugai in pushing the boundaries of what is possible in pursuit of innovation, expanding access to medicines and strengthening compliance. I am also constantly looking to provide the best returns to shareholders, including minority shareholders."

Daniel O'Day
CEO of Roche Pharmaceuticals,
Member of the Corporate Executive Committee,
Member of the Genentech (USA) Board of Directors

"To support innovation, I will focus on selecting the best people for each role to scout and assess external innovation through teaming up with internal stakeholders. I foster an environment in which people are empowered and excel through teamwork."

Dr. Sophie Kornowski-Bonnet
Head of Roche Partnering and Member of the Roche Enlarged Corporate Executive Committee

The Essence of Chugai's Management: The Relationship with Roche and Securing the Rights and Equality of Shareholders

Roche, the parent company of Chugai, holds 59.89 percent of Chugai's outstanding shares based on the strategic alliance agreement between the two companies. Roche and Chugai have agreed to cooperate in maintaining the listing of Chugai's common stock on the First Section of the Tokyo Stock Exchange.[2]

The aim of this alliance is to establish a new business model that differs from conventional corporate acquisitions and joint ventures. Although Roche Holding Ltd. includes Chugai in its consolidated accounts, Chugai functions as an independent listed company and makes all of its own management decisions based on the principle of self-governance. Chugai believes that autonomy and diversity are key to generating innovation, that maintaining its independent management brings diversity to the Roche Group, and that the pharmaceuticals it creates as a result contribute to all stakeholders, including patients and minority shareholders. Chugai recognizes that the various benefits from being listed on the First Section of the Tokyo Stock Exchange – such as its solid credit rating, flexible fund procurement, name recognition and social presence – are supported by the understanding of minority shareholders and investors who are potential shareholders, in addition to Roche. That is why in its business dealings with the Roche Group, Chugai conducts all transactions fairly using third-party prices to protect the interests of minority shareholders.

As of April 1, 2018, three of Chugai's nine directors are from the Roche Group. However, they do not comprise a majority of the Board of Directors, and thus Chugai considers its management independence to be secure. Chugai will continue to manage its business with autonomy and independence as a publicly listed company.

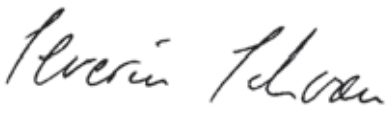
Chugai believes that securing substantially equal treatment of shareholders is very important. We therefore emphasize giving due consideration

2. The Tokyo Stock Exchange requires delisting if the ratio of tradable shares to listed shares is less than 5 percent.

Restrictions on Roche's Shareholding

Period	Maximum Shareholding
Oct. 1, 2002 – Sep. 30, 2007	50.1%
Oct. 1, 2007 – Sep. 30, 2012	59.9%
Oct. 1, 2012 and thereafter	Cooperate in maintaining Chugai's listing

Dr. Severin Schwan
Roche Group CEO



Based on our unique business model, we will continue to create value for all stakeholders.

I highly appreciate the collaborative and trustful partnership Roche and Chugai have established over the past 15 years. Our unprecedented business model successfully combines Chugai's autonomous management and research activities with specific cooperation within the Roche Group. Roche's global organisation delivers Chugai's novel medicines to patients around the world, whilst Chugai also brings Roche's medicines to Japanese patients. This arrangement incentivises Chugai's drug discovery and maximises the value for patients in all countries and ultimately for all our stakeholders, including minority shareholders.

The global development of the breakthrough hemophilia A medicine Hemlibra and the delivery of this novel treatment to patients worldwide is the latest striking example that the diversity of approaches fosters innovation. Going forward, we expect an even more competitive market environment, but I am confident that novel Chugai products such as Actemra, Alecensa and Hemlibra will help to drive growth for the Roche Group.

In 2017, Chugai and Roche celebrated the 15th anniversary of our strategic alliance. I could not be prouder of what we have achieved. I am also excited about the future. The appointment of Tatsuro Kosaka as Chugai's new CEO places leadership of the company in extremely capable hands, further building on the legacy of Osamu Nagayama's outstanding record of achievements. Together we will continue to create and market breakthrough medicines that bring new hope to millions of patients worldwide.

to minority and foreign shareholders and to maintaining an environment that allows them to exercise their rights.

Therefore, recognizing that business plans are a commitment to shareholders, Chugai promotes the disclosure of a variety of information and constructive dialogue with shareholders and investors. Directors and executive officers make every reasonable effort to meet requests for interviews from shareholders and investors.

The Basic Governance Structure That Supports Chugai's Business Model

Separating management decision-making and business execution to expedite business execution and clarify executive responsibility is essential for promoting Chugai's unique business model while ensuring its effectiveness. To that end, the Board of Directors is responsible for making decisions on management issues of primary importance, while other decisions on business execution are made at organizations such as the Executive Committee. Starting from March 2018, the Chief Executive Officer (CEO) has ultimate responsibility for making decisions on Company-wide management strategies and important matters concerning business execution.

Introduction of Outside Perspectives to Enhance Objectivity and Responsiveness to Change

To reflect diverse stakeholder viewpoints in business decisions, Chugai has taken measures to obtain outside perspectives, such as nominating outside directors and establishing a council made up of domestic and overseas specialists.

Chugai International Council (CIC)

To respond accurately to changes in the global business environment and conduct international business in an appropriate manner, Chugai works to further enhance decision-making by operating the Chugai International Council (CIC), which is composed of Japanese and international professionals in various sectors. Of the 11 council members, including the CIC Chair, one is a woman.

Outside Directors

Chugai has appointed outside directors to reflect a broader range of stakeholder views in management decision-making. Outside directors point out issues and give advice concerning Chugai's management from their abundant experience and knowledge as corporate executives, physicians or university professors. The average rate of attendance by outside directors at the nine board meetings in 2017 was 100 percent.

Support System for Outside Directors and Outside Audit & Supervisory Board Members

Chugai appoints staff in the Secretarial Department to support the activities of outside directors. Managers including the General Manager of the Corporate Planning Department provide, as needed, reports on major changes in the operating environment and advance explanation of particular items to further enhance decision-making.

The Office of Audit & Supervisory Board Members is responsible for supporting the activities of Audit & Supervisory Board members in ways such as conveying internal information and providing materials for board meetings in advance.

In addition, Chugai invigorates the deliberations of the Board of Directors by preparing materials containing adequate information relevant to agenda items and distributing them to outside directors and outside Audit & Supervisory Board members well in advance of meetings. Chugai also provides additional information required by outside directors and outside Audit & Supervisory Board members and takes advantage of opportunities to provide advance explanation.

Officer Remuneration That Emphasizes Linkage with Performance and Stock Price

Chugai's fundamental policy for remuneration of directors and Audit & Supervisory Board members is to attract outstanding people and appropriately motivate them in order to continuously increase the Chugai Group's corporate value. At the same time, remuneration levels and the remuneration system are designed to link compensation of officers with the Company's performance and align their interests with those of shareholders.

Chugai International Council (CIC) Composition

CIC Chair

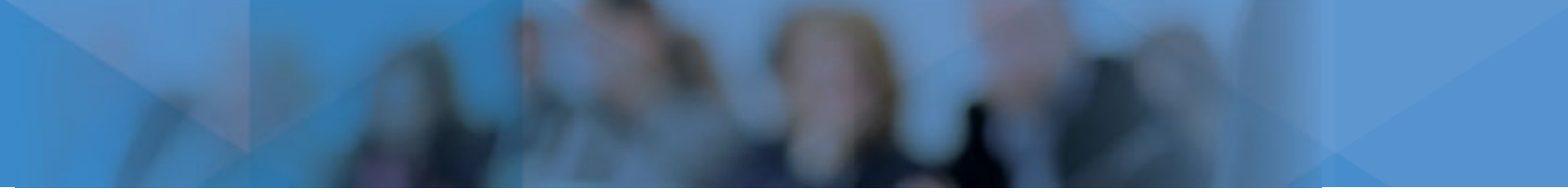
- **Henry L. Nordhoff (U.S.)**
  Former Chairman of the Board, Gen-Probe, Inc.

CIC Members

- **Virginia Bottomley (U.K.)**
  Former Health Secretary of the U.K.
- **William M. Burns (U.K.)**
  Former Chief Executive Officer of the Pharmaceuticals Division, F. Hoffmann-La Roche Ltd
- **Andrew von Eschenbach (U.S.)**
  Former Commissioner of the U.S. Food and Drug Administration
- **Victor Halberstadt (Netherlands)**
  Professor, Leiden University
- **Andre Hoffmann (Switzerland)**
  Vice Chairman, Roche Holding Ltd.
- **Franz B. Humer (Switzerland)**
  Former Chairman, Diageo plc
  Former Chairman, Roche Holding Ltd.
- **Robert A. Ingram (U.S.)**
  Former Vice Chairman of Pharmaceuticals, GlaxoSmithKline plc
- **Arnold J. Levine (U.S.)**
  Professor Emeritus at the Institute for Advanced Study, Princeton University
  Discoverer of the p53 cancer suppressor protein
- **Abraham D. Sofaer (U.S.)**
  Senior Fellow at the Hoover Institution, Stanford University
  Former legal advisor to the U.S. Department of State
- **Sonosuke Kadonaga (Japan)**
  President, Intrinsics

System for Remuneration of Directors and Audit & Supervisory Board Members

	Fixed Regular Compensation	Performance-based Remuneration		
	Regular Compensation	Bonuses	Long-term Incentive (Stock-based Compensation)	
			Tenure-based Restricted Stock	Performance-based Restricted Stock
Executive Directors	●	●	●	●
Non-executive Directors (including Outside Directors)	●	—	—	—
Audit & Supervisory Board Members	●	—	—	—



In order to further clarify the link between remuneration and the Company's business performance and shareholder value, and to raise directors' ambition and motivate them to improve performance, remuneration of executive directors consists of bonuses paid according to performance in each fiscal year and restricted stock compensation linked to mid- and long-term performance (tenure-based and performance-based) as a long-term incentive to continuously increase corporate value, in addition to fixed regular compensation. These three components are paid by resolution of the Board of Directors based on the Company's criteria within the limits on remuneration approved by the General Meeting of Shareholders. The Compensation Committee sets policies and deliberates details concerning remuneration of directors with specific titles to ensure the objectivity and transparency of the remuneration-setting process.

Remuneration of non-executive directors and Audit & Supervisory Board members (including outside members) consists solely of fixed regular compensation, and is paid by resolution of the Board of Directors for non-executive directors and through consultation with the Audit & Supervisory Board for Audit & Supervisory Board members. The amounts are set within the limits approved by the General Meeting of Shareholders.

A resolution was passed in the 98th Annual General Meeting of Shareholders held in March 2009 to abolish the retirement benefits system for directors. A resolution was passed in the 95th Annual General Meeting of Shareholders held in March 2006 to abolish the retirement benefits system for outside directors and Audit & Supervisory Board members (including outside members).

Amount of Remuneration Paid to Directors and Audit & Supervisory Board Members (2017)

Position	Total Remuneration, etc. (Millions of yen)	Total Amount by Type of Remuneration, etc. (Millions of yen)						Number of Eligible Officers
		Regular Remuneration	Bonuses	Restricted Stock Compensation		Stock Options		
				Tenure-based	Performance-based	Common	Stock-based Compensation	
Directors (Excluding Outside Directors)	765	288	234	92	35	83	34	5
Outside Directors	45	45	—	—	—	—	—	4
Total	811	567		127		83	34	9
Audit & Supervisory Board Members (Excluding Outside Audit & Supervisory Board Members)	63	63	—	—	—	—	—	3
Outside Audit & Supervisory Board Members	22	22	—	—	—	—	—	2
Total	85	85		—		—	—	5

1. The table above includes two directors and one Audit & Supervisory Board member who retired during the fiscal year under review.
2. The amount of remuneration, etc. (regular remuneration and bonuses) paid to all directors was not more than ¥750 million per year as per the resolution passed in the 96th Annual General Meeting of Shareholders for the year ended December 31, 2006 held in March 2007.
   Apart from this, the maximum amount of compensation paid to directors (excluding non-executive directors and including outside directors) in the form of restricted stock compensation (tenure-based and performance-based) was not more than ¥345 million per year as per the resolution passed at the 106th Annual General Meeting of Shareholders for the year ended December 31, 2016 held in March 2017.
3. The amount of remuneration for all Audit & Supervisory Board members was not more than ¥100 million per year as per the resolution passed at the 95th Annual General Meeting of Shareholders for the year ended December 31, 2005 held in March 2006.
4. The amounts of bonuses shown in the table above are the amount of provision for reserve for bonuses to directors for the fiscal year under review.
5. The amounts of "restricted stock compensation (tenure-based and performance-based)" shown in the table above are the amounts that were posted as expenses for the fiscal year as each respective restricted stock compensation.
6. No new stock options have been granted in the fiscal year under review but the amount granted in the previous fiscal year that was posted as expenses in the current fiscal year is shown in Stock Options above.
7. A resolution was passed at the 98th Annual General Meeting of Shareholders for the year ended December 31, 2008 held in March 2009, to abolish the retirement benefits system for executive directors, and to pay retirement benefits corresponding to their residual term up to the abolishment of the system to each concerned director remaining in office after the closing of the 98th Annual General Meeting of Shareholders for the year ended December 31, 2008, at the respective time of their retirement.
8. Apart from the ¥191 million in provision for reserve for bonuses to directors noted in the Business Report for the previous fiscal year as bonuses for directors for the previous fiscal year, ¥23 million was paid to five directors (excluding non-executive directors and including outside directors) during the current fiscal year.

Amount of Remuneration Paid to Representative Directors (2017)

Name	Total Consolidated Remuneration, etc. by Type (Millions of yen)						Total Consolidated Remuneration, etc. (Millions of yen)
	Regular Remuneration	Bonuses	Restricted Stock Compensation		Stock Options		
			Tenure-based	Performance-based	Common	Stock-based Compensation	
Osamu Nagayama	125	298	47	18	37	16	542
Motoo Ueno	58	26	19	7	14	6	129
Tatsuro Kosaka	61	33	17	6	14	7	138

1. Amounts are rounded to the nearest million yen.
2. Other than the representative directors in the table above, no director or Audit & Supervisory Board member received total remuneration of more than ¥100 million.

At the 106th Annual General Meeting of Shareholders held on March 23, 2017, a resolution was passed to newly introduce restricted stock in place of the current stock options for executive directors of the Company. The aggregate amount of such compensation shall not exceed ¥345 million on top of the aforementioned fixed regular compensation and bonuses. (For details of director remuneration, please refer to pages 39-41 of the "Notice of Convocation of the 107th Annual General Meeting of Shareholders for the Business Term Ended December 31, 2017.")

Internal Control System and Risk Management That Form the Basis of Corporate Management

On May 18, 2006, the Company approved the Board of Directors' resolutions concerning the Internal Control System as its basic policies in maintaining systems for ensuring appropriate business operations. The status of implementation of the Internal Control System is reported regularly at Board of Directors meetings, and any necessary revisions are made in a timely manner to maintain effective internal controls.

Chugai views risk management as a key issue pertaining to the Company's core operations. Chugai has established Risk Management Regulations based on its Risk Management Policy to prevent the materialization of risks that could affect the Company's business activities, as well as to ensure prompt and appropriate handling of problems that arise. We have also established a Risk Management Committee under the Executive Committee, and Division Risk Management Committees. Division Risk Management Committees summarize and create risk maps of all the risks facing their divisions, make proactive efforts to prevent the materialization of such risks, and submit reports on the progress of those efforts to the Risk Management Committee. The Risk Management Committee identifies Group-wide risk issues that may have a material impact on management and submits a progress report to the Executive Committee concerning preventive measures. (See "Business Risks" on page 104 for details.)

Our Commitment to Corporate Ethics over Profits (Compliance)

Rooted in its belief that corporate ethics take priority over profit, Chugai places paramount importance on respect for life, and strives for fair and transparent corporate activities based on high ethical standards, along with sincere scientific initiatives.

As well as strictly complying with laws and regulations such as the Law for Ensuring the Quality, Efficacy and Safety of Drugs and Medical Devices and the voluntary Code of Practice for the industry established by the Japan Pharmaceutical Manufacturers Association (JPMA), Chugai proactively takes part in the activities of the Fair Trade Council of the Ethical Pharmaceutical Drugs Marketing Industry, the JPMA Code Compliance Committee and other organizations. In addition, by establishing its own two guidelines for transparency, Chugai works to ensure a high level of ethics, morality and transparency in its various business activities including collaboration with medical institutions and other parties and cooperation with patient groups. (For details about these transparency guidelines, see the Chugai website.)

In light of increasing societal demands for greater compliance in the pharmaceutical industry, we have strengthened compliance measures Company-wide. In addition to working to enhance compliance education in each of our training programs, we conduct compliance risk management measures in each organizational unit. Moreover, every six months the Corporate Social Responsibility Department conducts monitoring surveys regarding compliance status. They are conducted for the entire organization, including subsidiaries and affiliated companies in Japan and overseas, and the results are reported to the Compliance Committee. Each organization appoints a Compliance Manager and Compliance Officer who work to ensure thorough legal compliance in the workplace and hold corporate ethics courses twice a year, among other programs.

The BCG Hotline and internal and external Harassment Hotlines have been established to receive employee inquiries and reports concerning laws, Company rules, the Chugai Business Conduct Guidelines (BCG) and other related matters.

Enhancement of Global Compliance

In January 2017, the compliance oversight functions that were previously handled by multiple committees to comply with pharmaceutical regulations, general laws, industry standards, Company rules and healthcare compliance, were consolidated, and the Compliance Committee, a corporate management committee, was established to create an administrative system linked more directly to management. The intention of this change is to facilitate proper and appropriate judgments and actions based on the societal norms and values required of pharmaceutical companies given the diversification of businesses and their employees due to the accelerating pace of globalization. It is also aimed at properly and appropriately responding to increasingly diverse and stringent regulatory regimes, including extraterritorial application of the laws of various countries, notably the antitrust and anti-bribery laws of the United States. Compliance oversight functions (Corporate Social Responsibility Department, Quality & Regulatory Compliance Unit) were established to monitor, lead and support the compliance of the Chugai Group as a whole, including overseas subsidiaries, creating a horizontal global compliance management framework.

Board of Directors, Audit & Supervisory Board and Executive Committee Members (As of April 1, 2018)

Representative Directors

Osamu Nagayama
Representative Director & Chairman
Outside Director and Chairman of the Board of Directors of Sony Corporation

Executive Director

Motoo Ueno
Representative Director & Deputy Chairman
In charge of Corporate Social Responsibility Dept., Audit Dept.

Executive Director

Tatsuro Kosaka
Representative Director, President & CEO
Outside Director of Asahi Group Holdings, Ltd.

Executive Director

Directors

Dr. Yasuo Ikeda
Vice-Chairman of the Board of Directors, Musashi Academy of the Nezu Foundation,
Specially Appointed Professor of Waseda University,
Professor Emeritus of Keio University

Outside **Independent**

Masayuki Oku
Outside Director of Kao Corporation
Outside Director of Komatsu Ltd.
Outside Director of Panasonic Corporation
Outside Audit & Supervisory Board Member of Nankai Electric Railway Co., Ltd.
Non-Executive Director of The Bank of East Asia (China) Ltd.

Outside **Independent**

Yoichiro Ichimaru
Executive Advisor of Toyota Motor Corporation
Senior Advisor of Aioi Nissay Dowa Insurance Co., Ltd.

Outside **Independent**

Dr. Christoph Franz
Chairman of the Board of Directors, Roche Holding Ltd.

Member of the Board of Directors of Stadler Rail AG (Switzerland)

Member of the Board of Directors of Zurich Insurance Group Ltd. (Switzerland)

Daniel O'Day
CEO of Roche Pharmaceuticals, Member of the Corporate Executive Committee,

Member of the Genentech (USA) Board of Directors

Dr. Sophie Kornowski-Bonnet
Head of Roche Partnering and Member of the Roche Enlarged Corporate Executive Committee

Audit & Supervisory Board Members

Shunji Yokoyama
(Full-time)

Mamoru Togashi
(Full-time)

Hisashi Hara
Advisor, The Law Office of Nagashima Ohno & Tsunematsu

Outside Director of the Board of Nippon Paint Holdings Co., Ltd.

Outside **Independent**

Takaaki Nimura
Representative of Nimura Certified Public Accountant Office, Outside Director and Chairman of Audit Committee of Sony Corporation

Outside **Independent**

Independent Independent officer pursuant to Article 436-2 of the regulations of Tokyo Stock Exchange, Inc.

Board of Directors (As of April 1, 2018)

Osamu Nagayama

1978 Joined the Company
1985 Deputy General Manager of Development and Planning Div. and Director
1987 Director & Senior Vice President
1989 Representative Director & Deputy President
1992 Representative Director, President & CEO
2010 Outside Director and Chairman of the Board of Directors of Sony Corporation (to present)
2012 Representative Director, Chairman & CEO
2018 Representative Director & Chairman (to present)

Motoo Ueno

1984 Joined the Company
1991 General Manager of London Representative Office
1993 Director
1994 Director and General Manager of Medical Information Div.
1995 Director and General Manager of Clinical Research & Development Division
1996 Director and Deputy General Manager of Research and Development Division
1997 Director & Senior Vice President
1998 Senior Vice President
2000 Director & Senior Vice President
2002 Director & Deputy President
2003 Director & Deputy President, Vice President
2004 Representative Director & Deputy President
2006 Representative Director & President, Chugai Pharma Manufacturing Co., Ltd.
2012 Representative Director & Deputy Chairman (to present)

Tatsuro Kosaka

1976 Joined the Company
1995 Deputy President, Chugai Pharma Europe Ltd. (U.K.)
2000 General Manager of Business Strategy Planning Office
2002 Vice President & General Manager of Corporate Planning Dept.
2004 Senior Vice President & General Manager of Corporate Planning Dept.
2005 Senior Vice President & Deputy Managing Director of Sales & Marketing Group
Senior Vice President & Head of Strategic Marketing Unit
2008 Senior Vice President & Head of Lifecycle Management & Marketing Unit
2010 Director & Executive Vice President
2012 Representative Director, President & COO
2016 Outside Director of Asahi Group Holdings, Ltd. (to present)
2018 Representative Director, President & CEO (to present)

Yasuo Ikeda

1979 Director, Keio University Hospital Blood Center
1991 Professor of Internal Medicine, Keio University School of Medicine
2001 Director, Keio University Center for Integrated Medical Research
2005 Dean, Keio University School of Medicine
2009 Professor Emeritus, Keio University (to present)
Professor, Department of Life Science and Medical Bioscience of Graduate School of Advanced Science and Engineering, Waseda University
2010 Outside Director of the Company (to present)
2013 Vice-Chairman of the Board of Directors, Musashi Academy of the Nezu Foundation (to present)
2014 Specially Appointed Professor of Waseda University (to present)

Masayuki Oku

1968 Joined The Sumitomo Bank, Ltd. (SB)
1994 Director, SB
1998 Managing Director, SB
1999 Managing Director and Managing Executive Officer, SB
2001 Senior Managing Director and Senior Managing Executive Officer, SB Senior Managing Director and Senior Managing Executive Officer, Sumitomo Mitsui Banking Corporation (SMBC)
2002 Senior Managing Director, Sumitomo Mitsui Financial Group, Inc. (SMFG)
2003 Deputy President, SMBC
2005 Chairman, SMFG
President and Chief Executive Officer, SMBC
2015 Outside Director of the Company (to present)
2017 Honorary Advisor, SMFG (to present)

Yoichiro Ichimaru

1971 Joined Toyota Motor Sales Co., Ltd.
2001 Member of the Board of Directors, Toyota Motor Corporation ("TMC")
2003 Managing Executive Officer, TMC
2005 Senior Managing Director, TMC
2009 Representative Director, Executive Vice President, TMC
Corporate Auditor, Aioi Insurance Co., Ltd.
2010 Corporate Auditor, Aioi Nissay Dowa Insurance Co., Ltd.
2011 Senior Corporate Auditor, TMC
2015 Executive Advisor, TMC (to present)
Representative Director, Chairman, Aioi Nissay Dowa Insurance Co., Ltd.
2017 Director of the Company (to present)
Senior Advisor, Aioi Nissay Dowa Insurance Co., Ltd. (to present)

Christoph Franz

1990 Joined Deutsche Lufthansa AG
1994 Member of the Executive Board and CEO of Passenger Transport Division, Deutsche Bahn AG
2004 CEO, Swiss International Air Lines AG
2009 Deputy Chairman of the Executive Board, Deutsche Lufthansa AG
2011 Chairman of the Executive Board and CEO, Deutsche Lufthansa AG
2014 Chairman of the Board of Directors, Roche Holding Ltd. (to present)
2017 Director of the Company (to present)

Daniel O'Day

1987 Joined Roche Pharma USA
1995 Director Human Resources, Roche Pharma U.S.A.
1996 Director Product Marketing, Roche Pharma U.S.A.
1998 Business Unit Head, Arthritis and Respiratory, Roche Pharma Headquarters
1999 Lifecycle Leader Tamiflu, Roche Pharma Headquarters
2001 Head Corporate Planning, Nippon Roche K.K.
2003 General Manager, Roche Pharma Denmark
2006 President & CEO of Roche Molecular Diagnostics
2010 COO of Roche Diagnostics Division and Member of the Corporate Executive Committee
2012 COO of Roche Pharmaceuticals Division, Member of the Roche Corporate Executive Committee and Member of the Genentech Board of Directors
2013 Director of the Company (to present)
2016 CEO of Roche Pharmaceuticals, Member of the Roche Corporate Executive Committee and Member of the Genentech Board of Directors (to present)

Sophie Kornowski-Bonnet

1985 Abbott Diagnostic Division – Paris, France Scientific Manager
1989 Abbott Pharmaceutical Products – Chicago, U.S.A. Marketing Research Analyst
1990 Abbott Pharmaceutical Products – New York, U.S.A. Neuroscience Sales Representative
1991 Sanofi Winthrop – New York, U.S.A. Director of Strategic Marketing, Diagnostic Imaging
1994 Sanofi Winthrop – Paris, France Director of Neuroscience Business Unit
1996 Merck Sharp & Dohme Paris, France Director of Marketing Research and Strategic Planning
1997 Merck Sharp & Dohme Israel Managing Director
2000 Vice-President Arthritis and Analgesia Franchise, Merck & Co. Inc. U.S.A.
2002 Merck Sharp & Dohme Paris, France Director of Rheumatology Division
2006 Merck Sharp & Dohme Paris, France Director of Cardiovascular Division
2007 Roche Pharma, France General Manager
2012 Head of Roche Partnering, Member of the Roche Enlarged Corporate Executive Committee (to present)
Director of the Company (to present)

Members of the Executive Committee and Enlarged Executive Committee Not on the Board of Directors (As of April 1, 2018)

EC * EEC **

Shinya Unno

Executive Vice President
In charge of Human Resources Management, Human Capital Development, Legal, General Affairs and Secretarial and General Manager of Human Resources Supervisory Div., in charge of General Affairs Dept. and Secretarial Dept.

1999 Joined the Company
2005 General Manager of Corporate Planning Dept.
2006 Vice President and General Manager of Corporate Planning Dept.
2007 Vice President and Deputy General Manager of Sales Div.
2010 Senior Vice President, General Manager of Corporate Planning Supervisory Div. and General Manager of Corporate Planning Dept.
2015 Senior Vice President, in charge of General Affairs and Secretarial Dept.
2017 Executive Vice President and General Manager of Human Resources Supervisory Div., in charge of General Affairs Dept. and Secretarial Dept. (to present)

EC EEC

Dr. Yasushi Ito

Executive Vice President
In charge of Project & Lifecycle Management (R&D), Regulatory & Quality Management, Clinical Development, Drug Safety and Medical Affairs and Co-Head of Project & Lifecycle Management Unit

2004 Joined the Company; Department Manager of Development Planning Dept.
2005 Department Manager of Targeted Disease Area Dept.
2007 Department Manager of Clinical Research Planning Dept.
2009 Department Manager of Medical Science Dept. and Clinical Research Planning Dept.
Vice President and Department Manager of Clinical Development Div.
2015 Vice President and Head of Project & Lifecycle Management Unit
2016 Senior Vice President and Head of Project & Lifecycle Management Unit
2018 Executive Vice President and Co-Head of Project & Lifecycle Management Unit (to present)

EC EEC

Dr. Osamu Okuda

Executive Vice President
In charge of Project & Lifecycle Management (Marketing) and Corporate Planning and Co-Head of Project & Lifecycle Management Unit

1987 Joined the Company
2009 Department Manager and Lifecycle Leader of Lifecycle Management Dept. 2
2011 President, Roche Products (Ireland) Limited
2013 Head of Oncology Unit of Marketing & Sales Div.
2014 Vice President and Head of Oncology Unit of Marketing & Sales Div.
2015 Vice President and General Manager of Corporate Planning Dept.
2017 Senior Vice President and General Manager of Corporate Planning Dept.
2018 Executive Vice President and Co-Head of Project & Lifecycle Management Unit (to present)

EC EEC

Dr. Hisafumi Okabe

Executive Vice President
In charge of Research and Translational Clinical Research and General Manager of Translational Clinical Research Div.

1991 Joined Nippon Roche K.K.
2002 Joined the Company; Department Manager of Pharmaceutical Research Dept.
2007 Director, Forerunner Pharma Research Co., Ltd. (to present)
2009 Vice President and General Manager of Research Div. Head, C&C Research Laboratories (Korea) (to present)
2012 Director and COO, Chugai Pharmabody Research Pte. Ltd. (Singapore) (to present)
2016 Senior Vice President and General Manager of Research Div.
2018 Executive Vice President and General Manager of Translational Clinical Research Div. (to present)

EC EEC

Toshiaki Itagaki

Executive Vice President & CFO
In charge of Finance & Accounting, Corporate Communication, Information System and Purchasing and General Manager of Finance Supervisory Div., General Manager of IT Supervisory Div. and General Manager of Finance & Accounting Dept.

1983 Joined the Company
2007 Department Manager of Finance & Accounting Dept.
2010 Department Manager of Planning & Research Dept.
2012 General Manager of Marketing & Sales Planning Dept.
2015 Vice President, General Manager of Finance & Accounting Dept.
2017 Vice President, General Manager of IT Supervisory Div. and General Manager of Finance & Accounting Dept.
2018 Executive Vice President & CFO, General Manager of Finance Supervisory Div., General Manager of IT Supervisory Div. and General Manager of Finance & Accounting Dept. (to present)

EEC

Keiji Kono

Senior Vice President,in charge of External Affairs Dept. and Global Health Policy

2010 Joined the Company; Senior Advisor
Vice President and Deputy Head of Lifecycle Management Unit
Vice President, Deputy Head of Lifecycle Management & Marketing Unit and Department Manager of Lifecycle Management Dept. 2
2012 Vice President and Deputy General Manager of Marketing & Sales Div.
2013 Vice President and General Manager of IT Supervisory Div.
2015 Vice President in charge of Global Health Policy and General Manager of IT Supervisory Dept.
2017 Senior Vice President, in charge of External Affairs Dept. and Global Health Policy (to present)

EEC

Junichi Ebihara

Senior Vice President
General Manager of Legal Dept.

2014 Joined the Company as Senior Corporate Advisor
Vice President and General Manager of Legal Dept.
2017 Senior Vice President and General Manager of Legal Dept. (to present)

EEC

Dr. Yoshiaki Ohashi

Senior Vice President
Head of Quality & Regulatory Compliance Unit and General Manager of Drug Safety Div.

1988 Joined the Company
2004 Department Manager, Quality & Regulatory Compliance Dept.
2009 Department Manager, Drug Safety Coordination Dept.
2011 Global PV Head (to present), Pharmacovigilance Manager
2013 General Manager of Drug Safety Div.
2015 Vice President, Head of Quality & Regulatory Compliance Unit, General Manager of Drug Safety Div. and General Marketing Compliance Officer (to present)
2018 Senior Vice President, Head of Quality & Regulatory Compliance Unit and General Manager of Drug Safety Div. (to present)

EEC

Dr. Hiroshi Murata

Vice President
General Manager of Pharmaceutical Technology Div.

1986 Joined the Company
2008 Department Manager of CMC Regulatory Affairs Dept.
2011 Department Manager of CMC Development Dept.
2012 Manager of Fujieda Plant, Chugai Pharma Manufacturing Co., Ltd.
2016 General Manager of Pharmaceutical Technology Div.
2018 Vice President and General Manager of Pharmaceutical Technology Div. (to present)

EEC

Tsunanori Sato

Vice President
General Manager of Marketing & Sales Div.

1982 Joined the Company
2005 Department Manager of Renal Disease Area Medical Business & Science Dept.
2009 Supervisory Branch Manager of Yokohama Branch
2011 Supervisory Branch Manager of Kyoto Branch
2013 Department Manager of Primary Sales Promotion Dept.
2015 Associate Vice President and Supervisory Branch Manager of Osaka Branch
2017 Associate Vice President and Head of Kansai Regional Management Office
2018 Vice President and General Manager of Marketing & Sales Div. (to present)

* Executive Committee
** Enlarged Executive Committee

Chugai in Action

CONTENTS

Overview of Activities in 2017

Items	Main initiatives	Main performance indicators in 2017
Research	• Continuously generating first-in-class and best-in-class drugs • Creating molecular targeted drugs that contribute to personalized healthcare (PHC) • Strengthening innovative proprietary research technologies and creating innovative antibodies • Providing support and education for researchers from Asia • Maintaining high animal welfare standards in accordance with international guidelines	• In-house products in development pipeline: 13 (as of February 1, 2018) • Expanded business at Singapore subsidiary Chugai Pharmabody Research Pte. Ltd. • Academic papers and presentations at scientific conferences regarding Chugai's innovative proprietary technologies: 61 (2013-2017) • Published academic papers regarding Chugai's research findings: 97 (2013-2017)
Development	• Improving clinical development of drugs to address unmet medical need • Increasing productivity and speed of global clinical development for early market launches • Conducting simultaneous development and regulatory filing of drug therapies and diagnostics that contribute to PHC • Strengthening lifecycle management to maximize product value	• Pipeline projects: 41 (as of February 1, 2018) • New products launched and new indications: 14 (2013-2017) • PHC-based development projects: 21 (as of February 1, 2018) • Projects in-licensed from Roche: 15 (2013-2017)
Production	• Providing a stable supply of high-quality drugs and investigational drugs • Enhancing the system for faster global launches and simultaneous development of multiple products • Achieving early PoC by raising the level of CMC development • Raising the level of competitive advantages from late-stage development to initial commercial production • Achieving world-class quality control, quality assurance and regulatory functions	• Invested in facilities for faster launches and simultaneous development of multiple antibodies and small molecule drugs (established new biological API manufacturing facility at Ukima Plant (UK3), enlarged solid formulation manufacturing facility at Fujieda Plant, etc.) • Received FDA pre-approval inspection and approval for Hemlibra • Strengthened global supply chain management
Marketing	• Contributing to advances in medicine as Japan's leading oncology drug and therapeutic antibody company • Promoting standards of care, regional healthcare and PHC • Contributing to care through consulting and liaison functions • Enhancing area promotion strategy to increase marketing productivity • Conducting disease awareness and patient support activities in mainstay product areas	• Share of sales in the Japanese therapeutic antibody market: 27.3%[1] • Share of sales in the Japanese oncology market: 20.2%[1] • Share of sales in the Japanese hospital market : No. 1[1] • Satisfaction ranking based on healthcare providers' assessments: 3rd[2] • Education for MRs with a high level of expertise • Enhanced communication of safety information through use of post-marketing surveillance and adverse reaction databases and cooperation with Safety Experts
Medical Affairs	• Building a consistent global medical affairs promotion system with proper independence of roles • Strengthening systems for healthcare compliance and governance of contract-based post-marketing studies • Conducting area-based evidence creation and promoting scientific communication activities • Introducing global medical information functions	• Contract-based post-marketing studies: 25 (as of January 31, 2018) • Staff with GCP Passport (JSCTR certification): 153 (as of January 31, 2018) • Acquired third-party accreditation for MSL certification program from the Japanese Association of Pharmaceutical Medicine • Number of joint preclinical studies: 11 (as of January 31, 2018)

1. Copyright © 2018 IQVIA. Source: JPM 2017. Reprinted with permission. The scope of the market is defined by Chugai.
2. Based on a survey of overall assessments of companies by physicians in hospitals with 100 or more beds, as defined by Chugai

Environment Environmental Protection Society Providing Value to Society HR Human Resources Productivity Raising Productivity

	Examples of ESG initiatives in each division
• R&D expenditures to revenues: 16.6% • Created development projects using Chugai's Recycling Antibody®, Sweeping Antibody®, bispecific antibody and other proprietary antibody technologies • Started operation of a collaborative lab at IFReC based on an agreement with Osaka University • Conducted ongoing training on animal welfare for all research staff involved in laboratory work	Environment • Fostered employee awareness of energy saving through energy visualization • Continued joint cleanup activities with a local high school for the Shinkawa River, which flows through the Kamakura Research Laboratories site Society • Conducted activities at Kamakura Research Laboratories to raise awareness of the importance of cancer screening • As part of the Company's support for recovery from the Great East Japan Earthquake, held a charity sale at the Kamakura Research Laboratories of specialty products from the affected area
• Projects being co-developed with Roche Group: 33 (as of February 1, 2018) • Projects in response to development requests for unapproved drugs/indications: 7 (2013-2017)	HR • Fostered a corporate culture where employees can participate actively after returning from childcare or other leave • Held cross-cultural training to cultivate leaders who can succeed globally • Held study sessions with instructors from other industries to promote global success Productivity • Created a new operating model that makes greater use of the Roche system • Raised productivity and transformed mindsets by promoting improvement activities
• Enhanced next-generation core technologies for API manufacture and formulation • Strengthened development ability by reducing costs from the early stage onward and planning and implementing a dosage form strategy • Established a system for quality control functions to enhance specialization and raise operational efficiency	Environment • Reduced greenhouse gas emissions with the scheduled introduction of high-efficiency air conditioning • Promoted reduction of energy consumption through an energy visualization task force Society • Conducted firefighting activities in cooperation with local fire departments HR • Promoted "Techno" technology review activities to create new core competencies and strengthen basic technologies • Held U-MAST (at Utsunomiya Plant), UK-NEXT (at Ukima Plant) and F-OPEX (at Fujieda Plant) as initiatives to train young employees through proposal and improvement activities • Held interdivisional exchange meetings (Knowledge Cube for Marketing & Sales, Medical Affairs and Pharmaceutical Technology divisions and BRIDGE for Research, Clinical Development, Translational Clinical Research and Pharmaceutical Technology divisions) Productivity • Held Lean Activity Leader activities at the three plants, the research departments and the Quality Assurance Dept. • Conducted Bilateral actions of Business and Quality (BBQ) initiatives
• Enhanced marketing functions based on local characteristics • Patient-centric support activities for regional healthcare and multidisciplinary team care • Activities to promote appropriate use of medicines through trial service of an app that supports adherence to medication by facilitating smooth communication between patients and their healthcare providers	Environment • Introduced eco-friendly cars in MR fleet • Promoted paperless operations in areas such as meeting materials Society • Promoted proper use of medicines through support for improvements in the rate and accuracy of testing • Participated in Lung Cancer Awareness and attended to patient requests regarding drugs • Promoted disease awareness through cooperation with businesses in other industries • Held the Bone and Joint Forum nine times during the year as a measure against locomotive syndrome • Produced and disseminated videos for disease awareness and promotion of adherence to treatment • Disseminated information on a new issue related to cancer treatment (cancer patient dementia) through the Company website • Produced "A Day in the Life of a Primary Care Pharmacist," a video to promote wider recognition of primary care pharmacists • Promoted disease awareness via FM radio HR • Held Innovation Club meetings to discuss cross-divisional proposals
• Inquiries to the Medical Information Department: 57,488 (including telephone, e-mail and fax inquiries) • Product Research Department: Published research papers: 26 (2017-2018) Presentations at scientific conferences: 18 overseas, 24 in Japan (2017-2018) Academic conference awards: 2 in Japan (2017-2018)	HR • Conducted a training program from the standpoint of training global medical human resources Productivity • Established a global collaboration team to promote visualization of operations at overseas subsidiaries

Items	Main initiatives	Main performance indicators in 2017
Drug Safety	• Strengthening pharmacovigilance system to meet the world's strictest standards and most comprehensive global regulations • Providing solutions to patients and healthcare professionals using drug safety information • Preparing and implementing risk management plans (RMPs)	• Cases for which safety information was collected from Japan and overseas according to global standards for clinical trials and post-marketing studies: 136,151 (January - December 2017) • Increased capacity for generating safety information using advanced technologies such as epidemiology and information technology, and established the new specialist position of Safety Expert for handling safety information (April 2017)
Intellectual Property	• Protecting and effectively using rights for broadly applicable innovative technologies • Filing high-quality patent applications and effectively allocating resources • Aggressively filing patent applications outside Japan with a view to global co-development	• Patents held (including pending applications): 4,219 • New patents granted worldwide: 188 • Defended the market for Oxarol Ointment with a patent-infringement lawsuit against manufacturers of generics

Items	Main initiatives	Main performance indicators in 2017
Environment, Health and Safety	• Promoting global warming countermeasures, resource conservation and waste reduction • Thoroughly managing chemical substances • Disclosing environmental information • Enhancing environmental awareness and making environment-related contributions to local communities • Creating safe, comfortable workplaces	• Energy consumption per employee compared with 2010: -16.6% (Chugai Group in Japan) • Recycling ratio in 2017: 76.4% (Chugai Group in Japan) • Final disposal ratio in 2017: 0.8% (Chugai Group in Japan) • Ratio of eco-friendly cars: 78.1%
Social Contribution	• Creating an inclusive society through support for para-sports • Nurturing the next generation who will carry science and technology forward • Supporting employee volunteer activities • Contributing to communities where Chugai Group facilities and sites are located	• Conducted awareness-raising and support activities for para-sports (served as title sponsor of a wheelchair softball tournament, provided training facilities, and operated a booth for experiencing wheelchair tennis and chair skiing) • Donation of welfare vehicles to provide transportation for home welfare services: Total of 248 vehicles over 33 years (1 vehicle each to 5 organizations in 2017) • Cumulative number of countries receiving free therapeutic drugs for treating lymphangiomas: more than 80 (program in its 27th year)
Corporate Communication	• Proactively disclosing information and promotion of IR activities for institutional investors, security analysts, individual investors and other stakeholders in Japan and overseas • Building good relationships with media outlets and disseminating information appropriately and in a timely manner (media relations) • Promoting global communications to enhance global dissemination of information and to improve the crisis preparedness of the Chugai Group • Building and establishing the corporate brand	• Information events for the media and institutional investors: 16 • Security analysts and institutional investors in Japan and overseas with whom individual meetings were held: 436 (cumulative total) • Briefings for individual investors and shareholders: 8 • Plant tours for shareholders and the media: 2 • Attendees at General Meeting of Shareholders: 534 • Global press releases: 14
Corporate Governance	• Prompt decision-making, clarification of executive responsibilities and management transparency • Enhancing decision-making by introducing outside perspectives • Maintaining an internal control system • Promoting compliance with the Pharmaceuticals and Medical Devices Law, fair competition codes, promotion codes, and other laws and regulations	• Board of Directors meetings: 9 (average attendance rate of outside directors 100%) • Auditing system: 4 Audit & Supervisory Board members (including 2 outside members)
Human Resources	• Fostering human resources who are competent in the global arena • Building work environments in which diverse people can succeed • Building sound labor-management relations • Fostering high ethical standards through training on the Chugai Business Conduct Guidelines (Chugai BCG); making continuous efforts to build human rights awareness	• Implemented leader development program, all-employee program, division programs and Self-Innovation Program (SIP) • Number of employees posted through the Roche Human Resource Exchange Program: 164 (2004-2017) • Percentage of female managers:[3] 12.5% • Percentage of employees using the telecommuting system:[4] Male 13.0%, Female 29.7% • Percentage of employees taking childcare leave: Male 52.0%, Female 98.8%

3. Number of female managers as a percentage of the total number of managers in the Company (non-consolidated)
4. Percentage of eligible employees who used the system

Environment Environmental Protection Society Providing Value to Society HR Human Resources Productivity Raising Productivity

	Examples of ESG initiatives in each division
• RMPs prepared and carried out for thorough risk management: 12 products (as of February 2018) • Papers and conference presentations on safety based on the results of post-marketing surveillance: 20 (2017)	Environment • Promoted paperless operations for stored materials and meeting materials Society • Held awareness-raising activities for the media to disseminate accurate medical information • Provided the latest drug safety information through lectures for healthcare providers • Contributed to the enhancement of Japan's epidemiological database Productivity • Used information and communications technology (ICT) to construct a system for timely provision of the safety information doctors need • Cut back on processes and paper use through the introduction of an image sharing system • Outsourced the management of post-marketing surveillance and individual adverse drug reaction data
• Operated a system for monitoring other companies' patents • Enhanced cooperation with the Pharmaceutical Technology Division in ways such as expanding the scope of meetings to review intellectual property	Environment • Formulated a paperless scheme for internal management of applications for public disclosure approval HR • Implemented measures to facilitate direct communication with overseas law firms for patent applications outside Japan Productivity • Confirmed the effectiveness of concentrating overseas agents to reduce costs

	Items described in detail on website (As of March 31, 2018)
• Certified as a White 500 company • Occupational accident incidence rate: 1.52 (No. of occupational accidents resulting in illness, injury or death / No. of hours actually worked x 1,000,000) • Occupational accident severity rate: 0.006 (No. of workdays lost / No. of hours actually worked x 1,000)	Environmental Protection, Safety and Health/Mid-Term Environmental Goals/Safety and Health Activities/Climate Change Countermeasures/Chemical Substance Management/Waste and Recycling/ Prevention of Air, Water and Soil Pollution/ Education, Communication and Environmental Accounting/ Performance Data
• Number of locations in which Chugai employees participated in the 24-hour charity event Relay For Life Japan: 29 • Biology lab classes for children at the Japan Science Foundation's Science Museum: 110 participants in 12 labs • Endowed courses at Waseda University: 2 • Number of employees who took volunteer leave: 48 • Participated in Pink Ribbon activities	Relay for Life Japan/NPO Shuhei Ogita Fund Supporting Patients with Lymphatic Malformations/ Chugai's Social Contribution Activities/Efforts for Society (Japanese Only) Support for Para-Sports (Japanese only)
• Branding campaign (TV commercials and newspaper advertisements) • Won Grand Prize at 19th Nikkei Annual Report Awards • Won 3rd Prize at 2017 Excellence in Corporate Disclosure Selection in the pharmaceuticals category • Won Prize for Best Work in the cosmetics/pharmaceuticals/fashion/ daily commodities category at the 85th Mainichi Advertisement Design Competition held by the Mainichi Newspapers Co., Ltd.	Shareholder Information/Shareholder Meetings/Shareholder Returns/Financial Results/Message to Individual Investors (Japanese only)/Chugai Brand Story/Videos & Advertisements
• Convened the Chugai International Council (CIC) • Number of Compliance Committee meetings: 4 • Number of Corporate Social Responsibility Committee meetings: 2	Basic Corporate Governance Policy/Corporate Governance Report/The Resolutions concerning the Internal Control System by the Board of Directors/Relationship with Roche/Chugai's Transparency Guidelines/Emergency Response
• Percentage of employees with disabilities: 2.17% • BCG and human rights training attendees: 13,856 (includes repeat attendees; Chugai Group in Japan) • Conducted compliance surveys for employees in Japan and overseas: 6,595 participants (6,131 in Japan, 464 outside Japan) • Selected as a Nadeshiko Brand in March 2018 by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange • Selected as one of the New Diversity Management Selection 100 companies in March 2018 by the Ministry of Economy, Trade and Industry	Business Conduct Guidelines/Talent Management According to Each Person's Capabilities and Aptitude/Personnel Systems That Help Our Diverse People to Succeed/Creating Supportive Work Environments/Putting the Chugai BCG into Practice at a Personal Level/Diversity and Inclusion Initiatives/Diversity and Inclusion Promotion System/Initiatives to Promote the Success of Diverse Employees/Facilitating Work-Life Balance/Performance Data Related to Diversity and Inclusion

Research

Initiatives and Performance in 2017

13
In-house products in pipeline
(As of February 1, 2018)

61
Academic papers and presentations at scientific conferences regarding Chugai's innovative proprietary technologies
(2013-2017)

97
Published academic papers regarding Chugai's research findings
(2013-2017)

Features of Our Research Functions

Chugai began conducting research and development of biopharmaceuticals more than 30 years ago, and the former Nippon Roche had also established world-class technology for the discovery of chemically synthesized agents. Over the years, we have cultivated knowledge and gained experience through our own pioneering initiatives while also incorporating outside technologies. As a result, we have continuously evolved our technologies, and have built a technology platform that we can flexibly and appropriately apply to drug discovery.

We are using this platform to generate a steady stream of innovative new drugs with first-in-class or best-in-class potential to address unmet medical need. In addition to developing antibody engineering technologies ahead of other companies, Chugai has industry-leading research and technological capabilities backed by small and middle molecule[1] technologies, the world-class research infrastructure of the Roche Group and a powerful external network with academia and other parties. Through presentations of research findings at scientific conferences and other means, these strengths lead to benefits for the medical community around the world, as well as the creation of in-house projects.

1. Middle molecules have significant potential because they are capable of inhibiting protein-protein interaction (PPI) in intercellular molecules, which is difficult to achieve with antibodies and small molecules.

Allocation of Research Resources

In allocating research resources, we prioritize each project based on the following criteria:

- The project's potential for development as a novel medicine that can be clearly differentiated
- Whether it has a scientific basis for addressing unmet medical need
- Whether it will enable personalized healthcare (PHC)

At various decision points during research, we focus first and foremost on patient need, reflecting our belief that creating medicines truly needed by patients and healthcare providers will lead to Chugai's medium-to-long-term growth.

Recent Research Activities

In 2017, PHC-based projects represented 51 percent of our total pipeline, including projects in-licensed from Roche.

We have also achieved significant results in development of proprietary antibody engineering technologies.[2] In May 2014, we licensed these technologies to Roche, including the Recycling Antibody®, which extends a therapeutic antibody's duration of efficacy, the Sweeping Antibody®, which can eliminate disease-causing antigens from plasma, and the bispecific antibody. In November 2017, Hemlibra obtained approval in the United States for the treatment of hemophilia A. This was the first approval for a project in which our proprietary antibody engineering technologies were applied. We have also filed applications in Europe and Japan, and are aiming to obtain approval in both markets in 2018.[3]

In April 2017, a collaborative lab began operating under our comprehensive agreement with Osaka University Immunology Frontier Research Center (IFReC). Immunity is involved not only in diseases of the immune system itself, but also in cancer and various other diseases, and immune-mediated therapies are now becoming mainstream cancer treatments.

Combining the global top-class research in immunology at IFReC and Chugai's expertise in drug discovery research, accumulated through its proprietary technologies, is expected to result in the creation of innovative new drugs.

Research at satellite labs has also yielded solid results, leading to the successful establishment of stable cell lines of colon cancer stem cells in October 2012. In addition, URC102, a small molecule compound discovered at C&C Research Laboratories in South Korea, has advanced into clinical development, and new drug targets have also been identified at Forerunner Pharma Research Co., Ltd. Moreover, Chugai Pharmabody Research Pte. Ltd. (CPR), which we established in Singapore in 2012, is making steady progress in research focusing on discovery of new therapeutic antibodies. SKY59, a project that originated at CPR, also entered clinical development in 2016.

2. For details on Chugai's proprietary antibody engineering technologies, see our website. (https://www.chugai-pharm.co.jp/english/profile/rd/index.html).

3. Approved in Europe in February 2018

Progress of Development Projects

(January 1, 2017 – February 1, 2018)

	Number of Projects	Breakdown		
		New Molecular Entities	Additional Indications	Additional Dosage and Administration/ Formulations
Approved	13	4	6	3
Filed	8	5	3	0
Started phase III	9	6	3	0
Started phase II	1	1	0	0
Started phase I	5	5	0	0
Development suspended	3	—	—	—

Bioethics in R&D

To ensure that research using human-derived test material is carried out appropriately, Chugai has established Ethical Guidelines for Research That Uses Human-Derived Test Material and a Research Ethics Committee. More than half of the members of this committee are from outside the Company,

enabling fair evaluations from a pluralistic frame of reference. Moreover, we strive to ensure that research is conducted with respect for human rights by offering guidance to our researchers on the necessary ethical knowledge and standards required when conducting research on human-derived test material, including the Declaration of Helsinki and protection of personal information.

Our View of Animal Welfare

When handling laboratory animals used in research, Chugai acts in accordance with the Guidelines for the Care and Use of Laboratory Animals it has established to respect their lives from the standpoint of animal welfare, and to minimize their pain, keeping in mind the scientific conditions.

Based on the principles of the 3Rs (Replacement, Reduction and Refinement), the Institutional Animal Care and Use Committee has added an examiner from outside the Company to assess the validity of research using laboratory animals from a more objective viewpoint and to make appropriate improvements to reflect changes in the social environment and scientific progress. At the same time, an institutional qualification program was adopted for researchers and animal handlers to cultivate concern for animal welfare through education and training. These measures were positively evaluated by AAALAC International,[4] a global independent evaluation organization, and Chugai has maintained full accreditation since 2007.

4. Association for Assessment and Accreditation of Laboratory Animal Care International, a private nonprofit organization that promotes the humane treatment of animals in scientific research through voluntary inspection and accreditation programs. More than 900 facilities in 39 countries have been accredited.

Drug Discovery Modalities

In the pharmaceutical industry, modality refers to the material classification of drugs such as therapeutic antibodies or therapeutic nucleic acids. Until the 1990s, small molecule drugs were virtually the only modality available, but modality options are now increasing. Chugai is currently focusing on establishing middle molecules as a third modality in addition to biologics and small molecules, in which it is already strong.

Comparison of Drug Discovery Modalities

	Small molecules	Middle molecules	Biologics
Molecular weight	Below 500	500 - 2,000	10,000 and above
Target specificity	Fair	High	High
Intracellular targets	Wide range	Numerous	Limited
PPI inhibition	Fair	Good	Good
Administration route	Oral/Injection	Oral/Injection	Injection
Manufacturing method	Organic synthesis	Organic synthesis	Cell culture

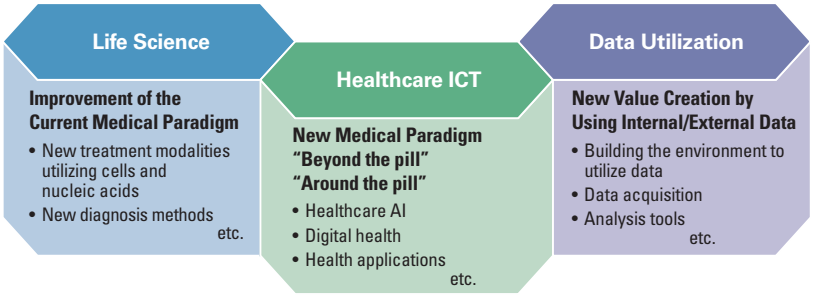
Considering a Future of Healthcare That Is Shaped by the Fusion of Science and Technology

Rapid scientific and technological advances, especially in life science and information and communications technology (ICT), are bringing dramatic changes to society and the pharmaceutical industry. Chugai's Science and Technology Intelligence (STI) Department was established in April 2017 as an intelligence unit to consider Chugai's response to emerging issues in the healthcare business.

Healthcare in the future is expected to center on PHC, which provides optimal solutions tailored to individual patients, and in addition to diagnosis and treatment, which are the focus of the current model, greater value will need to be provided in areas such as prevention and prognosis. Our goal is to contribute to higher-quality healthcare with solutions that lead to new value, and a critical part of that effort is formulating strategies for disruptive innovation,* which will be essential for realizing such solutions.

STI's mission is to find promising leads for pursuing disruptive innovation, and to create strategies for bringing it about. STI will perform radar, hub and intelligence functions in cooperation with internal cross-functional teams of experts in the three areas of life science, healthcare ICT, and data utilization. A number of projects have already begun.

Scope of STI



Concrete results have yet to emerge, but we will focus on this new initiative to generate innovation ahead of other companies.

* Innovation that disrupts the order of existing business and causes drastic changes in the industry structure.

Proprietary Technologies

Drug discovery technologies, largely antibody engineering technologies, are Chugai's core competence. We are focused on development of proprietary technologies that are necessary for addressing areas of unmet medical need. Their application leads to the generation of innovative and competitive medicines.

Chugai's research and development operations have used our groundbreaking advances in research techniques to develop a series of technologies that overturned conventional wisdom about antibody engineering. Examples include the development of our Sweeping Antibody®, Recycling Antibody® and bispecific antibody technologies. In addition to antibody engineering and small molecules, we have selected drug discovery technologies for middle molecules as a candidate for our next-generation core technology. We intend to concentrate investments in this area to establish this new technology and quickly generate new projects.

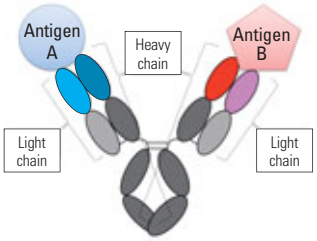
ERY974 and Use of Bispecific Antibody Technology

Unlike normal antibodies, a bispecific antibody can bind simultaneously to two different target molecules. Due to their complex structure, it was extremely difficult to manufacture bispecific antibodies with high levels of purity and efficiency. However, commercial production became possible with Chugai's proprietary ART-Ig* technology. Not only do bispecific antibodies provide the effect of two agents in one, but flexible approaches to applying their special features will make them key in creating previously unachievable new therapies to address unmet medical need.

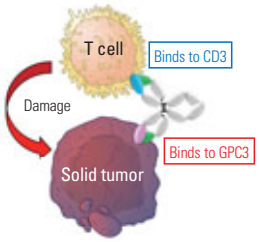
ERY974, an anti-tumor agent currently undergoing an overseas phase I clinical study, is the second project from Chugai research to apply ART-Ig bispecific antibody technology following Hemlibra, which received approval in the United States and in Europe as a treatment for hemophilia A with inhibitors for blood coagulation factor VIII. ERY974 is a T-cell redirecting antibody (TRAB). By simultaneously binding to specific proteins expressed on T cells, which are immunocytes, and on cancer cells, TRAB is expected to direct T cells to cancer cells and also activate T cells, specifically damaging neighboring cancer cells. Compared with immune-cell therapy displaying the same mechanism of action, TRAB does not require removal of T cells from the patient's body for treatment, and thus is expected to offer an advantage as a therapeutic antibody that can be provided uniformly and stably at a lower cost.

* For details on Chugai's proprietary antibody engineering technologies, see our website. (https://www.chugai-pharm.co.jp/english/profile/rd/technologies.html).

Bispecific Antibody



ERY974 Mechanism of Action

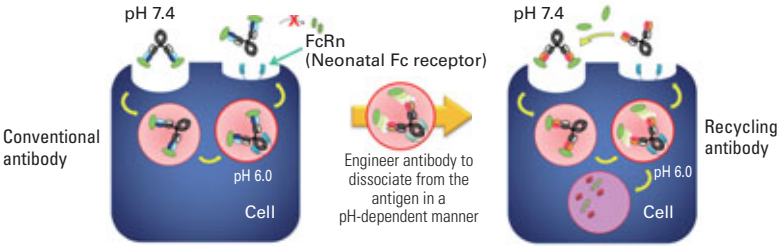


SKY59 and Application of Recycling Antibody® Technology

Chugai's proprietary Recycling Antibody® is an antibody engineering technology that enables efficacy to be maintained for a longer duration than that of conventional antibodies due to improved pharmacokinetics and a prolonged half-life. Normally, an antibody remains bound to an antigen, but a Recycling Antibody® is designed to bind to antigens multiple times. Because it has been engineered to be pH-dependent, the antibody separates from the antigen in the cell and only the antibody is recycled to plasma. The use of Recycling Antibody® technology is expected to produce an effect at an extended dosing interval and low dosage. This technology was first applied to satralizumab (SA237), which is in a phase III multinational study as a potential treatment for neuromyelitis optica, and prolonged plasma half-life has been demonstrated in clinical trials.

SKY59 is the second project to apply Recycling Antibody® technology. It targets the C5 complement component, and a phase I/II multinational study as a potential treatment for paroxysmal nocturnal hemoglobinuria is under way. It was the first project to move into clinical development among those created and developed from the early stages by Chugai Pharmabody Research Pte. Ltd., which was established in 2012. Although C5 complement is highly present in plasma, Recycling Antibody® technology makes it possible to use fewer antibodies to capture C5 molecules compared with conventional antibodies. The therapeutic antibody currently in use is administered as a continuous intravenous infusion, which requires regular hospital visits. Offering a self-injectable formulation for subcutaneous administration with reduced dosing frequency is expected to improve patient quality of life. Focusing on this benefit, Chugai and Roche began joint development from an early stage.

Effect of Recycling Antibody® against Soluble Antigen in Plasma



- Antibody can bind to the antigen only once
- Antigen persists as an antibody bound form, accumulating in plasma

- Antibody can bind to the antigen multiple times
- Prevents antigen accumulation by discarding the antigen within the cell

Development

Initiatives and Performance in 2017

41	14	21	15
Pipeline projects (As of February 1, 2018)	New products launched and new indications (2013-2017)	PHC-based development projects (As of February 1, 2018)	Products in-licensed from Roche (2013-2017)

Our Development Functions

To bring innovative pharmaceuticals to patients as quickly as possible, Chugai has established a lifecycle management* system for project-level integrated management of research, regulatory affairs, drug safety, manufacturing and other functions, and cooperates with numerous medical institutions and clinical research centers. In this way, we work to implement clinical trials distinguished by exceptional speed, efficiency and scientific rigor.

Specifically, in clinical development, we draw up clinical development plans based on the latest scientific findings and invite medical institutions to conduct clinical trials. In manufacturing, we examine commercial production that will turn candidate compounds into pharmaceutical products and manufacture investigational drugs for clinical trials. In drug safety, we ensure a high level of safety in clinical trials by gaining an understanding and beginning assessments of each drug's safety profile from the early stages.

To promote global development, in April 2018 Chugai integrated the clinical study management functions of the Translational Clinical Research (TCR), Clinical Development and the Medical Affairs divisions into the Clinical Development Division. Through this new configuration, Chugai will enhance cooperation among its operations in Japan, the United States and Europe, deepen cooperation with Roche, including the promotion of the rapid development of Chugai products, and build a flexible framework for formulating and conducting clinical studies.

Through our alliance with the Roche Group, we are implementing multiple global development projects (multinational studies) and strengthening the process to enable simultaneous development of drugs and companion diagnostics suitable for personalized healthcare (PHC). Through these initiatives, we are creating best practices in development and filing for approval in Japan, which may contribute to the advancement of the industry.

* The various measures taken to maximize the potential value of a drug, including shortening development time, expanding sales, extending the product's life, and conducting appropriate cost control. Competitiveness can be strengthened further by using earnings from sales of established drugs to strategically reinvest in new drug development, marketing or other areas.

Our Translational Clinical Research Functions

The TCR Division was established in 2015 to specialize in early clinical development and bolster its functions with the aim of rapidly acquiring proof of concept (PoC) for development projects from in-house research, and quickly move them into global development. TCR is Chugai's first global division in charge of TCR functions in Japan, the United States and Europe.

For promising products from Chugai research, Chugai uses the screening functions of its U.S. subsidiary Chugai Pharma USA to conduct thorough disease target identification from the exploratory research stage in order to set the direction for development. We are thus concentrating on the development plans most likely to maximize the value of in-house projects and obtain early PoC.

As measures to enhance the functions of TCR, in clinical pharmacology we are working diligently to improve the accuracy of clinical pharmacokinetics and prediction of clinical efficacy, and also to discover biomarkers for confirming efficacy and selecting appropriate patients. In 2017, we deepened exchanges with members in research and early clinical development at Roche and Genentech to promote common platforms and more efficient use of resources for clinical pharmacology in the Roche Group.

Results and Overview of Development Activities

Of the 41 projects currently in Chugai's pipeline, 13 originated from Chugai research, and half are based on PHC (as of February 1, 2018). In 2017, all projects made steady progress. Chugai filed for regulatory approval for eight projects, and obtained approval for 13 projects. Chugai's pipeline grew even richer, with five new projects in-licensed from Roche advancing to the clinical phase.

Projected Submissions (Post-PoC NMEs and Products)

	NME[1]	Additional Indication
In-house	■	□
In-licensed	■	□

2017	2018		2019	2020 and beyond		
Filed	**Avastin** (RG435) RCC[2]			**Tecentriq** (RG7446) Ovarian cancer	**polatuzumab vedotin** (RG7596) DLBCL[6]	**nemolizumab** (CIM331)[7] Pruritus in dialysis Patients
Hemlibra (ACE910/RG6013) Hemophilia A (inhibitor) (Japan, E.U.)	**Tecentriq** (RG7446) Breast cancer	**Hemlibra** (ACE910/RG6013) Hemophilia A (non-inhibitor)	**satralizumab** (SA237/RG6168) Neuromyelitis optica	**Tecentriq** (RG7446) RCC (adjuvant)	**ipatasertib** (RG7440) Breast cancer	**lebrikizumab** (RG3637) IPF[8]
Perjeta (RG1273) Breast cancer (adjuvant)	**Tecentriq** (RG7446) RCC	**Actemra** (MRA) Systemic sclerosis	**Suvenyl** (NRD101) Knee osteoarthritis/ Shoulder periarthritis (China)	**Tecentriq** (RG7446) MIUC[5] (adjuvant)	**ipatasertib** (RG7440) Prostate cancer	**RG6206** Duchenne muscular dystrophy
obinutuzumab (GA101/RG7159) Follicular lymphoma	**Tecentriq** (RG7446) NSCLC[3] (1L)	**Edirol** (ED-71) Osteoporosis (China)	**Tecentriq** (RG7446) SCLC[4]	**Tecentriq** (RG7446) Urothelial carcinoma	**Kadcyla** (RG3502) Breast cancer (adjuvant)	**crenezumab** (RG7412) Alzheimer's disease
				Tecentriq (RG7446) NSCLC (adjuvant)	**Tecentriq** (RG7446) Prostate cancer	**gantenerumab** (RG1450) Alzheimer's disease

1. New molecular entity 2. Renal cell carcinoma 3. Non-small cell lung cancer 4. Small cell lung cancer 5. Muscle invasive urothelial carcinoma
6. Diffuse large B-cell lymphoma 7. Under development for the indication of atopic dermatitis by licensees [Galderma S.A. (overseas) and Maruho Co., Ltd. (Japan)]
8. Idiopathic pulmonary fibrosis

Production

Initiatives and Performance in 2017

Invested in facilities to handle multiple antibody development projects simultaneously

(For details on capital investments, see "Capital Investments" on page 102.)

Created and started operation of a world-class system for pharmaceutical quality management

69

Published research papers from the Pharmaceutical Technology Division (2013-2017)

Our Production Functions

Our production functions play a wide range of roles in the pharmaceutical value chain – from turning drug candidates into products to stably supplying them. These candidates may be compounds created in our laboratories or projects in-licensed from Roche or elsewhere. Product creation includes research on commercialization of the biological and small molecule active pharmaceutical ingredients (APIs) used as active ingredients, the design and study of commercialization of formulations and packaging for the products that will ultimately be used by patients, and the summarizing of data collected during the manufacturing and development of investigational drugs used in clinical trials in order to prepare application materials.

Through product creation, Chugai works to provide previously unavailable pharmaceuticals to patients as quickly as possible.

However, our production functions do not stop at simply creating products. They are responsible for maintaining the trust of patients and healthcare providers by ensuring a stable supply of all products – a duty central to Chugai's existence as a pharmaceutical manufacturer. That is why we need to build and maintain both manufacturing capabilities that reliably generate high-quality products and a robust supply chain that connects manufacturing sites and markets inside and outside Japan, including with Roche.

Chugai already has competencies at Japan's top level in several respects, including bioproduction technology and the ability to accommodate inspections. We will leverage our strengths as a member of the Roche Group to continue working to become a top pharmaceutical company with more powerful functions for product creation and stable supply.

Reliable Distribution of Pharmaceuticals and Stable Procurement

In addition to the three Chugai Group plants in Utsunomiya, Ukima and Fujieda, Japan, we have production bases (including contract manufacturing organizations) in various regions around the world. We have also created a rigorous quality control system in line with global standards, including compliance with GMP.*

Raw material procurement is key in providing a stable and continuous supply of high-quality pharmaceuticals to healthcare providers and patients. However, the stable procurement of raw materials is constantly exposed to risks such as discontinued production due to the merger or closing of suppliers, spikes in prices or problems with availability due to fluctuations in the balance of supply and demand, or delays in delivery caused by accidents at suppliers. To minimize these risks and maintain a stable supply of raw materials, we promote the globalization of our suppliers of raw materials and intermediate products in tandem with the globalization of our production bases for finished products. Our production functions ensure shipping quality between bases, and we adopt various risk countermeasures such as increasing the number of locations that produce essential products, based on our experience from the Great East Japan Earthquake. Through these and other measures to strengthen supply chain management as it becomes increasingly complex and global, we are working to maintain and improve the reliability of distribution in Japan and overseas.

Our subsidiary Chugai Distribution Co., Ltd. handles distribution of pharmaceuticals in Japan. The company's computerized inventory management and inspection ensure stable and safe distribution, and the staff employs original methods for the careful packaging of products to enable easy sorting and prevent damage when recipients open the cartons.

* Good Manufacturing Practice: Standards for pharmaceutical production management and quality control

Quality Assurance Approach and System

Chugai always puts the patient first as it strives to provide high-quality products and services that offer outstanding safety and efficacy. To this end, our quality assurance operations work to improve product quality by cooperating closely with manufacturing sites, including Roche's.

Quality assurance functions have diversified in recent years in response to the increasing complexity of the product supply process and the acceleration of development with the introduction of the fast-track review system to support the early launch of innovative new drugs. Quality requirements are becoming increasingly stringent with Japan's accession to the Pharmaceutical Inspection Convention and the Pharmaceutical Inspection Co-operation Scheme (PIC/S) in July 2014 and the start of implementation of the international Pharmaceutical Quality System guideline.

In view of these trends, Chugai conducts consistent GMP throughout the product lifecycle from development to manufacturing, and is working to further strengthen oversight of GMP management to promote more rigorous and high-level quality assurance. As part of these efforts, Chugai has created and operates a world-class system for pharmaceutical quality management.

Overview of Production Bases

Plant	Features	Products Manufactured
Utsunomiya Plant (Tochigi Prefecture)	One of Japan's largest facilities for cultivating biological active pharmaceutical ingredients (APIs) and a state-of-the-art production line for injectable formulations	Biological APIs: Actemra APIs Injectable formulations: Actemra, Epogin and others
Ukima Plant (Tokyo)	Manufactures and packages solid and injectable formulations and biological APIs. Production base for investigational biologics.	Biological APIs: Epogin APIs and others Injectable formulations: Oxarol and others
Fujieda Plant (Shizuoka Prefecture)	Integrated production system from API synthesis to formulation and packaging. Production base for investigational API synthesis.	API synthesis: Edirol APIs and others Solid formulations: Edirol, Tarceva, Xeloda and others

Marketing

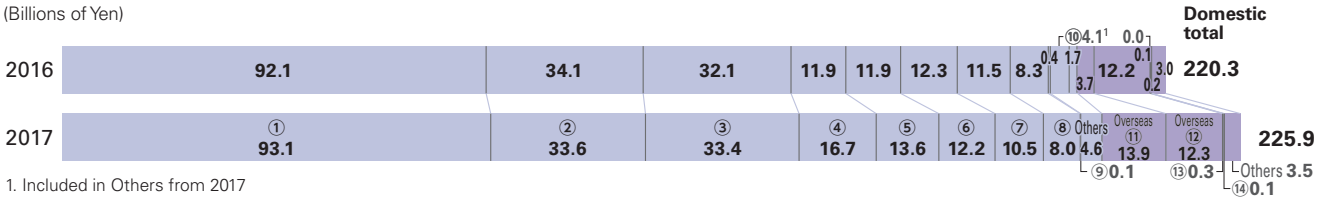
Initiatives and Performance in 2017

27.3%[1]	20.2%[1]	No. 1[2]	36
Share of sales in the Japanese therapeutic antibody market (2017)	Share of sales in the Japanese oncology market (2017)	Satisfaction ranking for Actemra in the RA market[2] (2017)	Number of branch offices in the new area-based system for providing solutions (As of April 2017)

1. Copyright © 2018 IQVIA. Source: JPM 2017. Reprinted with permission. The scope of the market is defined by Chugai.
2. Based on survey of overall assessments of MRs by physicians selected according to terms defined by Chugai.

Oncology

Sales
(Billions of Yen)



1. Included in Others from 2017

① Avastin	Launch in Japan: Jun. 2007
② Herceptin	Launch in Japan: Jun. 2001
③ Rituxan	Launch in Japan: Sep. 2001
④⑪ Alecensa	Launch in Japan: Sep. 2014
⑤ Perjeta	Launch in Japan: Sep. 2013
⑥ Xeloda	Launch in Japan: Jun. 2003
⑦ Tarceva	Launch in Japan: Dec. 2007
⑧ Kadcyla	Launch in Japan: Apr. 2014
⑨ Zelboraf	Launch in Japan: Feb. 2015
⑩⑫ Neutrogin	Launch in Japan: Dec. 1991
⑬ Akynzeo	Launch in U.K.: Sep. 2015 Launch in Ireland: Dec. 2015
⑭ Aloxi	Launch in U.K.: Jan. 2015

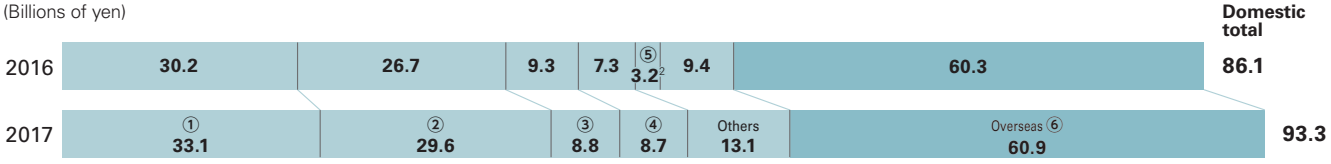
Review of 2017 Performance and 2018 Outlook

In 2017, sales in the oncology area in Japan increased ¥5.6 billion, or 2.5 percent, year on year to ¥225.9 billion. Sales of new product Alecensa continued to grow substantially with an increase in use as a first-line treatment and a high rate of adherence. With the advent of the new therapeutic category of cancer immunotherapy, the position of Avastin in treatment is changing, and it is maintaining a level of sales as a mainstay drug in the area of oncology. Perjeta and Rituxan also contributed to sales growth. Sales of Alecensa outside Japan including exports to Roche increased a substantial ¥10.2 billion, or 276 percent, to ¥13.9 billion, supported by regulatory approval in Europe and centered on the United States, where Alecensa's use is expanding as a second-line treatment.

In 2018, sales are expected to decrease significantly due to the scheduled return of the premiums for new drug creation for Herceptin and Rituxan, among other factors. On the other hand, we forecast growth from further uptake of Alecensa as a first-line treatment, as well as from the photodynamic diagnostic agent Alaglio, which is a new product, and Tecentriq, an anti-PD-L1 monoclonal antibody that obtained approval in January 2018. We aim to maintain Avastin's position as a treatment for multiple types of cancer.

Bone and Joint Diseases

Sales
(Billions of yen)



2. Included in Others from 2017

①⑥ Actemra	Launch in Japan: Jun. 2005
② Edirol	Launch in Japan: Apr. 2011
③ Suvenyl	Launch in Japan: Aug. 2000
④ Bonviva	Launch in Japan: Aug. 2013
⑤ Alfarol	Launch in Japan: Jan. 1981

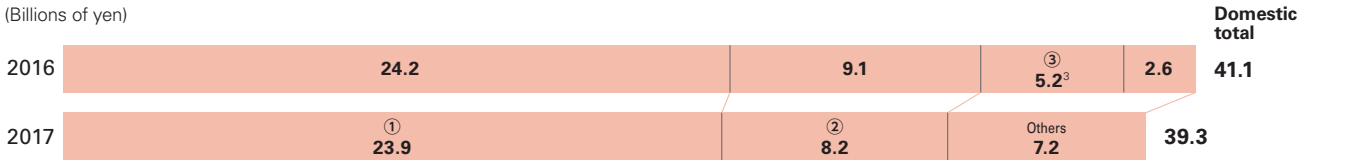
Review of 2017 Performance and 2018 Outlook

In 2017, sales in the bone and joint diseases area in Japan increased ¥7.2 billion, or 8.4 percent, year on year to ¥93.3 billion. In addition to growth from uptake of Actemra as a first-line biologic, sales growth continued for Edirol, which has been recognized as a base treatment for osteoporosis, and for Bonviva, which was launched in an oral formulation in April 2016 in addition to the intravenous formulation. Sales of Actemra outside Japan including exports to Roche increased ¥0.6 billion, or 1.0 percent, to ¥60.9 billion as firm global sales by Roche compensated for the negative effect of exchange rates.

In 2018, we expect continued firm sales of treatments for rheumatoid arthritis (RA) and osteoporosis in Japan. Outside Japan, we expect double-digit growth or higher in sales of Actemra, mainly due to further uptake of the subcutaneous formulation for RA and sales for giant cell arteritis, which became an additional indication in 2017.

Renal Diseases

Sales
(Billions of yen)



3. Included in Others from 2017

① Mircera	Launch in Japan: Jul. 2011
② Oxarol	Launch in Japan: Sep. 2000
③ Epogin	Launch in Japan: Apr. 1990

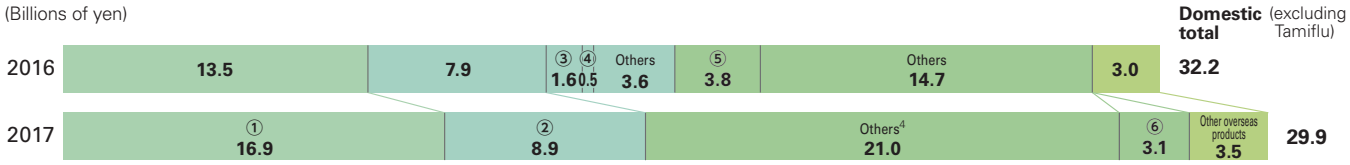
Review of 2017 Performance and 2018 Outlook

Sales in the renal diseases area in Japan in 2017 decreased ¥1.8 billion, or 4.4 percent, year on year to ¥39.3 billion. Mircera, which only needs to be administered once every four weeks, has established a reputation in the pre-dialysis segment for convenience and long duration of action, and use is expanding. However, sales decreased slightly due to competition including biosimilars. Sales of Oxarol decreased partly due to the impact of generics.

In 2018, we aim to maintain and improve the market presence of Mircera and Oxarol in the pre-dialysis and dialysis stages through ongoing patient-centric activities rooted in our high level of expertise in the area of renal diseases.

Others

Sales
(Billions of yen)



4. Data for transplant, immunology and infectious diseases is included in Others from 2017.

① Tamiflu	Launch in Japan: Feb. 2001
② CellCept	Launch in Japan: Nov. 1999
③ Copegus	Launch in Japan: Mar. 2007
④ Pegasys	Launch in Japan: Dec. 2003
⑤ Sigmart	Launch in Japan: Apr. 1984
⑥ Hemlibra	Launch in U.S.: Nov. 2017

Review of 2017 Performance and 2018 Outlook

In the influenza segment, where Chugai plays an important role as a provider of Tamiflu, we focus on providing information on the product's safety and effectiveness, including prevention of the disease, based on extensive clinical data accumulated over a long period. Sales of Tamiflu, including sales for government stockpiles, increased ¥3.4 billion, or 25.2 percent, year on year to ¥16.9 billion. Sales of CellCept, an immunosuppressant, increased ¥1.0 billion, or 12.7 percent, to ¥8.9 billion due to increases in prescriptions accompanying kidney transplants and in use in treating lupus nephritis, a refractory disease for which it received approval in May 2016.

In 2018, we intend to continue proactively providing information on Tamiflu, centered on a wide range of facilities, by advancing e-promotion and cooperation with wholesalers. For CellCept, we will maintain our presence in the transplant segment and expect uptake for lupus nephritis.

Medical Affairs

Initiatives and Performance in 2017

25
Contract-based post-marketing studies (including 17 in accordance with ICH-GCP guidelines)
(As of January 31, 2018)

153
Staff with GCP Passport (JSCTR certification)
(As of January 31, 2018)

Acquired third-party accreditation for MSL certification program from the Japanese Association of Pharmaceutical Medicine

11
Number of joint preclinical studies
(As of January 31, 2018)

Our Medical Affairs Functions

In addition to creating a steady flow of innovative drugs, Chugai recognizes the importance of ensuring that the value of its products is delivered accurately to patients, which will lead to better treatment. We have been focusing on generating scientific data in support of this objective and supplying appropriate information to healthcare providers.

Moreover, we maintain global-level compliance standards, including funding transparency and the separation of marketing and medical affairs[1]. At the same time, we are working to further enhance our internal systems to help raise the quality and scientific level of clinical and preclinical (basic) research and to deal with changes in our operating environment.

Strengthening Medical Affairs Functions and Initiatives

Since 2012, Chugai has unified functions for medical affairs and promotion of preclinical studies by setting up the Medical Affairs Division to establish the independence of all functions related to medical science. Medical staff was also dispatched to each area to set up a framework for consistent promotion of medical affairs throughout the Company. The Medical Affairs Division was then restructured to strengthen organizational governance and compliance in these unified activities.

Concurrently, we began operation of a scheme for contract-based post-marketing studies (see the column at right for details) to guarantee the independence and transparency of research. We promptly set up a structure for responding to Ethical Guidelines on Medical Research Involving Human Subjects, which were enforced from April 2015. At the same time, to raise the quality and reliability of research, we established a research support structure that conforms to the GCP[2] guidelines of the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH). Moreover, we are building an organization to support global post-marketing studies based on these structures. We are also preparing an implementation and support system for post-marketing studies under the Clinical Research Act that is scheduled to come into force in Japan in 2018. Furthermore, the Medical Information Department we established in 2016 responds to customer inquiries in a consistent fashion with appropriate information based on the latest science through collaboration with Roche and our overseas subsidiaries.

In 2017, Chugai acquired third-party accreditation[3] for its medical science liaison (MSL) certification program from the Japanese Association of Pharmaceutical Medicine. This accreditation means that the various activities of our MSLs in the area of medical affairs have been evaluated by an external institution. In the future, along with elucidation of the causes of diseases and pathological conditions, progress is expected in establishing preventive and treatment methods based on individual genetic, environmental and lifestyle differences. We will respond promptly to this changing environment by enhancing our intelligence functions, such as using ICT and other means to obtain medical information and gain insights from its analysis, in order to focus on generating new data with higher scientific value and other activities that provide solutions. By disseminating appropriate information in ways such as these, we will contribute to patient-centric medical research in Japan.

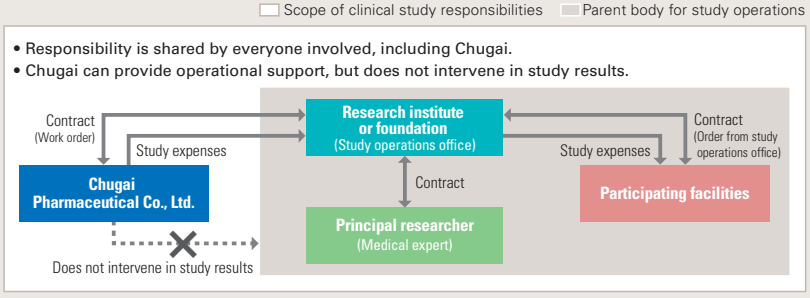
1. Activities that contribute to healthcare from a scientific standpoint
2. Good Clinical Practice: Standards for conducting pharmaceutical clinical trials
3. Composed of evaluation criteria (a total of 222 items in 42 categories) from the three perspectives of independence from promotional activities (compliance system), medical and scientific expertise, and the training system. In the accreditation examination, mail-in and on-site surveys of the evaluation criteria are conducted to evaluate whether the MSL certification program at the applicant company is being properly implemented.

Contract-Based Post-Marketing Studies

Raising transparency and addressing conflicts of interest in post-marketing studies have become key issues, reflecting society's growing interest in drug development after launch and scandals at pharmaceutical companies since 2013. Chugai has been operating its own post-marketing study scheme since 2012 under the name "contract-based post-marketing studies" to guarantee the independence and transparency of research. In our post-marketing studies, we ensure clear disclosure of research-related payments, relationships, conflicts of interest and other relevant matters. The data generated by these post-marketing studies have been highly evaluated at international conferences and has also been published in global guidelines.

We will continue working to validate new clinical data and disseminate even better information solutions to healthcare providers as we contribute to raising the level of clinical studies in Japan.

Chugai's Contract-Based Post-Marketing Study Framework



Drug Safety

Initiatives and Performance in 2017

136,151
Cases for which safety information was collected in clinical trials and post-marketing studies globally
(January-December 2017)

12 products
RMPs prepared and carried out for thorough risk management
(As of February 2018)

20
Papers and conference presentations on safety
(2017)

Our Drug Safety Functions

In Japan and overseas, Chugai handles numerous biopharmaceuticals, molecular targeted therapies and other pharmaceuticals with innovative modes of action. To promote the appropriate use of these pharmaceuticals around the world and gain acceptance from patients and healthcare providers, Chugai establishes pharmacovigilance protocols with Roche and its other partners and collects safety information on a global level. Expert safety evaluation is also essential, and we consider speedy decision-making crucial for timely provision of safety information and implementation of measures to ensure safety. Consequently, Chugai has established an independent Drug Safety Division and a system directly linked to management. Through measures such as these, Chugai is building greater credibility, with the aim of providing truly valuable safety data and contributing to patients and healthcare worldwide.

Measures to Enhance Drug Safety

Promoting Safety Evaluation and Appropriate Use

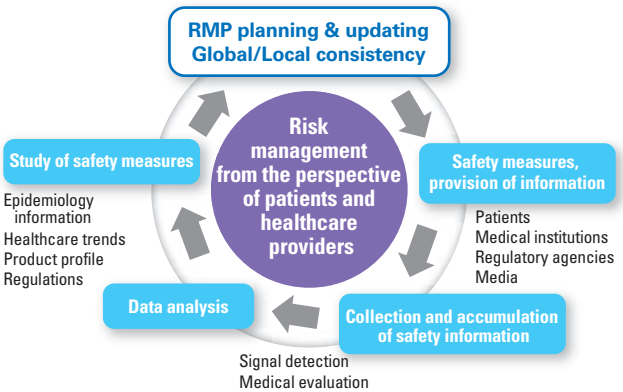
Post-marketing surveillance, which includes all-case registration surveillance, is conducted under actual treatment conditions to collect safety information unobtainable in clinical trials. In post-marketing surveillance, data on safety are collected from medical institutions through electronic systems. Information on the results obtained from analysis of this data is provided to medical institutions and announced via scientific conferences, papers and other means.

Numerous anticancer agents, innovative new biopharmaceuticals and other drugs require wider-ranging and more rigorous management, such as thorough management of distribution and confirmation of conditions of use, in addition to all-case registration, in which all patients administered a product are registered. In addition to rigorous safety measures, Chugai has been conducting all-case registration surveillance ahead of other companies, for Avastin, Actemra, Alecensa and other products. With this extensive experience, we lead the industry in drug safety evaluation and safety measures.

Leading the Industry through Risk Management Plans

As pharmacovigilance activities and discussions have picked up worldwide in recent years, Chugai has established a world-class safety management system that can accommodate the pharmaceutical regulatory systems and review procedures of regulatory agencies in Japan, the United States and Europe. Moreover, to establish a plan – do – check – act (PDCA) cycle for our post-marketing pharmacovigilance activities and measures to ensure safety, we collect and analyze information consistently from the preclinical and clinical stages, and have drawn up and applied risk management plans (RMPs) to several of our products since 2012, ahead of our competitors. We consider RMPs to be part of our commitment to patients and healthcare providers.

Organization Oriented to Risk Management



Safety Evaluation and Communication

Chugai is committed to highly transparent and speedy reporting and release of drug safety information. We collect a large volume of safety information from countries around the world and evaluate it from a medical standpoint. We have established a system for recording the information in a database and conducting signal detection of adverse drug reactions using that database. With this system, we promptly consult with regulatory authorities in each country regarding safety measures. In addition to this large volume of safety information, we have in-house medical doctors with abundant clinical experience who also conduct expert safety evaluations.

To provide diversified and sophisticated solutions, we restructured our organization in April 2017 to enhance communication with customers and increase our capacity to generate safety information using advanced technologies such as epidemiology and information technology. In applying RMPs, we believe we need to strengthen our ability to analyze data from an epidemiological standpoint. To achieve this, a specialized internal group in charge of epidemiology functions is cooperating with specialized companies and others to help upgrade Japan's epidemiological database. We are also driving the industry in ways such as proactively working to formulate industry-wide recommendations and guidance for database research.

For communications with customers, we provide information on noteworthy adverse drug reactions to medical institutions and academic societies. We also distribute information leaflets for patients to medical institutions, post information on our website, hold presentations for pharmacists and conduct media seminars. In April 2017, we also established the new specialist position of Safety Expert for handling safety information to engage in more detailed communication tailored to the needs of each customer and the healthcare characteristics of each region. We will continue to enhance delivery of information using ICT-based tools to help healthcare providers better navigate patient treatments, thus helping to steadily reduce the incidence and severity of adverse drug reactions.

Intellectual Property

Initiatives and Performance in 2017

4,219
Number of patents held (including pending applications)
(As of December 31, 2017)

188
New patents granted worldwide
(2017)

Defended the market for Oxarol Ointment with a patent-infringement lawsuit against manufacturers of generics*

Implementation of Our IP Strategy

Chugai views its global intellectual property (IP) strategy as the foundation for creating innovative new drugs. By integrating it with our business and R&D strategies, we protect the competitive advantage of our products and ensure operational flexibility. We focus resources on and secure IP rights for high-priority R&D projects. At the same time, we actively work to secure rights outside Japan with a view to global co-development with the Roche Group. When we apply for patents for products, we include filings for our inventions related to formulation, production method, diagnostic method and personalized healthcare in addition to those for the substance and use. We also work to establish rights globally for significant drug discovery technologies such as innovative antibody technologies, and use those rights in planning and executing our IP strategy. In addition, we are building our own database for patents related to antibody engineering technologies, which are becoming increasingly complex and sophisticated, and are using this database to plan IP strategies, including monitoring trends at other companies.

Our IP Strategy

One feature of our IP strategy is that we take full advantage of our benefits as a member of the Roche Group. For inventions originating at Chugai, we take responsibility for planning and execution of matters such as application strategies for individual products, selection of countries where applications will be filed, and strategies for acquisition of rights in Japan and overseas. In addition, we endeavor to choose our best options globally by coordinating closely within the Roche Group, including with Genentech, at all times.

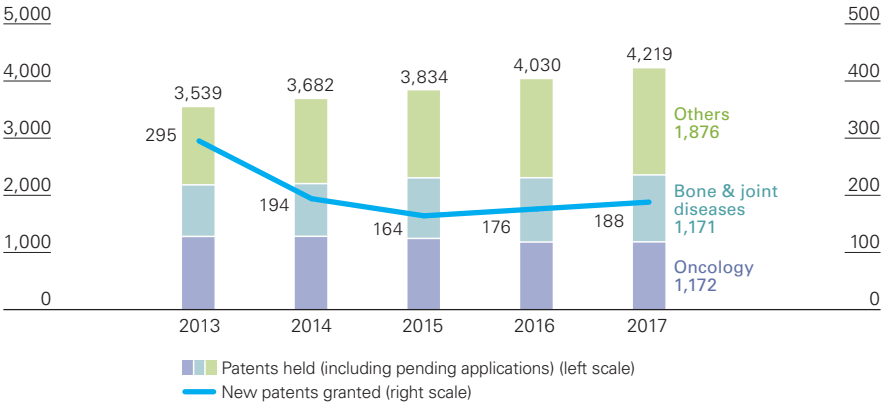
Another feature is our strategic use of antibody-related technology patents. Antibody engineering technologies are an important part of our R&D strategy, and we actively conduct research and development both to cultivate our basic technologies and to apply them to product development. Under our IP strategy, we have created a framework for the strategic use of our antibody-related technology patents by building a database of antibody sequences developed by third parties, and by monitoring the status of antibodies (relevant to our patents) being developed at competitors. In this way, we aim to secure a competitive advantage in the market.

Current Patent Portfolio

By therapeutic area, oncology accounts for the largest share of our patent portfolio with approximately 29 percent of the total, a proportion that reflects our product portfolio. In 2017, Chugai acquired 188 patents in Japan, the United States and major European countries, as well as other countries worldwide. These include patents protecting SKY59 and other Chugai development compounds and products, as well as SMART-Ig®, our innovative antibody technology.

* On March 24, the Supreme Court of Japan rendered a judgment dismissing the appeal by generic drug manufacturers against Chugai's lawsuit in which it sought injunction against those companies based on infringement of the process patent on Oxarol Ointment, thereby making Chugai's victory in the lawsuit final.

Number of Patents Held (Including Pending Applications) and New Patents Granted



Dispatch of IP Liaison Staff

Ensuring operational flexibility for innovative drugs created from our own research and development projects requires integration of our IP and research strategies to introduce research resources into the white spaces (gaps) in other companies' rights and to establish our own rights in those spaces. At the same time, the intensifying competitive environment is increasing the importance of repositioning, which involves reconsidering strategies depending on changes in circumstances both internally, such as the progress of research, and externally, such as the publication of applications by other companies. With these conditions in mind, we completed a personnel deployment plan to dispatch IP liaisons to the Fuji Gotemba and Kamakura Research Laboratories in order to defend our rights in our targeted disease areas. We will continue to create more innovative products through collaboration between our research and IP functions, using our IP liaisons as a hub.

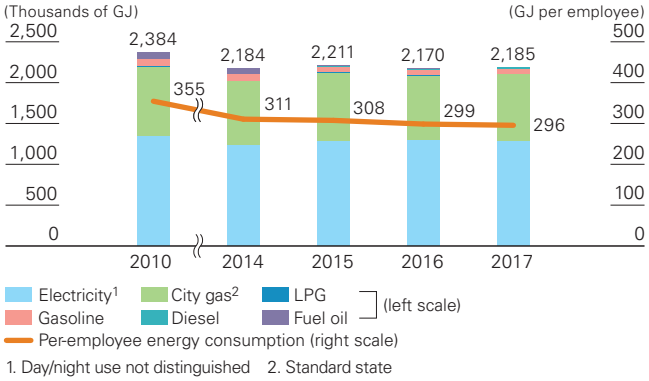
Environmental, Health and Safety Data

Climate Change Countermeasures

(2010 is the base year for per-employee energy consumption and CO_2 emission mid-term environmental goals.)

Total and Per-Employee Energy Consumption

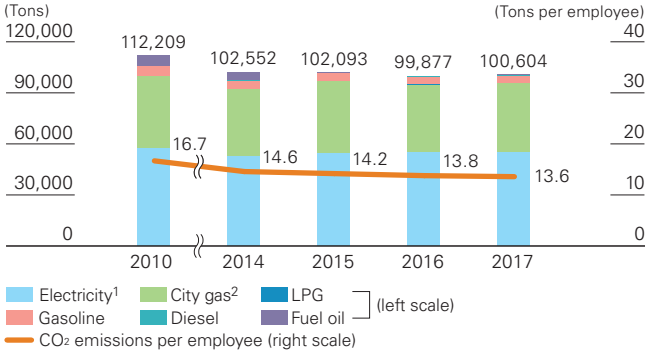
Total energy consumption was 2,185,000 gigajoules, an increase of 15,000 gigajoules from 2016. Energy consumption per employee decreased 3 gigajoules.



1. Day/night use not distinguished 2. Standard state

CO_2 Emissions and CO_2 Emissions per Employee

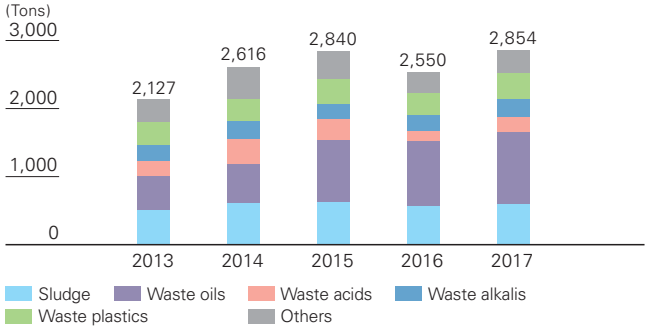
Total CO_2 emissions were 100,604 tons, an increase of 728 tons from 2016. CO_2 emissions per employee decreased 0.2 tons.



Resource Saving and Waste Reduction

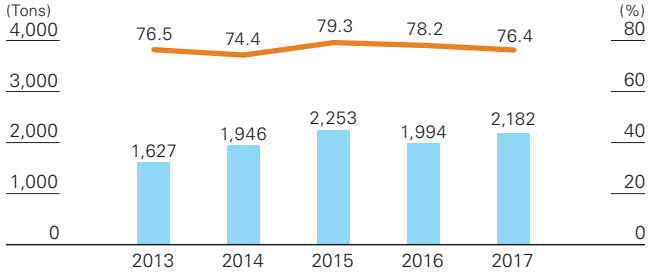
Industrial Waste

The amount of industrial waste generated was 2,854 tons, an increase of 12 percent from 2016. This is mainly attributable to a combined increase of 221 tons in waste oils, waste acids and waste alkalis due to higher production volume.



Waste Recycled and Recycling Ratio3

The recycling ratio was 76.4 percent, a decrease of 1.8 percentage points from 2016. This is mainly attributable to an increase in non-recyclable waste materials that accompanied the increase in waste generated.

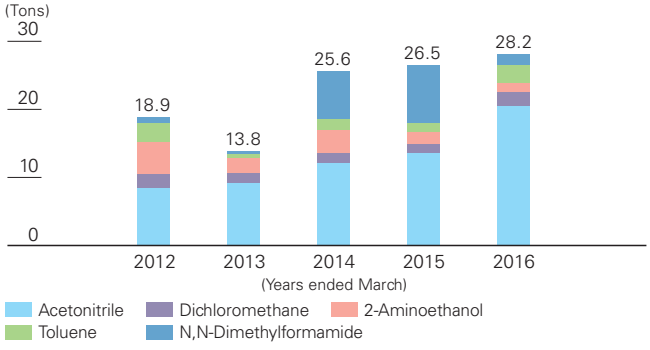


3. Amount of waste recycled / Amount of waste generated

Chemical Substance Management

Handled Amounts of Chemical Substances Covered by PRTR Law

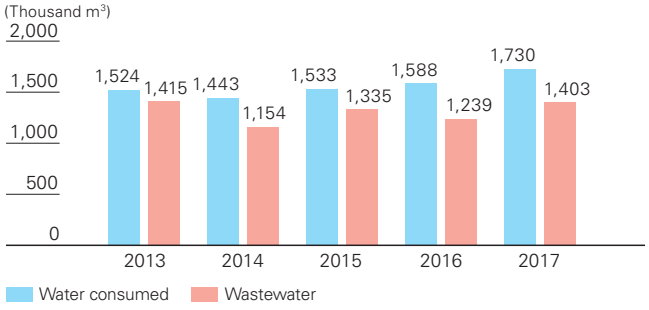
The handled amounts of chemical substances covered by the PRTR Law totaled 28.2 tons, an increase of 1.7 tons from the year ended March 31, 2016. The main factor was a 6.9-ton increase in acetonitrile handled, despite a decrease of 7.0 tons in N,N-Dimethyformamide from the year ended March 31, 2016.



Water and Air Pollution Countermeasures

Water Consumed and Wastewater

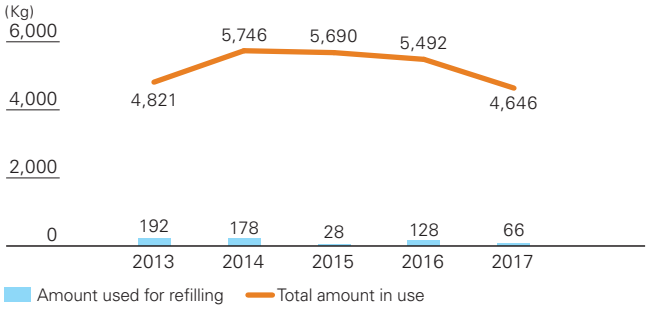
Water consumed increased 142 thousand tons from 2016 due to the increase in production.



Units of energy for electricity are calculated using the coefficients in the Enforcement Regulations for the Act on the Rational Use of Energy, and the electricity emission factor is calculated using the 2005 Electricity Emission Factor for Receiving Electricity announced by the Federation of Electric Power Companies of Japan. Since 2016, the unit of energy and emission factor for each type of energy use the coefficients listed in the Enforcement Regulations of the Act on Promotion of Global Warming Countermeasures (amended March 3, 2010). For city gas consumption, the standard state conversion value is used.

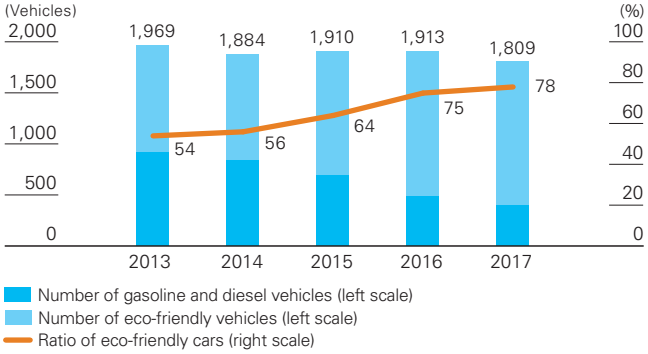
CFCs and HCFCs Used to Fill Equipment

The amount of CFCs and HCFCs used was 4,646 kg, a decrease of 846 kg (15.4 percent) from 2016. Chugai is making efforts to phase out use of CFCs and HCFCs.



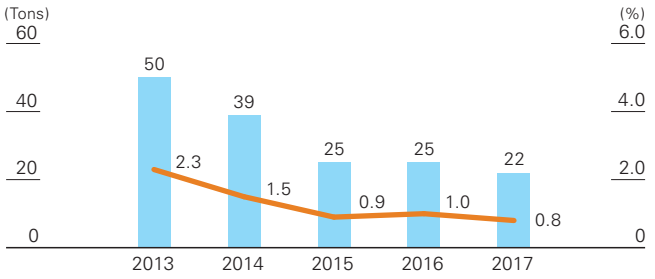
Ratio of Eco-Friendly Cars

As of December 31, 2017, Chugai had introduced a cumulative total of 1,413 hybrid and fuel-efficient vehicles in its MR fleet. The ratio of eco-friendly cars was 78 percent, remaining above the target of 50 percent.



Industrial Landfill Waste and Final Disposal Ratio[4]

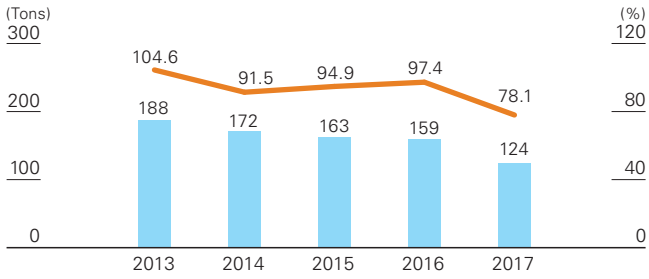
The final disposal ratio was 0.8 percent, a decrease of 0.2 percentage points from 2016. We have maintained this ratio below 2 percent since 2014.



4. Amount of industrial landfill waste / Amount of waste generated

PPC Paper Purchased

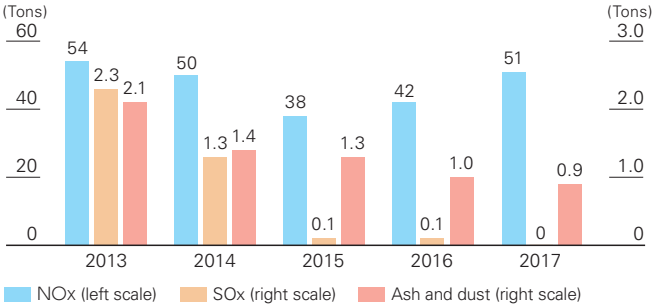
The amount of plain paper copier (PPC) paper purchased decreased 22.9 percent compared with 2016. Factors in the decrease include reduction in the amount of printed handouts for meetings and control of printing on multifunction printers. We also continued to purchase PPC paper that is compliant with Japan's Green Purchasing Law.



Health and Safety Management

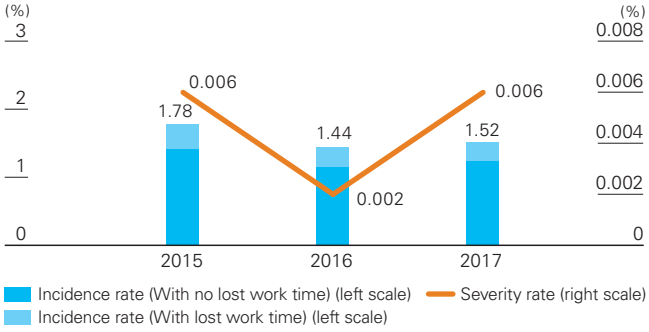
NOx, SOx and Ash and Dust Emissions

NOx emissions increased 9 tons from 2016, but were below the prescribed environmental limits at all sites. SOx, ash and dust emissions are trending downward as a result of the conversion of the main fuel in heat source equipment to city gas from Bunker A fuel oil.



Occupational Accident Incidence and Severity Rates

The incidence rate is the number of occupational accidents, defined as workplace incidents resulting in illness, injury or death, per million hours worked, and indicates the frequency of such incidents. The severity rate is the number of workdays lost per 1,000 hours worked, and indicates the severity of occupational accidents.



Social Contribution

Initiatives and Performance in 2017

Promoted awareness of para-sports

1 vehicle each to 5 organizations
Donation of welfare vehicles to provide transportation for home welfare services
(2017)

29
Number of locations in which Chugai employees participated in the 24-hour charity event Relay For Life Japan
(2017)

Joined global initiative Access Accelerated
(2017)

Basic Approach

As a responsible pharmaceutical company in healthcare, we proactively engage in activities such as raising awareness of diseases and disseminating pharmaceuticals in developing countries.

In the area of welfare, in conjunction with our business activities in the renal and bone and joint areas, we conduct ongoing donations of specially equipped paratransit vehicles as we understand the importance of transportation assistance services for people who require in-home nursing care. We also support para-sports to create a society where everyone can be active through sports. Regarding education, as a company that deals with leading-edge science we conduct activities to raise awareness of science and medicine among students, from elementary school children to university students, as well as among adults. Moreover, we cooperate with local communities and engage in disaster preparedness education, mainly in areas where our research laboratories and plants are located.

Disease Awareness

Chugai participates in and co-sponsors a variety of activities to support cancer patients and their families. One such activity is Relay For Life Japan, an awareness support campaign that forges ties in the fight against cancer. This event, a 24-hour walk-a-thon in which cancer patients, their families and supporters compete as relay teams, was held in 49 locations throughout Japan in 2017. Chugai employees have participated as volunteers in Relay For Life Japan since 2007. A total of 490 employees took part as "Team Chugai" at 29 locations in 2017. For its disease awareness activities, Chugai used augmented reality (AR) to present "Go into the Stomach! – Search for the Seven Secrets," in which a total of 1,499 people took part at 23 locations. While Team Chugai members provided explanations, participants learned about matters related to stomach cancer that appeared on the screen and deepened their understanding of the importance of early detection and treatment.

Participation in Lung Cancer Awareness

Lung Cancer Awareness is a committee established by the Japan Lung Cancer Society in November 2014 to share accurate information among patients and their families, promote lung cancer prevention and improve the results of diagnosis and treatment. Chugai markets three lung cancer agents – Avastin, Tarceva and Alecensa – and considers it important that patients and healthcare providers fully understand the information necessary for their proper use. By endorsing and actively participating in the committee's activities, we are working to provide information that patients and healthcare providers need.

Promotion of Measures against Locomotive Syndrome

Locomotive syndrome is a condition in which muscles, bones, joints, cartilage, intervertebral discs and other parts of the musculoskeletal system become impaired and motor function declines. The progression of the syndrome is highly likely to impede daily life. The Japanese Orthopaedic Association proposed it as a concept in 2007 and has been working to prevent the syndrome, establish measures for coping with it, and improve awareness. In cooperation with the prefectural chapters of the Japanese Clinical Orthopaedic Association, Chugai holds the Bone and Joint Forum about 10 times a year to deliver the latest information to healthcare providers. We will continue helping to promote healthy life expectancy through this activity.

Support for Para-Sports

Chugai co-sponsors the Japanese Para-Sports Association (JPSA) as an official partner, and cooperates in activities to help realize the JPSA's philosophy of "creating a vital and inclusive society." The main activities Chugai conducted in 2017 are as follows.

Dispatch of volunteers to competitive sports events

Chugai held the Chugai Pharmaceutical 2017 Wheelchair Softball Tournament in Tokyo as the title sponsor and provided support by sending 23 employee volunteers to assist with set-up, event management, English interpreting and other matters.

Activities to raise awareness of para-sports

- Co-sponsorship of a chair ski school for parents and children held by the Japan Chair Ski Association
- Support for a wheelchair tennis camp for children
- Operated a booth for experiencing wheelchair tennis and chair skiing at local community events and other venues
- Presentation of the para-sports-related webpages "Another Sport" and "ATHLETE MOTHERS" on the Chugai website (Japanese only)

Initiatives for employees and their families

To deepen understanding of para-sports and people with disabilities, Chugai held a hands-on event for experiencing blind sports in cooperation with the Yokohama City Special Support School for the Visually Impaired. There were 21 participants from Chugai, including employees and their family members.

Blind sports experience event

Disaster Relief

Support for Children in Stricken Areas

Chugai once again participated in the global charity event Roche Children's Walk conducted by Roche to support children in need. In this annual initiative, Chugai matches the total amount of funds raised by its employees, and the combined amount is donated to selected organizations. In 2017, the recipient organization was the Kumamoto City Join Hands Association, a social welfare organization conducting activities for the

developmental support of children living in areas affected by the 2016 Kumamoto Earthquakes.

Charity Sale

As part of its support for recovery from the 2011 Great East Japan Earthquake, Chugai held a charity sale at its Kamakura Research Laboratories. Presented in cooperation with the Kesennuma Fisheries Cooperative Association and FUYODO 2100, an NPO in Koriyama City, Fukushima Prefecture, the event featured specialty products from the affected area.

Welfare Vehicle Donation Program

Chugai's program to donate specially equipped welfare vehicles began in 1985 as part of activities to commemorate the Company's 60th anniversary. The program marked its 33rd year in 2017. A total of 248 vehicles have been donated since the start of the program.

Securing the means for senior citizens and disabled people living at home to go to places such as hospitals, day service centers and day care centers and for staff from these facilities to visit homes to perform in-house care, is significant from the viewpoint of enhancing welfare services.

The welfare vehicle donation program is conducted in cooperation with the Japan National Council of Social Welfare and Central Community Chest of Japan, and through it vehicles have been donated to recipients in all of Japan's 47 prefectures.

Initiatives for Global Health

As international contributions in the area of global health, Chugai participates in the Global Health Innovative Technology Fund (GHIT Fund),[1] which aims to conquer infectious diseases in developing countries, and Access Accelerated,[2] which conducts measures for people in those same countries who are living with noncommunicable diseases (NCDs).

1. For details, see the GHIT Fund website (http://www.ghtfund.org/en).
2. For details, see the Access Accelerated website (http://www.accessaccelerated.org/).

GHIT Fund

Jointly established in April 2013 with donations from Japanese pharmaceutical companies, the Japanese government (the Ministry of Foreign Affairs and the Ministry of Health, Labour and Welfare), the Bill & Melinda Gates Foundation and the United Nations Development Programme, the GHIT Fund is Japan's first public-private partnership to support and promote research and development of drugs, vaccines and diagnostics for infectious diseases in developing countries.

In December 2014, Chugai announced its participation in the GHIT Fund and contributed capital. It also decided to undertake a specific drug development program using its innovative discovery technologies and research resources. As a partner in the GHIT Fund, Chugai expects that furthering the development of new medical technologies will go beyond fulfilling its basic social responsibility, leading to the promotion of health and sound economic growth in developing countries.

Access Accelerated

Access Accelerated was established in January 2017 by 22 global pharmaceutical companies including Chugai at the World Economic Forum Annual Meeting held in Davos, Switzerland. In partnership with the World Bank Group and the Union for International Cancer Control (UICC), Access Accelerated is working to achieve the UN Sustainable Development Goal 3 target of reducing premature deaths due to NCDs by one-third by 2030.

Approximately 80 percent of NCD deaths occur in low and lower middle-income countries. Ensuring access to medicines in those regions is a key issue for sustainable improvement in the health of the working population. Through participation in Access Accelerated, Chugai will extend its efforts to healthcare and health in developing countries.

For the Future of Generation AYA Members Living with Cancer

Launch of "AYA Life" for Adolescent and Young Adult Cancer Patients and their Families

In March 2017, Chugai launched "AYA Life," a website for young cancer patients, with the aim of "realizing cancer treatment that allows patients to confront cancer proactively and with hope." AYA, an abbreviation of "Adolescent and Young Adult," refers to the population from around 15 to 39 years of age. There are fewer cancer patients in this age group than in older generations, making it difficult for them to find someone with the same disease to talk to, places for counseling, or information specific to their own generation. To help resolve such problems, the website includes a section where patients from Generation AYA talk about their experiences, a page providing help in building a support network and a "Generation AYA Q&A" section. Future progress in support measures is expected given the inclusion in the Japanese government's Third-Term Comprehensive Ten-Year Strategy for Cancer Control of an examination of improvements to systems to provide information and support counseling and employment for Generation AYA cancer patients. As a leader in oncology in Japan, Chugai will continue to carry out activities that are trusted and valued by healthcare providers, patients, and their families.

(For details, see https://aya-life.jp/ (Japanese only))

Corporate Communication

Initiatives and Performance in 2017

16	436 (cumulative total)	8	2
Information events for the media and institutional investors (2017)	Security analysts and institutional investors worldwide with whom individual meetings were held (2017)	Briefings for individual investors and shareholders (2017)	Plant tours for shareholders and the media (2017)

Communication with Society

Chugai emphasizes communication with stakeholders to increase its corporate value. We are therefore working to enhance communication not only with our shareholders and investors, but also with the general public.

As part of these efforts, Chugai shares its unique strengths outside the Company to gain recognition and understanding. (See "Chugai's Seven Strengths" on pages 10-11 of *Our Essence* for details.)

INNOVATION BEYOND IMAGINATION: This corporate slogan conveys the commitment of the Company and the strong desire of its employees to make Chugai a top pharmaceutical company that continuously creates not only the products anxiously awaited by people around the world but also unprecedented medicines that exceed all expectations.

Media Relations

Chugai conducts proactive media relations through methods including press releases, various types of information meetings and informal discussions with management. We particularly concentrate on meeting individually with reporters covering the Company or the industry for the first time and providing them with basic information to further heighten their interest in and understanding of Chugai and the pharmaceutical industry. Recognizing the important role played by the media in conveying information to stakeholders, Chugai works to maintain good relationships with media outlets while disclosing information appropriately and in a timely manner. In 2017, Chairman Nagayama initiated information meetings for the media with a presentation of his approach to the challenges faced by the Japanese pharmaceutical industry in generating continuous innovation.

Communication with Shareholders and Investors

The 106th Annual General Meeting of Shareholders was held on March 23, 2017. After the presentation of the business report through video and other materials, shareholders deliberated on agenda items concerning appropriation of retained earnings, election of directors and Audit & Supervisory Board members, and the amount and details of remuneration to be paid to directors in the form of shares with restriction on transfer. All agenda items were approved and passed by a majority. The General Meeting of Shareholders is available on demand as a streaming video (in Japanese only) on our website for shareholders who did not attend. In addition, convocation notices for the General Meeting of Shareholders are normally sent out more than four weeks prior to the meeting date.

Coinciding with financial results announcements, Chugai holds information meetings and conference calls for investors, analysts and the media. During 2017, we held "R&D conference calls" to explain and answer questions about information of great interest to investors related to international conferences on oncology and hematologic diseases, held in June and July, respectively. To increase communication with individual shareholders, Chugai has conducted tours of its Utsunomiya Plant each year since 2013, and is enhancing its outreach to them by holding information meetings at branches of securities companies in Japan.

Senior management also continued to hold overseas roadshows and, in addition to their visits to institutional investors in the United States, Europe and Asia, Chugai IR Group employees conducted roadshows as an additional initiative to cultivate new institutional investors, mainly in North America and Europe. To deepen mutual understanding between Chugai's President and market participants through direct communication in small groups, President Kosaka held informal discussions with investors and analysts in 2017.

Due to the introduction of the Principles for Responsible Institutional Investors (Japan's Stewardship Code) and Japan's Corporate Governance Code, greater dialogue between companies and shareholders is required. The Japan Securities Dealers Association has established guidelines for securities companies' analysts in activities related to obtaining information from issuers and providing it to investors, and voluntary restrictions have been introduced on obtaining information from issuing companies prior to earnings announcements, among other measures. As a result, although the number of individual interviews decreased, Chugai has proactively established forums for discussion between investors and its management team for a fuller exchange of opinions on the Company's vision and medium-to-long-term strategies. We will continue measures to enhance face-to-face IR with management to promote understanding of Chugai's corporate value.

Disclosure Policy

Chugai conducts interactive corporate communication activities to deepen mutual understanding and build relationships of trust with its stakeholders, such as patients, healthcare providers, shareholders, investors and employees. In order to achieve these objectives, Chugai ensures that information related to its business activities is made available to stakeholders in a transparent, fair and consistent manner.

Chugai's policy for disclosing information to shareholders and investors is to make timely, appropriate and fair disclosure of information in accordance with the Financial Instruments and Exchange Act and relevant rules of the stock exchange on which Chugai's shares are listed in order to receive fair valuation in capital markets. In addition, measures to allow easy access to disclosed information have been established to ensure transparency. As a rule, we disclose information simultaneously in Japanese and English, and endeavor to provide information in a prompt and fair manner in Japan and overseas.

Chugai has established an IR Committee composed of the CFO and general managers of the Corporate Communications Department, the Corporate Planning Department, the Finance & Accounting Department, the Corporate Social Responsibility Department and the General Affairs Department as a corporate management committee. The IR Committee holds regular meetings and is responsible for the establishment, revision and internal dissemination of the Disclosure Policy, and for the management and promotion of information collection, disclosure and other related activities. Top management, including the CEO and key executive officers, has primary accountability for disclosure. In addition, the Corporate Communications Department takes the lead in coordinating with relevant departments to disclose information promptly.

Note: For further details on the Company's policy for disclosure to shareholders, investors, securities analysts and other capital market participants, please refer to the Chugai website (https://www.chugai-pharm.co.jp/english/ir/policy/disclosure.html).

Basic Information

Basic Information on the Pharmaceutical Industry

Overview of Domestic Pharmaceutical Market and NHI Drug Prices

Trends in National Medical Expenses

Without medical system reforms, Japan's national medical expenses will increase at an annual rate of approximately 2 to 4 percent going forward. In fiscal 2016 (the year ended March 2017), national medical expenses[1] totaled ¥41.3 trillion, a ¥0.2 trillion or 0.4 percent decrease from the previous year. The accelerating pace of aging of Japan's society presents serious challenges to efficiently managing the increase in medical expenses for the elderly.

1. Source: Trends of recent medical expenditure (FY 2016) by Ministry of Health, Labour and Welfare

Promotion of the Use of Generics

The Japanese government is promoting the use of generics[2] with the primary objective of reducing the cost burden on patients and improving the finances of the health insurance system. Various measures have been carried out under the action program announced in October 2007 to promote the worry-free use of generics. In April 2013, the new "Roadmap to Further Promote the Use of Generics" was formulated. A Cabinet decision in June 2017 set the new goal of raising the volume market share of generics, which was 65.8 percent[3] as of September 2017 to 80 percent by the end of September 2020. The government is also aiming to double the number of biosimilars by the end of March 2021.

2. Drugs approved after the expiry of the patents for original drugs with the same active ingredients and efficacy
3. Preliminary results of the Drug Price Survey

National Health Insurance (NHI) Drug Price Revision

The Ministry of Health, Labour and Welfare (MHLW) generally reviews drug reimbursement prices every two years and sets new standard prices (reimbursement prices) so that the official prices of pharmaceuticals prescribed under the health insurance system approximate their actual market price. MHLW does this by investigating the prices and volumes of all prescription drug transactions during a given period. In fiscal 2018 (the year ending March 2019), drug reimbursement prices are set to decline by 1.65 percent overall on a medical expense basis and 7.48 percent on a reimbursement price basis (-6.17 percent from revision of actual market prices and -1.31 percent from fundamental reform of the drug pricing system).

Repricing Based on Market Expansion

Under this repricing rule introduced in 1994, drugs priced by the cost calculation method with annual sales exceeding ¥10.0 billion and more than 10 times the original forecast at the time of price revision, or with annual sales exceeding ¥15.0 billion and more than two times the original forecast, are subject to a price reduction of up to 25.0 percent. Drugs priced by methods other than the cost calculation method (including the similar efficacy comparison method) with annual sales exceeding ¥15.0 billion and more than two times the original forecast at the time of the price revision are subject to a price reduction of up to 15.0 percent. In addition, the prices of drugs that have pharmacological action similar to the drug subject to this repricing rule are reduced by the same rate. In the NHI drug pricing system fundamental reforms of fiscal 2018, the NHI listing of new drugs that takes place four times a year will be used as an opportunity for repricing of drugs with annual sales exceeding ¥35.0 billion. The purpose of this change is to respond more quickly when sales expand rapidly due to an additional indication or other reasons.

NHI Drug Price Revision Rate (%)

	2008	2010	2012	2014*	2016	2018
Industry Average	(5.2)	(6.5)	(6.25)	(2.65)	(7.8)	(7.48)
Chugai	(7.2)	(6.8)	(6.0)	0.8	(5.5)	(6.7)

*Includes provision for increase in consumption tax
Source: Chugai data

Special Market-Expansion Repricing

In the reforms to the drug pricing system in fiscal 2016, an additional repricing rule for drugs with very high annual sales was introduced as a special measure from the standpoint of balancing reward for innovation with the sustainability of the National Health Insurance system. This rule lowers prices by up to 25.0 percent for drugs with annual sales of ¥100.0-150.0 billion and more than 1.5 times the original forecast, and lowers prices by up to 50.0 percent for drugs with annual sales exceeding ¥150.0 billion and more than 1.3 times the original forecast. In addition, the prices of drugs that have pharmacological action similar to the drug subject to the special repricing rule and were comparator drugs at the time of the NHI price listing are reduced by the same rate. In 2016, four active ingredients and six products were subject to the additional repricing rule. In fiscal 2018, two active ingredients and four products are subject to the rule. In the NHI drug pricing system fundamental reforms of fiscal 2018, the NHI listing of new drugs that takes place four times a year will be used as an opportunity for repricing of drugs that meet the conditions in this system.

Premium to Promote the Development of New Drugs and Eliminate Off-Label Use

As part of the NHI drug pricing system reforms of fiscal 2010 (the year ended March 2011), a new pricing scheme was implemented on a trial basis to promote the creation of innovative medical products and solve the drug lag[4] problem. In this scheme, at the time of the NHI drug price revisions, prices are maintained on drugs for which no generics are available (provided that they have been in the NHI price list for no more than 15 years), and which satisfy certain conditions.

This premium pricing for new drugs was continued on a trial basis in subsequent NHI drug pricing system reforms. However, in the NHI drug pricing system fundamental reforms of fiscal 2018, the requirements for companies and products will be revised and will be listed in the drug repricing rules.

Companies that do not respond appropriately to development requests from MHLW will continue to be excluded from eligibility for premium pricing. In addition, indicators have been set for (A) creation of innovative drugs, (B) drug lag countermeasures, and (C) development of novel drugs ahead of other countries, and the pricing premiums may vary according to the level of achievement or fulfillment of these indicators. Healthcare-related ventures are expected to play an important role in the creation of innovative drugs, and will be evaluated accordingly, irrespective of the company indicators.

Regarding the product requirements, the percentage price difference requirement will be abolished, and the price premium will be limited to novel drugs during their patent period, and drugs that are truly innovative and useful. More specifically, it will be limited to orphan drugs, drugs for which development was publicly requested, drugs to which the premium was applied because of their usefulness at the time they were newly listed, and drugs with novel mechanisms of action that are innovative or useful (limited to the top three first-in-class drugs within three years from listing).

In fiscal 2018, 314 active ingredients and 560 products are set to receive premium pricing (publicly announced).

Among new drugs subject to premium pricing, including those for which generics (including biosimilars) have been launched or 15 years have elapsed since their drug price listing, the cumulative amount of premium pricing is deducted from the NHI drug price in the subsequent initial drug price revision. Furthermore, a reduction or other adjustment due to the actual market price of the new drug during the fiscal year is made to the NHI drug price less the cumulative amount.

4. The inability of Japanese patients to gain access to global standard or most advanced treatments because the drugs are not developed in Japan

Response to Requests from the MHLW Review Committee on Unapproved Drugs and Indications with High Medical Needs (As of February 1, 2018)

Development request	Product	Indication	Development status
First development request	Xeloda	Advanced or recurrent gastric cancer	Approved in February 2011
	Tarceva	Advanced or recurrent pancreatic cancer	Approved in July 2011
	Avastin	Advanced or recurrent breast cancer	Approved in September 2011
	CellCept	Pediatric renal transplant	Approved in September 2011
	Herceptin	Q3W dosage metastatic breast cancer overexpressing HER2	Approved in November 2011
		Neoadjuvant breast cancer overexpressing HER2	
	Kytril	Gastrointestinal symptoms associated with radiotherapy	Approved in December 2011
	Pulmozyme	Improvement of pulmonary function in patients with cystic fibrosis	Approved in March 2012
	Bactramin	Treatment and prevention of pneumocystis pneumonia	Approved in August 2012
	Avastin	Ovarian cancer	Approved in November 2013
Second development request	Avastin	Recurrent glioblastoma	Approved in June 2013 (Malignant glioma)
	Herceptin	Q1W dosage postoperative adjuvant breast cancer overexpressing HER2	Approved in June 2013
	CellCept	Lupus nephritis	Approved in May 2016
Third development request	Tamiflu	Additional dosage for neonates and infants younger than 12 months	Approved in March 2017
	Xeloda	Adjuvant chemotherapy in rectal cancer	Approved in August 2016
	Avastin	Additional dosage and administration for ovarian cancer	Submitted company opinion and waiting for evaluation by committee
Fourth development request	Copegus	Improvement of viraemia associated with genotype 3 chronic hepatitis C or compensated cirrhosis related to hepatitis C when administered in combination with sofosbuvir	Approved in March 2017
	Xeloda	Neuroendocrine tumor	Submitted company opinion and waiting for evaluation by committee

Solving the Drug Lag Problem

In January 2005, MHLW established the Investigational Committee for Usage of Unapproved Drugs as one means of helping solve the drug lag problem. The committee is charged with investigating the clinical necessity and the appropriateness of usage of drugs already approved in Europe and the United States, but not yet approved in Japan. The aim of these investigations is to promote the development of those drugs in Japan. In February 2010, MHLW established the Review Committee on Unapproved Drugs and Indications with High Medical Needs. This committee evaluates the medical necessity of drugs and indications that are not yet approved in Japan and investigates matters such as the applicability of filings for approval based on evidence in the public domain. As a result of continuous efforts to strengthen the review function of the Pharmaceutical and Medical Devices Agency, an independent administrative institution responsible for reviewing drugs and medical devices for approval, the median total review time for new drugs fiscal 2016 was 11.6 months.

Annual Drug Price Survey and Annual NHI Drug Price Revision

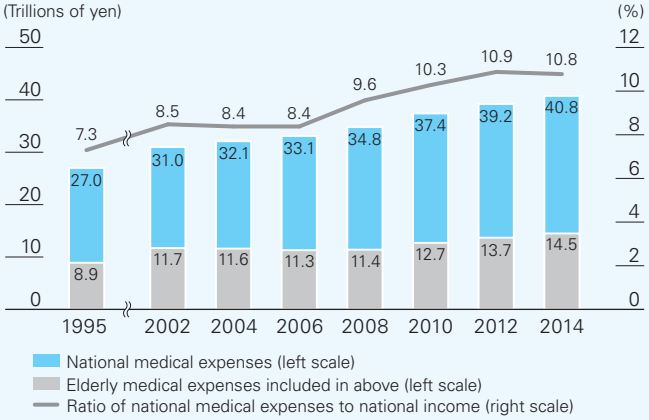
Due to the growing public financial burden of the current situation, in which drug prices are maintained for up to two years even if the market price declines, it was decided in the NHI drug pricing system fundamental reforms of fiscal 2018 that drug price surveys and drug price revisions will be carried out even in interim years when there would ordinarily be no price revisions. Fiscal 2018 and fiscal 2020 (the year ending March 2021) are price revision years even under the current system, and it is expected that the prices of all drugs will be revised in conjunction with the consumption tax rate increase in October 2019. Therefore, the interim-year price revisions under the new rules will take place starting from fiscal 2021 (the year ending March 2022). The scope of items subject to interim-year price revisions will be deliberated by the Central Social Insurance Medical Council (Chuikyo) and other organizations.

Reduction Due to Cost-Effectiveness Assessment

Seven pharmaceutical products, including Kadcyla sold by Chugai, were subject to cost-effectiveness assessments, which are currently being implemented on a trial basis. The results of the comprehensive assessment were reflected in drug prices at the time of the fiscal 2018 price revisions (price adjustments). The extent of these price adjustments is the portion corresponding to the amount of the corrective premium applied at the time of the drug's initial pricing. Price adjustments will be made according to the incremental cost effectiveness ratio (ICER).[5] The corrective premium will be maintained if the ICER is less than ¥5 million, but will be reduced by up to 90 percent if the ICER is ¥5 million or more. The percentage of the reduction may be moderated if ethical and social factors are taken into consideration.

5. The ICER indicates the extent to which additional investment would be necessary to obtain the additional benefit from replacing existing drug (technology) B with new drug A.

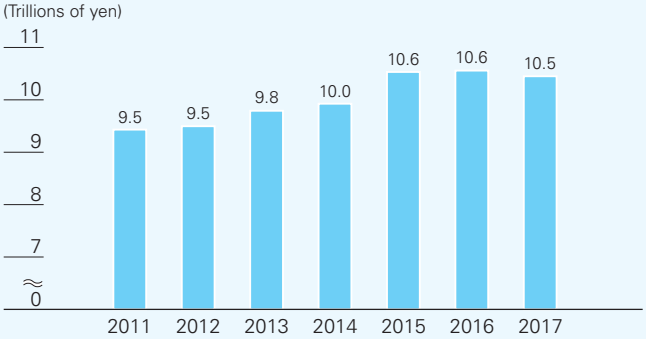
Trends of Medical Care Expenditure



Source: Overview of Estimates of National Medical Care Expenditure, FY2015 by Ministry of Health, Labour and Welfare

Note: National income is based on the actual results of the System of National Accounts announced by the Cabinet Office.

Prescription Drug Market



Oncology

Overview of Disease and Treatment Methods

Leading Cause of Death in Japan

Cancer has been the single most common cause of death in Japan since 1981. In 2016, 372,986 people[1] died of cancer, accounting for 28.5 percent[1] of all deaths in that year and the highest number since government surveys began in 1899.

1. Source: Outline of Vital Statistics (2016) by Ministry of Health, Labour and Welfare

Establishment of the Basic Act for Anticancer Measures and Improvement in the Healthcare Environment

In June 2006, the Diet enacted the Basic Act for Anticancer Measures, which stipulates the obligation of national and local governments to promote measures to fight cancer. The basic principle of the law is to develop cancer treatment systems in every region of the country so that patients can receive standard therapy based on scientific knowledge and in accordance with their wishes ("the availability of standard therapy" for cancer patients). The law includes provisions for (1) improvement of cancer prevention and treatment technologies, (2) development of oncologists and "hub" institutions that specialize in cancer, and (3) enhanced provision of information to patients. As a result of the enactment of this law, progress has been made in the training of oncologists and medical staff such as nurses and pharmacists. Other advances include greater efforts to establish networks

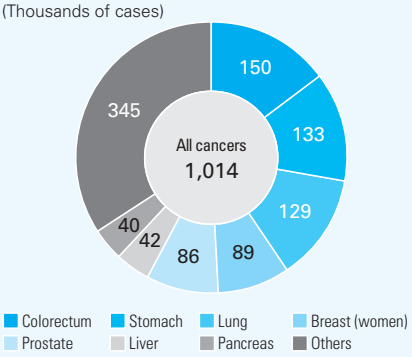
among local medical institutions by designating interregional hub cancer centers. Moreover, an increasing percentage of medical institutions are adopting multidisciplinary team care in which oncologists, nurses, pharmacists and nutritionists work together to provide care tailored to the condition of each individual patient. In December 2013, the Cancer Registration Law was enacted, requiring hospitals nationwide to provide information on each cancer patient. The law is aimed at shedding light on the current state of cancer treatment by centralizing patient information in a single database and using that resource to improve early detection and treatment. Furthermore, it is projected that achieving the overall goal of reducing the age-adjusted cancer mortality rate by 20 percent over 10 years from 2007 in the Basic Plan to Promote Cancer Control Programs (approved by the Cabinet in June 2007), will be difficult. Therefore, in December 2015, the Plan for Acceleration of Cancer Control Programs was formulated. This plan specified concrete measures that should be implemented intensively in a short period of time.

Changes in Treatment Methods

Cancer treatment is increasingly being based on a multidisciplinary approach that combines surgery, radiation therapy and chemotherapy. In particular, the field of anticancer agents is evolving, and highly innovative medicines such as molecular targeted drugs have been introduced. This has brought a dramatic improvement in treatment outcomes in colorectal, lung and breast cancer, gynecological cancers, kidney cancer, brain tumors, malignant melanoma, hematological malignancy and other forms of cancer. Advances are being made in personalized healthcare, which involves testing patients with companion diagnostics when administering molecular targeted drugs to identify patients in whom the drug is likely to have the desired effect with minimal strain on the body and few side effects. In addition to enabling physicians to propose the optimal treatment tailored to each patient, this approach offers a number of other benefits. For example, it can reduce national healthcare expenditures by reducing the administration of drugs when their effect cannot be determined. When performing a diagnosis, there may be a number of different molecular targeted drugs available for the same disease, and there are some cases in which looking at the molecules expressed in the target tissues is insufficient for diagnosis; therefore, it is also becoming important to conduct exhaustive biomarker measurements such as multiplex testing. Moreover, the Council to Promote the Realization of Genomic Medicine, established by the Japanese government in January 2015, MHLW and pharmaceutical industry organizations have launched studies for the realization of genomic medicine. The provision of optimal treatments based on each patient's genetic profile is thus becoming a reality. In addition, cancer immunotherapy, which takes advantage of the body's own immune cells to fight cancer, is another important emerging field of treatment. Immune checkpoint inhibitors, one type of immunotherapy now in use, are a promising new direction in cancer treatment. Cancer has the ability to suppress immune functions to avoid attack from the immune system. By blocking the immune "brakes" (the binding of PD-1 to PD-L1) known as the immune checkpoint, immune cells can be awakened to attack cancer cells. In clinical trial results, immune checkpoint inhibitors have shown promise for long-term survival and cure, even in advanced cancer. Expectations are growing for their high therapeutic effect and potential for treating a wide range of cancers. On the other hand, some patients do not respond to cancer immunotherapy, so screening to select patients for whom this therapy is likely to be effective and combination therapy with existing anticancer agents are also being examined.

Projected Cancer Incidence (2017)

(Thousands of cases)



Source: National Cancer Center Cancer Information Service, "Cancer Registries/Statistics"

Note: Projections were performed with a model incorporating age, calendar year at diagnosis, and their interactions as independent variables, utilizing frequency of incidence of cancer by age bracket from Monitoring of Cancer Incidence in Japan (1975-2013 nationwide estimates) and cancer mortality figures from the Outline of Vital Statistics (1975-2015 estimates). The total may not add up because projections have been performed by cancer type and figures have been rounded.

Reference: *Japanese Journal of Clinical Oncology* 2014, 44: 36-41

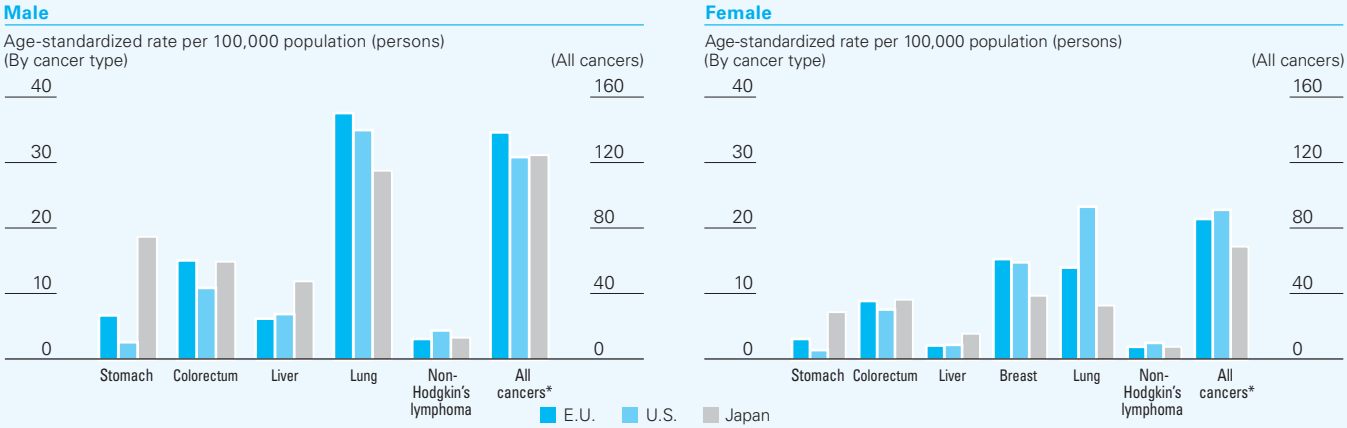
Avastin (RG435)

Anti-VEGF humanized monoclonal antibody (Generic name: bevacizumab)

Basic Information

Avastin is a humanized monoclonal antibody targeting vascular endothelial growth factor (VEGF). It is the first therapeutic agent in the world that inhibits angiogenesis (the growth of the network of blood vessels that supply nutrients and oxygen to the cancer). Unlike conventional anticancer agents that act directly on cancer cells, Avastin acts on the cancer microenvironment. In Japan, Avastin was launched in 2007 for the treatment of

International Comparison of Cancer Mortality Rates (2012)



* Excluding non-melanoma skin cancer

Source: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: http://globocan.iarc.fr, accessed on 06/03/2018.

unresectable advanced or recurrent colorectal cancer. In 2009, Chugai obtained approval for a new dosage and administration for colorectal cancer and the additional indication of unresectable advanced or recurrent non-squamous non-small cell lung cancer (NSCLC), followed in 2011 by inoperable or recurrent breast cancer. Chugai also obtained approval for the additional indications of malignant glioma and ovarian cancer in 2013, and advanced or recurrent cervical cancer in May 2016.

Review of 2017 Performance

Sales of Avastin increased ¥1.0 billion, or 1.1 percent, year on year to ¥93.1 billion. Avastin has built a solid position in the treatment of colorectal cancer and lung cancer, but the competitive environment in the field of lung cancer has been changing due to the introduction of immune checkpoint inhibitors and other products. On the other hand, in the field of gynecologic oncology, sales were solid for both ovarian cancer and cervical cancer owing to the synergy between these two indications. In development, Chugai had been conducting a phase II clinical trial in Japan for the potential treatment of malignant pleural mesothelioma, but development was discontinued in light of the development situation overseas. A phase III multinational study of Avastin in combination with Tecentriq in NSCLC, renal cell carcinoma and ovarian cancer patients is under way.

Herceptin

Anti-HER2 humanized monoclonal antibody
(Generic name: trastuzumab)

Basic Information

Herceptin is a humanized monoclonal antibody that targets human epidermal growth factor receptor type 2 (HER2), [2] which contributes to tumor cell growth. The earliest PHC-based anticancer agent, Herceptin has built a solid reputation as an essential treatment for HER2-positive breast cancer since its launch in 2001.

Overexpression of HER2 is found in about 20 percent of breast cancers. Such cancer is diagnosed as HER2-positive. HER2-positive breast cancer progresses rapidly, and has been associated with a poor prognosis. However, treatment outcomes have improved significantly with the emergence of Herceptin and other medicines that target HER2. In 2011, Herceptin obtained approval for the additional indication of advanced or recurrent gastric cancer overexpressing HER2, not amenable to curative resection, bringing personalized healthcare to the field of gastric cancer.

Review of 2017 Performance

Sales of Herceptin decreased ¥0.5 billion, or 1.5 percent, year on year to ¥33.6 billion. In addition to the extension of the dosage period in first-line treatment of HER2-positive advanced or recurrent breast cancer in combination with Perjeta, Herceptin is used for more than 90 percent of lymph-node positive patients undergoing postoperative adjuvant chemotherapy for HER2-positive breast cancer. For gastric cancer, although Herceptin maintained its established position in first-line treatment, sales decreased slightly due to competition in second-line treatment.

2. A diagnostic test can determine if a patient's breast or gastric cancer cells have overexpression of a protein called HER2. Herceptin, Perjeta and Kadcyla target HER2 and are administered only to patients whose tumors are identified as HER2-positive.

Perjeta (RG1273)

HER2 dimerization inhibitory humanized monoclonal antibody
(Generic name: pertuzumab)

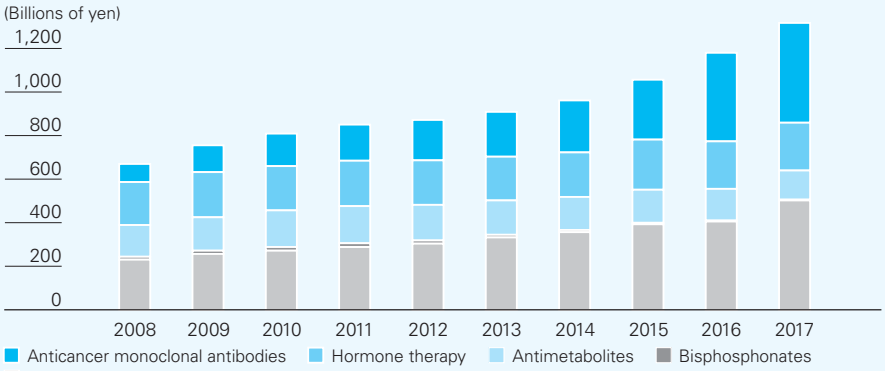
Basic Information

Perjeta is a humanized monoclonal antibody and is the first molecular targeted therapy that inhibits the dimerization of HER2. The combination of Perjeta and Herceptin, which also targets HER2, provides a more comprehensive blockade of HER signaling pathways associated with the proliferation of tumor cells. Chugai launched Perjeta for the indication of HER2-positive inoperable or recurrent breast cancer in September 2013, after obtaining approval in June 2013.

Review of 2017 Performance

Sales of Perjeta increased ¥1.7 billion, or 14.3 percent, year on year to ¥13.6 billion, exceeding projections. In the clinical practice guidelines for breast cancer, which were updated in July 2015, the combination therapy of Herceptin and Perjeta with docetaxel was the only therapy to receive a Grade A recommendation as a first-line therapy for HER2-positive metastatic or recurrent breast cancer, and uptake as a first-line treatment was steady. In development, Chugai filed an application in October 2017 for approval for the expected indication of adjuvant chemotherapy for HER2-positive early breast cancer. However, development for the potential treatment of advanced or recurrent gastric cancer was discontinued in view of the results of phase III multinational studies.

Anticancer Agent Market in Japan



Source: JPM 2008-2017

The scope of the market is defined by Chugai.

Kadcyla (RG3502)

Anti-HER2 antibody-tubulin polymerization inhibitor conjugate
(Generic name: trastuzumab emtansine)

Basic Information

Kadcyla is an antibody-drug conjugate of the anti-HER2 humanized monoclonal antibody trastuzumab (product name: Herceptin) and the potent chemotherapeutic agent DM1, joined together with a stable linker. Chugai filed an application for approval for the treatment of HER2-positive inoperable or recurrent breast cancer in January 2013, obtained approval in September 2013 after priority review, and launched the product in April 2014.

Review of 2017 Performance

Sales of Kadcyla decreased ¥0.3 billion, or 3.6 percent, year on year to ¥8.0 billion. Kadcyla was launched three years ago, and many patients who had been receiving first-line treatment with Kadcyla proceeded to the next line of treatment as their disease progressed. In addition, regarding patients receiving first-line treatment with Herceptin and Perjeta plus a chemotherapeutic agent, the number who switched to Kadcyla after their cancer worsened fell slightly due to an increase in cases in which only the chemotherapeutic agent was changed. In development, a phase III multinational study for the potential treatment of HER2- positive breast cancer (adjuvant chemotherapy) is under way.

Rituxan

Anti-CD20 monoclonal antibody
(Generic name: rituximab)

Basic Information

Rituxan is a monoclonal antibody targeting the CD20 antigen found on the surface of lymphocytes. As a standard therapy for CD20-

positive, B-cell non-Hodgkin's lymphoma (hematological cancer), it has substantially improved clinical outcomes in combination with chemotherapy or in monotherapy. In Japan, Rituxan is marketed jointly by Chugai and Zenyaku Kogyo Co., Ltd. In recent years, the usefulness of Rituxan has been recognized in treating CD20-positive, B-cell lymphoma in immunosuppressed patients, ANCA-associated vasculitis, refractory childhood-onset nephrotic syndrome, suppression of antibody-related rejection in ABO-incompatible kidney and liver transplantation, and idiopathic thrombocytopenic purpura (ITP). It has also become a valuable treatment option for patients with autoimmune diseases and other conditions.

Review of 2017 Performance

Sales of Rituxan increased ¥1.3 billion, or 4.0 percent, year on year to ¥33.4 billion. The number of patients diagnosed with B-cell non-Hodgkin's lymphoma who are using Rituxan has increased, and the use of Rituxan in patients with ITP, for which it recently obtained approval, also contributed to sales growth.

Alecensa (AF802/RG7853)

ALK inhibitor
(Generic name: alectinib)

Basic Information

Alecensa, an oral, small molecule targeted molecular therapy created by Chugai, inhibits the activity of the tyrosine kinase anaplastic lymphoma kinase (ALK) with *EML4-ALK* fusion gene expressed in about 2 to 5 percent of NSCLC. It was designated as an orphan drug in Japan in September 2013 for the treatment of *ALK* fusion gene-positive unresectable, recurrent/advanced NSCLC. In October 2013, Chugai filed an application for approval. Following approval in July 2014, Alecensa was launched first in Japan in September 2014. In addition to being the first product from Chugai research to be granted breakthrough therapy designation by the U.S. Food and Drug Administration (FDA), Alecensa received its second such designation as a first-line treatment in 2016, and it is expected to contribute to the treatment of patients around the world. In December 2015, Alecensa obtained approval in the United States for the indication of ALK-positive metastatic (advanced) NSCLC in patients whose disease has progressed on or who are intolerant to crizotinib.

Review of 2017 Performance

Market penetration proceeded further with the announcement of positive results leading to the early discontinuance for benefit of a study comparing the efficacy and safety of Alecensa and a competing product on patients in Japan (J-ALEX study). Sales increased ¥4.8 billion, or 40.3 percent, year on year to ¥16.7 billion, exceeding expectations due to a high rate of continuation of treatment. All-case registration surveillance is currently being conducted for Alecensa, and Chugai is promoting appropriate use and gathering safety information. Outside Japan, Alecensa obtained approval in Europe in February 2017 for the indication of ALK-positive, metastatic NSCLC in patients whose disease has progressed on or who are intolerant to crizotinib. A study evaluating the efficacy and safety of Alecensa in direct comparison with a competing product in overseas patients (ALEX study) showed the superiority of Alecensa, and applications for approval as first-line treatment were filed in the United States and Europe in March 2017. Approval as a first-line treatment was obtained in the United States in November 2017 and in Europe in December 2017. Overseas sales of Alecensa (exports to Roche) increased 275.7 percent, or ¥10.2 billion, year on year to ¥13.9 billion.

Xeloda

Antimetabolite, 5-FU derivative
(Generic name: capecitabine)

Basic Information

Xeloda is a 5-fluorouracil (5-FU) anticancer agent developed at the research laboratories of the former Nippon Roche. Orally administered Xeloda is absorbed by the body, then gradually metabolized by certain highly active enzymes in liver and tumor tissue, and is eventually converted into active 5-FU within tumor tissue. Xeloda has obtained approval for the treatment of inoperable or recurrent breast cancer, colorectal cancer and gastric cancer.

Review of 2017 Performance

Sales of Xeloda decreased ¥0.1 billion, or 0.8 percent, year on year to ¥12.2 billion. Backed by Chugai's initiatives to promote adverse drug reaction management, Xeloda has established a top position in postoperative adjuvant chemotherapy performed to inhibit recurrence after surgery for colon cancer. In gastric cancer, prescriptions have increased for postoperative adjuvant chemotherapy, for which Xeloda obtained approval in November 2015.

Tarceva

Epidermal growth factor receptor (EGFR) tyrosine kinase inhibitor
(Generic name: erlotinib)

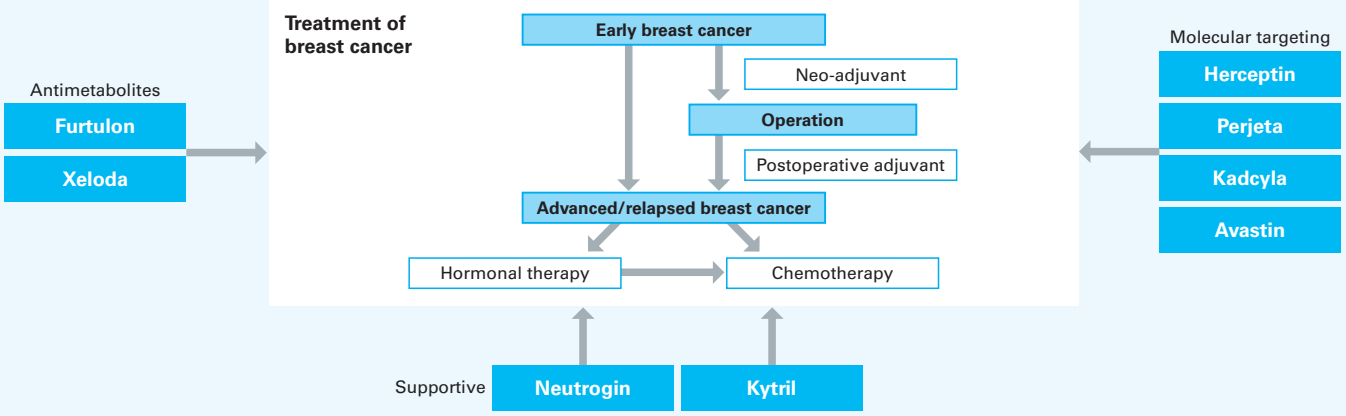
Basic Information

Tarceva is an oral targeted small molecule drug that inhibits the activation of epidermal growth factor receptor (EGFR) tyrosine kinase, which is associated with the growth, progression and metastasis of cancer. In Japan, Tarceva had been used for second-line or later treatment of NSCLC since its launch in 2007, but the approval of an additional indication in June 2013 allowed its use in first-line treatment of patients with *EGFR* mutations, in whom high efficacy is expected. About 10 percent of NSCLC patients in Europe and about 30 percent in Asia diagnose positive for *EGFR* mutations. In 2011, Tarceva obtained approval for the additional indication of pancreatic cancer not amenable to curative resection.

Review of 2017 Performance

Sales of Tarceva decreased ¥1.0 billion, or 8.7 percent, year on year to ¥10.5 billion. In NSCLC, uptake of Tarceva in first-line treatment in patients with *EGFR* mutations is progressing due to evidence of efficacy in patients with brain metastases, but sales decreased compared with the previous year due to the impact of competing products in the second-line setting.

Extensive Contribution to Cancer Treatment (Breast Cancer)



Zelboraf

BRAF inhibitor
(Generic name: vemurafenib)

Basic Information

Zelboraf, in-licensed from Roche, is an oral, small molecule drug that selectively inhibits a mutated form of the BRAF protein which is thought to occur in approximately half of all malignant melanoma cases. Chugai filed an application for approval of Zelboraf for the treatment of unresectable melanoma with *BRAF* mutation in April 2014, obtained approval in December 2014 and launched the product in February 2015. Roche Diagnostics K.K. filed an application for approval of a companion diagnostic to detect the *BRAF* mutation, and obtained approval in December 2014.

Review of 2017 Performance

Sales decreased ¥0.3 billion, or 75 percent, year on year to ¥0.1 billion as a result of changes in the competitive environment.

Neutrogin

Recombinant human granulocyte colony-stimulating factor (G-CSF)
(Generic name: lenograstim; overseas product name: Granocyte)

Basic Information

Neutrogin is a recombinant human granulocyte colony-stimulating factor (G-CSF) created by Chugai. One common side effect of anticancer drugs is neutropenia, a decrease in the white blood cell count that heightens the risk of developing serious infections. Neutrogin stimulates the differentiation and growth of neutrophils, enabling the safer use of chemotherapy, thus helping to improve treatment outcomes. Neutrogin is also essential in hematopoietic stem cell transplantation, which is performed for illnesses that affect production of normal blood cells, such as leukemia.

Review of 2017 Performance

Despite intensified competition overseas, sales of Neutrogin increased ¥0.1 billion, or 0.8 percent, year on year to ¥12.3 billion due to the positive effect of exchange rates (weak yen relative to the euro).

Aloxi

5-HT_3 receptor antagonist
(Generic name: palonosetron)

Akynzeo

NEPA
(Generic name: oral combination of netupitant and palonosetron)

Basic Information

These products are small molecules for the prevention of chemotherapy-induced nausea and vomiting. Chugai has been granted exclusive marketing rights by the Helsinn Group of Switzerland for Aloxi in the U.K. and Akynzeo in the U.K. and Ireland. Aloxi is a best-in-class 5-HT_3 receptor antagonist, and Akynzeo is an oral capsule that combines this receptor antagonist with netupitant, a novel NK1 receptor antagonist. Aloxi was launched in the U.K. in January 2015. Akynzeo was launched in the U.K. in September 2015 and in Ireland in December 2015.

Review of 2017 Performance

Sales in the U.K. for Aloxi and Akynzeo totaled ¥0.4 billion. All MRs in charge of promoting these products also handle Granocyte, which is creating synergy.

Tecentriq (RG7446)

Engineered anti-PDL1 monoclonal antibody
(Generic name: atezolizumab)

Tecentriq is an engineered anti-PDL1 monoclonal antibody in-licensed from Roche. One way that tumor cells evade the immune system is by expressing a protein called programmed death-ligand 1 (PD-L1) on their surface, which is believed to shield them from immune system attacks by binding to T cells. Tecentriq restores and maintains the immune response of T cells by binding to PD-L1, and is expected to demonstrate efficacy against cancer cells. Its mode of action differs from conventional treatments that attack cancer cells directly. Since it takes advantage of the patient's own immune response, it is also promising for use in combination with existing drugs and for various cancer types. Chugai filed an application in February 2017 for approval as a treatment for NSCLC, and obtained approval in January 2018 for the treatment of unresectable advanced or recurrent NSCLC. New phase III multinational studies started for adjuvant chemotherapy of renal cell carcinoma in January 2017 and for the treatment of ovarian cancer and prostate cancer in March 2017. In addition, Chugai is participating in phase II and phase III multinational studies for the treatment of NSCLC as well as phase III multinational studies for the expected indications of postoperative adjuvant chemotherapy of NSCLC, small cell lung cancer, urothelial carcinoma, postoperative adjuvant chemotherapy of muscle invasive urothelial carcinoma, breast cancer and renal cell carcinoma (in combination with Avastin).

GC33 (RG7686)

Anti-glypican-3 humanized monoclonal antibody
(Generic name: codrituzumab)

GC33, a humanized monoclonal antibody created by Chugai, targets glypican-3 (GPC3), which is specifically expressed in hepatocellular carcinoma. The project involves joint research between Chugai and Tokyo University, as well as pathological proteomics work by PharmaLogicals Research Pte. Ltd., a former subsidiary of Chugai. GC33 did not meet the primary endpoint in a phase II multinational monotherapy study started in March 2012. A phase I clinical study for the potential treatment of hepatocellular carcinoma in combination with Tecentriq started in August 2016.

ERY974

Anti-glypican-3/CD3 bispecific antibody

ERY974 is the first T-cell redirecting antibody (TRAB) developed by Chugai. TRAB is a bispecific antibody that creates a short bridge between CD3 on T cells and tumor antigen on tumor cells to activate T cells in a tumor antigen-dependent manner, and is expected to demonstrate strong cytotoxicity against tumor cells. GPC3, a tumor antigen targeted by ERY974, is reported to be expressed in multiple types of tumor cells including hepatocellular carcinoma, gastric cancer and esophageal cancer. A phase I clinical study started overseas in August 2016.

GA101 (RG7159)

Glycoengineered type II anti-CD20 monoclonal antibody
(Generic name: obinutuzumab; overseas product name: Gazyva/Gazyvaro (E.U.))

GA101 is a type II glycoengineered monoclonal antibody in-licensed from Roche that, like Rituxan, targets CD20. In November 2012, Chugai entered into an agreement with Nippon Shinyaku Co., Ltd. to co-develop and co-market this agent in Japan. In August 2017, Chugai filed an application for approval for the treatment of CD20-positive B-cell follicular lymphoma (FL).

RG7596

Anti-CD79b antibody-drug conjugate
(Generic name: polatuzumab vedotin)

RG7596 is an antibody-drug conjugate of an anti-CD79b monoclonal antibody and the microtubule inhibitor MMAE, joined together with a linker. In-licensed from Roche, the conjugate is designed to deliver MMAE directly into B cells via CD79b, which is expressed on B cells, so that the inhibitor can act. RG7596 is expected to demonstrate a cytostatic effect on tumor cells while limiting impact on normal cells. A phase III multinational study for the treatment of diffuse large B-cell lymphoma (DLBCL) started in November 2017.

RG7604

PI3K inhibitor
(Generic name: taselisib)

RG7604 is a PI3K inhibitor in-licensed from Roche. A phase I clinical study started in Japan in September 2014 for the treatment of solid tumors. This drug is a small molecule

anticancer agent that selectively inhibits PI3K. It has been shown to exhibit stronger inhibitory activity against PI3Kα mutations compared with RG7321, development of which was discontinued in 2015.

RG7440
AKT inhibitor
(Generic name: ipatasertib)

RG7440 is an AKT inhibitor in-licensed from Roche. Phase III multinational studies started in June 2017 for the treatment of prostate cancer and in January 2018 for the treatment of breast cancer.

CKI27
Raf/MEK inhibitor

CKI27 is a Raf and MEK dual inhibitor created by Chugai. Phase I clinical studies in Japan and overseas have been completed. An investigator-initiated clinical study is ongoing overseas, and study results were announced at the 2017 ASCO Annual Meeting.

RG7421
MEK inhibitor
(Generic name: cobimetinib)

RG7421 is an MEK inhibitor in-licensed from Roche. Chugai started a phase I clinical study for the treatment of solid tumors in Japan in July 2017.

CEA-TCB (RG7802)
Anti-CEA/CD3 bispecific antibody

CEA-TCB, a bispecific antibody in-licensed from Roche, is expected to activate T-cells and attack tumor cells by cross-linking CD3 on T-cells to carcinoembryonic antigen (CEA) on tumor cells. With a novel structure engineered to bind simultaneously with one arm to CD3 on T-cells and two arms to CEA on tumor cells, it exhibits higher tumor selectivity and stronger binding to CEA. CEA is reported to be overexpressed in a variety of cancers, including colorectal cancer.

CEA-TCB-mediated intra-tumor T-cell proliferation may yield efficacy in tumor types that are not responsive to current cancer immunotherapies because there are few T-cells in the tumor. In addition, combination immunotherapy of CEA-TCB with Tecentriq is expected to yield a potent antitumor effect in various CEA-positive cancers by inducing further T-cell activation. Chugai has decided to start development of CEA-TCB in Japan.

Bone and Joint Diseases/Autoimmune Diseases

Osteoporosis

Osteoporosis is a disease in which the bones become weak due to advanced age or other factors, increasing the risk of fractures. Osteoporosis patients may incur fractures through normal daily activities. Among these, compression fractures of the spine and femoral neck fractures can decrease quality of life by leaving patients bed-ridden and can also increase mortality risk. About 13 million people in Japan suffer from osteoporosis, including one in every two women age 65 and older. However, the treatment rate stands at around only 20 percent of the estimated number of sufferers because there are virtually no noticeable symptoms until a fracture occurs. The availability of superior new drugs that have higher efficacy, safety and convenience has brought promise for improvement in the quality of life of patients.

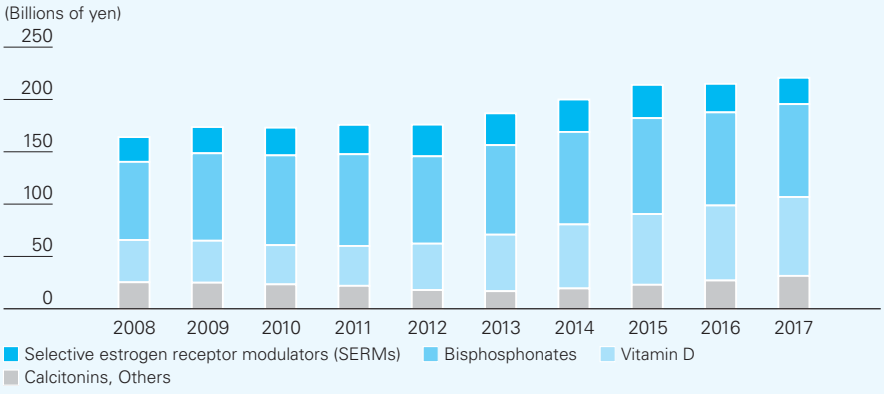
Treatment Methods

Osteoporosis treatments include bisphosphonates, which are bone resorption inhibitors, active vitamin D_3 derivatives, which improve bone metabolism, human parathyroid hormone (PTH), a humanized anti-RANKL antibody, and selective estrogen receptor modulators (SERMs).

Regulatory Trends

National guidelines for osteoporosis treatment were revised in October 2006. Subsequently, advances have been made in basic and clinical research into osteoporosis: evaluation of fracture risk and criteria for the initiation of drug treatment have been reviewed; and osteoporosis caused by lifestyle-related diseases has been addressed. In the interim, Edirol and other medicines have been approved for insurance coverage. Revisions issued in December 2011 added preventive and diagnostic items in light of the importance of early prevention to broaden the overall scope of osteoporosis treatment. Since then, the 2012 revised diagnostic criteria for primary osteoporosis and revised management and treatment guidelines for steroid-induced osteoporosis have been adopted, Bonviva IV Injection and other medicines have been launched and covered by insurance, and revised guidelines were issued in July 2015.

Osteoporosis Market in Japan



Source: JPM 2008-2017

The scope of the market is defined by Chugai.

Edirol
Active vitamin D_3 derivative
(Generic name: eldecalcitol)

Basic Information

Edirol is a vitamin D_3 preparation born out of Chugai's many years of research in vitamin D. Chugai started sales of Edirol in April 2011 as the successor drug to Alfarol for the indication of osteoporosis with a stronger effect in regulating bone metabolism. Under an agreement signed in May 2008, Edirol has been co-developed and is currently co-marketed with Taisho Pharmaceutical Co.,

Ltd. Clinical trials have confirmed that Edirol has a similar safety profile to alfacalcidol with a statistically significant greater effect in preventing fractures. In the 2015 osteoporosis prevention and treatment guidelines, Edirol received a Grade A recommendation, the only one for an active vitamin D_3 preparation, for its effectiveness in increasing bone density and preventing vertebral fractures.

Review of 2017 Performance

Sales of Edirol increased ¥2.9 billion, or 10.9 percent, to ¥29.6 billion. It has become the most widely used active vitamin D_3 preparation because of its superior efficacy in increasing bone mass and preventing fractures compared with existing products. Recognition and understanding of Edirol as a base treatment has also broadened. As a result, its use by medical institutions is increasing, as are prescriptions, primarily for new cases. In China, an application has been filed for approval of Edirol as a treatment for osteoporosis.

Bonviva

Bisphosphonate anti-resorptive agent
(Generic name: ibandronate)

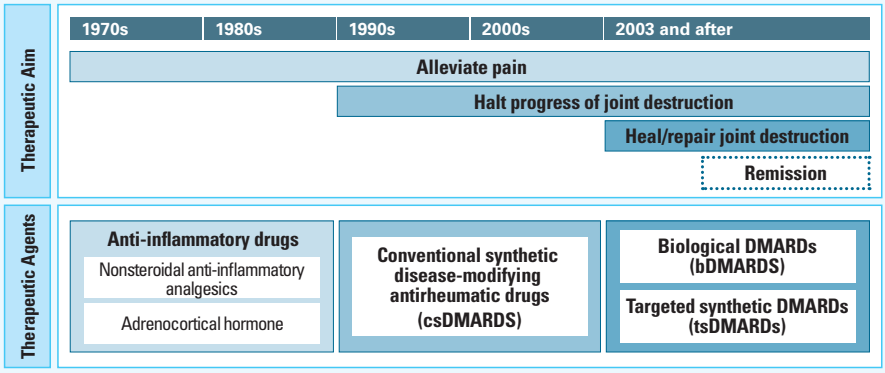
Basic Information

Bonviva is a bisphosphonate in-licensed from Roche. Bonviva IV Injection was launched in August 2013. Under an agreement signed in September 2006, Bonviva is being co-developed and co-marketed with Taisho Pharmaceutical Co., Ltd. Bisphosphonates in Japan are administered in drip infusions, but Bonviva IV Injection is given in a rapid intravenous injection once a month. This is expected to significantly reduce the burden on patients at the time of administration. In addition, Bonviva Tablet administered once monthly demonstrated non-inferiority to Bonviva IV Injection in a phase III clinical trial (the MOVEST study). Chugai obtained approval in January 2016 and began sales in April 2016. By enabling drug selection according to patient lifestyle, monthly Bonviva IV Injection and Bonviva Tablet are expected to help improve patient adherence, convenience for healthcare providers and the rate of continuation of treatment.

Review of 2017 Performance

Sales of Bonviva increased ¥1.4 billion, or 19.2 percent, to ¥8.7 billion. Bonviva IV Injection is particularly convenient for patients who have difficulty taking existing oral formulations, and recognition of the drug's usefulness is increasing as a product that can be expected to improve adherence to treatment.

Changes in Rheumatoid Arthritis Drug Therapy



With the advent of biologics, the aim of therapy for rheumatoid arthritis has shifted to achieving and maintaining remission.

Rheumatoid Arthritis/ Osteoarthritis

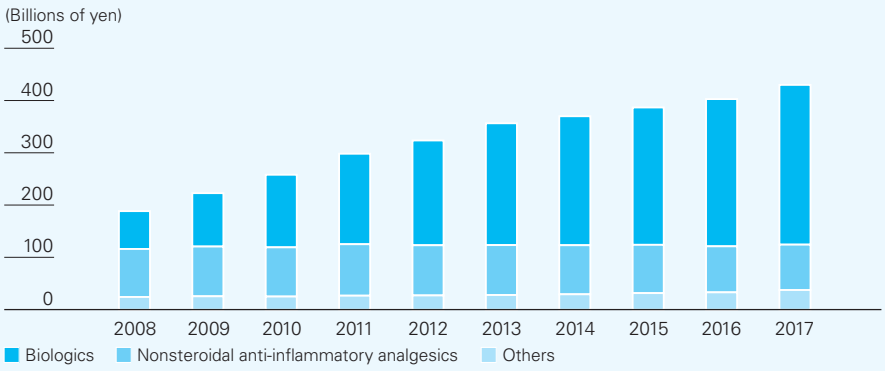
Rheumatoid arthritis (RA) is a systemic disease characterized by painful inflammation and deformation of joints leading to dysfunction. Without appropriate treatment, the patient's condition deteriorates over time. It is estimated that there are about 700,000 patients in Japan suffering from RA, of whom some 330,000 are currently receiving drug treatment. The number of patients is increasing as the average age of the population rises. On the other hand, there are only several hundred patients in Japan with systemic juvenile idiopathic arthritis (sJIA), a form of RA suffered by children below 16 years of age, but sJIA is considered even more difficult to treat than adult forms of the disease. The most common joint disease is osteoarthritis. It leads to degeneration of the cartilage in the joints and surrounding areas, causing joint pain and reduced mobility in daily life. The prevalence of this disease increases with age, with knee osteoarthritis in particular affecting at least 60 percent of people 40 years of age or older, primarily women.

Treatment Methods and Market Conditions

In drug therapy for RA, methotrexate (MTX), an anti-rheumatic drug, is mainly used in treatment, but with the introduction of biologics, the goal of treatment has now been extended to remission. Research in recent years suggests that the administration of biologics at the early onset stage is effective in inhibiting bone and joint damage. The global market for these agents is forecast to reach $25.6 billion* by 2020. The market is also changing. In 2013, a new oral formulation was launched in the United States and Japan, and a biosimilar was launched in Europe. In 2014, a biosimilar was also launched in Japan.

Recently, there has been an increase in drugs offering greater convenience in administration. In addition to drip infusions, which were the only formulations previously available, subcutaneous formulations have been added, and new formulations that improve convenience, such as a dosage form that can be injected simply by pushing a button, are increasing. In Japan, Europe and the United States, the subcutaneous market is estimated to be larger than the intravenous market.

Rheumatoid Arthritis Market in Japan



The scope of the market is defined by Chugai.

New oral drugs called targeted synthetic DMARDs are also gaining attention. There are signs that their efficacy will be similar to that of biological agents, broadening the range of treatment options for RA.

Steroid drugs, which had been the only treatment available for sJIA, can cause growth impairment and other adverse reactions. Accordingly, the approval and launch of Actemra in April 2008 provided a significant advance in therapy.

The main drug therapies for osteoarthritis include non-steroidal anti-inflammatory analgesics, steroids and hyaluronic acid preparations, with intraarticular administration of hyaluronic acid preparations used as a treatment in the early and middle stages. Intraarticular administration of hyaluronic acid preparations has also demonstrated effectiveness in improving periarthritis of the shoulder and knee joint pain associated with rheumatoid arthritis.

* Source: Evaluate Pharma®

Regulatory Trends

In October 2005, MHLW released the Report of the Rheumatism and Allergy Countermeasure Committee. The report calls for the following measures to prevent RA from becoming severe: (1) promotion of early diagnosis and the development of highly effective treatment methods; (2) establishment of medical service systems to provide appropriate care; and (3) improvement of the patient environment, including consultation opportunities and access to information. In Europe, revised treatment recommendations in 2013 added Actemra and Abatacept to the biologic drugs recommended in first-line therapy, which were previously limited to anti-TNF agents. In 2015, a proposed update of clinical practice guidelines was announced at the American College of Rheumatology, with biologics including Actemra added as first-line therapy along with anti-TNF agents. Moreover, the updated European League Against Rheumatism (EULAR) recommendations that were announced in June 2016 state the superiority of biologics in interleukin-6 (IL-6) inhibitor therapy in cases where MTX and other therapies cannot be used.

In recent years, academic societies and other players have been aggressively promoting research, diagnosis and treatment of osteoarthritis as an underlying cause of "locomotive syndrome," a term proposed in the field of orthopedics to designate the condition of individuals at high risk of suffering loss of motor function due to advanced age that leaves them requiring nursing care and bedridden.

Castleman's Disease

Castleman's disease is a lymphoproliferative disease characterized by symptoms such as systemic lymphadenopathy, fever and general fatigue, as well as various abnormal laboratory test values including anemia, hypergammaglobulinemia and hypoalbuminemia. It has been confirmed that these manifestations result from the excessive production of IL-6, one of the cytokines that causes inflammation. Castleman's disease is very rare, affecting approximately 1,500 people in Japan.

Large-Vessel Vasculitis

Large-vessel vasculitis belongs to a group of autoimmune diseases called vasculitis syndromes. It refers to vasculitis in the aorta and the major aortic branches to the limbs and head and neck, and includes Takayasu arteritis and giant cell arteritis (temporal arteritis).

Takayasu arteritis leads to inflammation of the aortic arch and its branch vessels. It affects women more than men, at a ratio of 9:1, and age of onset is between 20 and 50 years. It occurs most commonly in Asia, including Japan, and the Middle East. Initial symptoms include reduced head and cerebral blood flow-related conditions such as dizziness, lightheadedness and headaches, as well as neck pain, chest pain and vascular pain along the limb arteries.

Giant cell arteritis is a granulomatous vasculitis occurring primarily in the aorta and aortic branches, mainly the temporal arteries. It also affects women more than men, at a ratio of 1.6:1, and the age of onset is 55 years or older. It occurs most commonly in Western countries and is rare in Japan. Common initial symptoms include headache, systemic conditions such as fever, and loss of vision.

Systemic Sclerosis

Systemic sclerosis (SSc) is a rare, chronic disorder characterized by blood vessel abnormalities, as well as degenerative changes and scarring in the skin, joints and internal organs. The incidence rate of SSc is difficult to measure, but it is estimated to affect approximately 2.5 million people worldwide, and has the highest fatality rate of any rheumatic disease.

Actemra (MRA/RG1569)

Humanized anti-human IL-6 receptor monoclonal antibody
(Generic name: tocilizumab)

Basic Information

Actemra, created by Chugai and the first therapeutic antibody originating in Japan, blocks the activity of IL-6, a type of cytokine. It was launched in Japan in June 2005 as a treatment for Castleman's disease. In April 2008, Chugai obtained approval in Japan for the additional indications of RA, polyarticular juvenile idiopathic arthritis (pJIA) and sJIA. In May 2013, Chugai launched a new subcutaneous formulation that improves convenience for patients in addition to the existing drip infusion formulation. This subcutaneous formulation includes the first auto-injector in the Japanese RA market.

Actemra is marketed globally through Roche. In Europe, where the medicine is known as RoActemra, sales for the treatment of RA started in 2009. Chugai's marketing subsidiary co-promotes RoActemra with Roche in the United Kingdom, France and Germany. In the United States, Actemra obtained approval in January 2010 for the treatment of adult patients with moderate to severe active RA who have had an inadequate response to one or more TNF antagonist therapies, and obtained approval in October 2012 as a first-line biologic treatment. In Taiwan and South Korea, where Chugai has marketing rights, Actemra obtained approval in July 2011 and April 2012, respectively. Following its launch in Japan, the subcutaneous formulation obtained approval in the United States in October 2013 and in Europe in April 2014, and has been launched in both markets. RoActemra was also approved for early RA in Europe in September 2014.

Furthermore, Actemra obtained approval for the additional indication of treatment of sJIA in the United States in April 2011 and in Europe in August 2011. Actemra also received breakthrough therapy designation from the U.S. FDA in 2015 as a potential treatment for SSc and in 2016 as a treatment for giant cell arteritis. In Japan, Actemra received orphan drug designations as a treatment for large-vessel vasculitis in June 2014 and systemic scleroderma in March 2016.

Review of 2017 Performance

In 2017, sales of Actemra in Japan increased ¥2.9 billion, or 9.6 percent, to ¥33.1 billion, due to steady uptake of both the drip infusion and subcutaneous formulations. Sales of the subcutaneous formulation accounted for more than 40 percent of the total.

Sales of Actemra outside Japan (to Roche) increased ¥0.6 billion, or 1.0 percent, to ¥60.9 billion. At the same time, Roche's

global sales increased 14.0 percent year on year with steady market penetration. In particular, market uptake of the subcutaneous formulation drove growth in the United States and key countries of Europe.

In development, Chugai obtained approval in Japan in June 2017 for an additional dosage and administration of Actemra Subcutaneous Injection, reducing the dose interval to one week in patients with RA who respond inadequately to the previously approved bi-weekly dosing regimen. Actemra also obtained approval for the additional indication of giant cell arteritis in the United States in May 2017 and in Europe in September 2017, and for the additional indications of Takayasu arteritis and giant cell arteritis in Japan in August 2017. In the United States, Actemra obtained approval in August 2017 for the additional indication of chimeric antigen receptor (CAR) T cell-induced cytokine release syndrome. A phase III multinational joint study for the treatment of systemic scleroderma is under way.

RG7845

BTK Inhibitor

RG7845 is an oral, small molecule Bruton's tyrosine kinase (BTK) inhibitor in-licensed from Roche. BTK, a non-receptor tyrosine kinase expressed in B cells and bone marrow, is involved in arteritis and joint destruction associated with RA. RG7845 is expected to improve RA symptoms because it selectively and reversibly binds to the BTK molecule, thereby having an inhibiting effect on its activity. A phase I clinical trial started in June 2017.

Suvenyl

Agent for joint function improvement
(Generic name: sodium hyaluronate)

Basic Information

Suvenyl, a drug that improves joint function through injection into the joint cavity, is a high molecular weight sodium hyaluronate drug that alleviates knee osteoarthritis, shoulder periarthritis and knee joint pain caused by RA. With physical and chemical properties close to that of hyaluronic acid found in the body, Suvenyl has been recognized for its superior performance, including its anti-inflammatory and analgesic effects.

Review of 2017 Performance

Sales decreased ¥0.5 billion, or 5.4 percent, to ¥8.8 billion, due to the impact from competing products and generics. In China, phase III clinical studies are under way for the potential treatment of knee osteoarthritis and shoulder periarthritis.

Neuromyelitis Optica

Neuromyelitis optica (NMO), also known as Devic's disease, is a neurological autoimmune disorder characterized by severe optic neuritis and transverse myelitis. The disease affects 0.3 to 4.4 in 100,000 people, and there are about 4,000 patients in Japan. It is an incurable disease that typically appears around the age of 40 years and affects women more than men, at a ratio of 9:1. Symptoms include loss of vision (blindness) and impairment of motor function and sensation. In some cases, the disease results in death. However, as there are no approved treatments available, NMO is an orphan disease with high unmet medical need. It is believed to occur when aquaporin-4 (AQP4) in the central nervous system is attacked by autoantibodies called anti-AQP4 antibodies.

SA237

Anti-IL-6 receptor humanized monoclonal antibody
(Generic name: satralizumab)

SA237, created by Chugai, is a next-generation therapeutic antibody that has shown success in blocking IL-6 receptors for an extended period of time. Chugai created SA237 by applying its novel antibody technology (Recycling Antibody® technology) that enables a single antibody molecule to block the target antigen repeatedly. Preclinical studies have verified that this extends the duration of the blocking action on IL-6 receptors more than four times longer than Actemra, and an extension of serum half-life has been demonstrated in clinical trials. Because IL-6 promotes the production of the anti-AQP4 antibodies that cause NMO, this drug is expected to improve (reduce recurrence of) the symptoms of this disease as it inhibits the production of those antibodies by blocking the IL-6 signal. A phase III multinational study for the potential treatment of NMO is under way. In addition to its designation as an orphan drug by the U.S. FDA, SA237 was also granted orphan drug designation in Europe in 2016. Furthermore, in June 2016, Chugai concluded a license agreement that grants Roche exclusive rights for the development and marketing of SA237 worldwide, with the exception of Japan, South Korea and Taiwan.

Renal Diseases

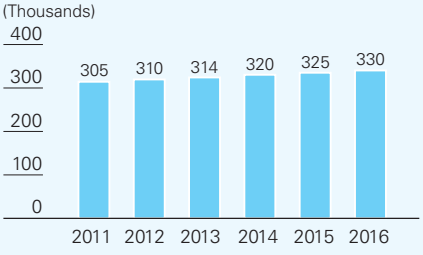
Renal Anemia

Complications of Renal Dysfunction

For dialysis patients and end-stage renal disease patients, the treatment of various complications of advanced renal dysfunction, such as renal anemia, secondary hyperparathyroidism, and abnormal calcium and phosphorus metabolism, is a major issue. Of these complications, renal anemia is one of the most frequent, occurring not only in renal disease patients undergoing dialysis but also in pre-dialysis renal disease patients. Renal anemia, in turn, is thought to be a factor not only in reducing quality of life, but also in the progress of organ damage, including decreased cardiac function.

The importance of treating renal anemia and chronic kidney disease - mineral and bone disorder (CKD-MBD) was indicated in the Guideline for Renal Anemia in Chronic Kidney Disease (2015) and the Clinical Practice Guidelines for the Management of CKD-MBD (2012) issued by the Japanese Society for Dialysis Therapy and in the Evidence-based Practice Guidelines for the Treatment of CKD (2013) issued by the Japanese Society of Nephrology.

Number of Dialysis Patients in Japan



Source: Overview of Regular Dialysis Treatment in Japan (as of December 31, 2016) by Statistical Survey Committee, The Japanese Society for Dialysis Therapy

Erythropoiesis-Stimulating Agent (ESA)

Erythropoietin (EPO) is a hemopoietic factor produced mainly in the kidneys. It speeds up erythrocyte production using erythroid progenitor cells found in bone marrow. An erythropoiesis-stimulating agent (ESA) is effective in treating renal anemia caused primarily by the decline in EPO production due to CKD, and is thought to help improve quality of life. It is estimated that ESAs are currently used by approximately 80 percent of dialysis patients as well as by pre-dialysis renal disease patients with renal anemia. ESAs are thus an essential drug for the treatment of renal anemia.

Flat-Sum Reimbursement System for ESAs

Since the 2006 revisions of medical fees, ESAs have been included in medical fee points for dialysis. The integrated fee points are reviewed with each revision of medical fees.

Mircera

Long-acting erythropoiesis-stimulating agent
(Generic name: epoetin beta pegol)

Basic Information

Mircera is a drug that raises the stability of epoetin beta in the bloodstream through pegylation. It is a new type of renal anemia treatment with the longest serum half-life among ESAs, enabling stable and sustained control of hemoglobin. It stimulates erythropoiesis through a different interaction with the EPO receptor on burst-forming unit erythroid (BFU-E) cells in the bone marrow. Mircera was launched in Japan in July 2011 as a treatment for renal anemia. Outside Japan, Mircera obtained approval in Europe in 2007 and is currently sold in more than 100 countries, including the United States.

The serum half-life of Mircera is virtually the same for intravenous injection or subcutaneous administration, and the drug demonstrates efficacy in relieving the symptoms of anemia when administered at four-week intervals during the maintenance period. Consequently, it may reduce the burden of hospital visits on patients with pre-dialysis renal disease and is expected to contribute to better treatment adherence. Furthermore, as a dialysis-related treatment, Mircera is expected to reduce the burden on medical staff and improve medical safety by dramatically reducing administration frequency. The product thus has the potential to expand the range of options for the treatment of renal anemia.

Review of 2017 Performance

Sales of Mircera decreased ¥0.3 billion, or 1.2 percent, to ¥23.9 billion. The NHI drug price was reduced in the revisions in 2016 because it did not qualify for premium pricing. However, its use is steadily increasing in the renal anemia market, primarily for patients with pre-dialysis renal disease, in whom definite effects can be obtained with administration once every four weeks tailored to the frequency of their hospital visits.

Epogin

Recombinant human erythropoietin agent
(Generic name: epoetin beta)

Basic Information

Epogin is a human erythropoietin agent that uses epoetin beta, produced through Chugai's unique gene recombinant technology, as its main active ingredient. Erythropoietin is effective in improving renal anemia primarily caused by the decline in erythropoietin production due to CKD. It also contributes to the improvement of a wide range of complications arising from anemia. Since its launch in 1990, Epogin has been widely used in the clinical setting for its approved indications of renal anemia under dialysis and before dialysis, anemia of prematurity and autologous blood transfusion of patients scheduled for surgery.

Oxarol

Agent for secondary hyperparathyroidism
(Generic name: maxacalcitol)

Basic Information

Synthesized by Chugai, Oxarol is the first intravenous active vitamin D_3 derivative agent in Japan. It treats secondary hyperparathyroidism, a result of prolonged dialysis, by acting directly on the parathyroid gland with high concentration to control parathyroid hormone synthesis and secretion, and by acting to improve bone metabolism. With its short serum half-life, Oxarol is showing efficacy in patients who could not be treated adequately with oral vitamin D_3 derivatives due to the onset of hypercalcemia.

Review of 2017 Performance

Sales of Oxarol decreased ¥0.9 billion, or 9.9 percent, to ¥8.2 billion due to the impact of intensifying competition with the launch of a generic product and a substantial NHI drug price revision with the return of the premium for new drug creation in 2015.

EOS789

EOS789 is an oral drug created by Chugai with a molecular weight of over 500 g/mol. Following the completion of a phase I clinical trial as a potential treatment for hyperphosphatemia in Japan, a phase I clinical trial for the same indication started overseas in February 2017.

Neurology

Alzheimer's Disease

Alzheimer's disease (AD) is the most common form of dementia. Pathologically, it is a progressive neurodegenerative disease that causes neuron death in the brain and brain atrophy. It leads to a general and progressive loss of memory and other cognitive functions, which can interfere with daily life. While existing AD treatments have some effect in slowing disease progression by several months, they are unable to stop the neuron death, and a treatment for the underlying cause does not yet exist. Consequently, unmet medical need is high, and there is strong demand for a more effective drug.

RG1450

Anti-amyloid-beta human monoclonal antibody
(Generic name: gantenerumab)

RG1450 is an anti-amyloid-beta human monoclonal antibody in-licensed from Roche. The drug targets aggregate amyloid beta, with a high binding affinity to plaques in particular. It is expected to improve cognition by removing amyloid beta in the brain. A phase III multinational study of RG1450 as a potential treatment for AD is under way.

RG7412

Anti-amyloid-beta humanized monoclonal antibody
(Generic name: crenezumab)

RG7412 is an anti-amyloid-beta humanized monoclonal antibody in-licensed from Roche. The drug targets all types of amyloid beta, with a high binding affinity to oligomers. It is expected to improve cognition by removing amyloid beta in the brain. A phase III multinational study of RG7412 as a potential treatment for AD began in March 2017.

Spinal Muscular Atrophy

Spinal muscular atrophy (SMA) is a lower motor neuron disease characterized by amyotrophy and progressive muscle weakness caused by degeneration of anterior horn cells in the spinal cord. The estimated number of patients in Japan is reported to be around 1,000. The disease is caused by a defect in the *SMN1* gene, and onset usually occurs in childhood. In severe cases it is fatal.

RG7916

SMN2 splicing modifier

RG7916 is an SMN2 splicing modifier that increases generation of a protein derived from the *SMN2* gene. This protein is nearly identical to the protein made from the *SMN1* gene, which is not functional in SMA patients. RG7916 shows promise in improving neural and muscular function. A phase I clinical trial of RG7916 began in March 2017, and a phase II multinational study began in November 2017.

Duchenne Muscular Dystrophy

Duchenne muscular dystrophy (DMD) is a fatal hereditary disease primarily characterized by degeneration, necrosis and regeneration of the skeletal muscles, with progressive muscle weakness as the clinical symptom. It is caused by a mutation of the dystrophin gene located on the X chromosome. In Japan, such mutations have been reported to be the cause in approximately 40 percent of patients. It affects one in 3,000 to 4,000 males at birth, and the estimated number of patients in Japan is between 4,000 and 5,000. At present, steroid therapy is the only approved treatment available in Japan, but it has been recognized that life expectancy and quality of life have improved due to progress in breathing control methods such as non-invasive positive-pressure ventilation.

RG6206

Anti-myostatin-inhibiting adnectin fusion protein

RG6206 is a recombinant protein with two anti-myostatin adnectin molecules binding to the human IgG1 Fc fragment. Myostatin is a cell growth inhibitor that negatively regulates skeletal muscle mass. By lowering the level of active, free serum myostatin, RG6206 is expected to have therapeutic effects including maintenance of muscular strength associated with an increase in skeletal muscle mass. A phase II/III multinational clinical study started in November 2017.

Other Diseases

Influenza

Influenza is an acute infectious disease characterized by the rapid onset of high fever (38 degrees centigrade or more) and severe systemic symptoms. It is highly infectious, and epidemics can develop quickly. In some cases, secondary infections can lead to very serious illness and death. Influenza is classified into types A, B and C based on differences in the antigenicity of the underlying virus. Types A and B can infect humans and cause major outbreaks.

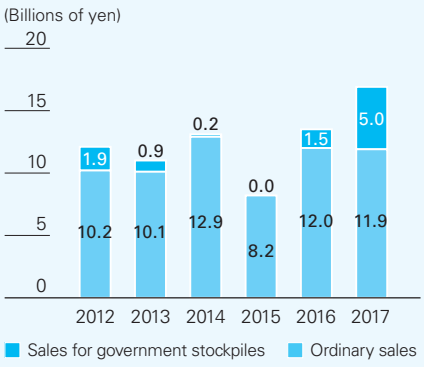
Tamiflu

Anti-influenza agent
(Generic name: oseltamivir phosphate)

Basic Information

Tamiflu is an oral anti-influenza agent that is effective against both type A and type B infections. It inhibits viral replication by blocking the action of neuraminidase, an enzyme essential for the multiplication of the influenza virus. Launched in capsule form in February 2001 and dry syrup form in July 2002, dosages are available for patients one year of age and older. Since March 2007, restrictions on the use of Tamiflu in teenage patients with seasonal influenza have been in force in Japan. The measure was introduced as a safety precaution following several reports of abnormal behavior in influenza patients who had taken Tamiflu. The report of an epidemiological survey with 10,000 flu patients conducted by a working group of MHLW suggested that there are no findings to date that point to a causal association between Tamiflu and the abnormal behavior of patients taking the drug. MHLW has concluded that it is appropriate to continue to take precautions and other measures, and is thus continuing the restriction on the use of Tamiflu. New research investigating the relationship between abnormal behavior and the use of Tamiflu began in 2016. The shelf life of Tamiflu capsules was extended to 10 years from seven years for capsules manufactured after July 2013, and the shelf life of dry syrup was extended to 10 years starting with the portion shipped in 2015.

Tamiflu Sales



Review of 2017 Performance

Sales of Tamiflu increased ¥3.4 billion, or 25.2 percent, to ¥16.9 billion. Ordinary sales were ¥11.9 billion, while sales for government stockpiles were ¥5.0 billion. Chugai continued to highlight the drug's efficacy and the benefits of its unique dry syrup formulation. In March 2017, Chugai obtained approval for additional dosage and administration of Tamiflu Dry Syrup 3% for neonates and infants younger than 12 months.

CellCept

Immunosuppressant
(Generic name: mycophenolate mofetil)

Sales of CellCept, an immunosuppressant, increased ¥1.0 billion, or 12.7 percent, to ¥8.9 billion. CellCept is used to treat refractory rejection after kidney transplants and to prevent rejection after kidney, heart, liver, lung and pancreas transplants. The need for transplantation medication has been rising in Japan, driven by advances in transplantation therapy. In May 2016, CellCept received approval for the indication of lupus nephritis, a refractory disease associated with the autoimmune disease systemic lupus erythematosus.

Hemophilia

Hemophilia is a disease that leads to bleeding in the joints, muscles and other areas in the body due to a congenital deficiency or abnormal function of blood coagulation factors. A low level or absence of blood coagulation factor VIII is known as hemophilia A, while a low level or absence of blood coagulation factor IX is referred to as hemophilia B. Treatment is centered on replacement therapy to supplement factor VIII or IX. However, since it involves intravenous injections two to three times a week, treatment is a significant burden, particularly on children. Moreover, patients must be monitored for the development of autoantibodies, called inhibitors, to the supplemented factor. Patients with inhibitors are treated by means such as bypass therapy or immune tolerance therapy, but these therapies are limited in terms of convenience and the stability of their effects. A more useful treatment method is therefore needed.

Hemlibra (ACE910/RG6013)

Anti-factor IXa/X bispecific antibody
(Generic name: emicizumab)

Hemlibra is an anti-factor IXa/X bispecific antibody that employs Chugai's innovative antibody engineering technologies. Like factor VIII, Hemlibra simultaneously binds to factor IXa and factor X, stimulating the activation of factor X by activated factor IX and promoting normal blood coagulation. Unaffected by inhibitors, Hemlibra is expected to prevent bleeding with once weekly (or less-frequent) subcutaneous injections.

Hemlibra was granted orphan drug designation for the potential treatment of hemophilia A with inhibitors in the United States in January 2014. Chugai concluded an out-licensing agreement with Roche in July 2014 and in May 2017 entered into a license agreement with JW Pharmaceutical Corporation for the exclusive marketing rights in South Korea. The drug received breakthrough therapy designation from the U.S. FDA in September 2015 for its potential to prevent bleeding in hemophilia patients with inhibitors. In a phase III multinational study on adult and adolescents with inhibitors that began in November 2015, a statistically significant reduction in the number of bleeds was confirmed in patients who received Hemlibra prophylaxis. Phase III multinational studies also began on pediatric patients with inhibitors in July 2016, and showed a clinically significant reduction in the bleeding rate. Based on the results of these two studies, applications for approval for the treatment of hemophilia A (with inhibitors) were filed in the United States and Europe in June 2017 and in Japan in July 2017. In the United States, Hemlibra received priority review designation in August 2017, and in November 2017 obtained approval for routine prophylaxis with once-weekly subcutaneous administration in adult and pediatric patients with hemophilia A with factor VIII inhibitors. Hemlibra was also granted accelerated assessment in Europe, and received regulatory approval from the European Commission in February 2018 for routine prophylaxis of bleeding episodes in patients with hemophilia A with factor VIII inhibitors. In Japan, Hemlibra is being reviewed under orphan drug designation (as of February 28, 2017). At the same time, the results of a phase III multinational study that began in September 2016 on patients without inhibitors confirmed a statistically significant reduction in the bleeding rate in patients who received Hemlibra prophylaxis (November 2017). In addition, the results of an interim analysis of a phase III multinational study to evaluate a dosing schedule of once every four weeks for people with and without inhibitors, which began in January 2017, showed a positive reduction of the bleeding rate with Hemlibra prophylaxis dosed once every four weeks (December 2017). Presentation of the results of these latter two phase III studies is planned at major scientific conferences in 2018. In addition, filings of applications for approval of additional indications and effects, and additional dosages and administration based on the results of these studies are planned in Japan, the United States, Europe and elsewhere in 2018.

Hemlibra has the potential to change the existing therapeutic system. Another key feature of this drug is that Chugai's proprietary ART-Ig technology can be applied to enable commercial-scale production of bispecific antibodies.

Atopic Dermatitis

A type of allergic disorder, atopic dermatitis is a chronic skin disease characterized by an itchy rash that alternately improves and worsens. Scratching the affected area exacerbates the skin symptoms and makes the itching worse, leading to an itch-scratch cycle. The basic treatment is drug therapy using topical steroid preparations and/or topical immunosuppressants to control the inflammation and a skin care regimen to prevent the inflammation from recurring.

Pruritus in Dialysis Patients

Pruritus is a complication found in more than 40 percent of dialysis patients. Various factors are thought to play complex roles in development of the condition, including skin dryness, accumulation of uremic toxins, secondary hyperparathyroidism, complement activation by dialysis membranes, the effect of heparin, and itch mediators. It is systemic and refractory, and the degree, site and timing of itching vary by patient. The itching not only reduces quality of life due to discomfort and sleeplessness, but is also reported to be involved in life expectancy.

CIM331

Anti-IL-31 receptor A humanized monoclonal antibody
(Generic name: nemolizumab)

Nemolizumab (CIM331) is an anti-IL-31 receptor A humanized monoclonal antibody originating from Chugai. The drug is expected to suppress itching in atopic dermatitis and reduce skin inflammation by blocking IL-31, a proinflammatory cytokine, from binding to its receptor. Chugai conducted a phase II multinational study in Japan, the United States and Europe. In March 2017, it was announced in the *New England Journal of Medicine* that efficacy and tolerability at 12 weeks of treatment had been observed.

A phase II clinical study of CIM331 as a potential treatment for pruritus in dialysis patients has been completed.

In July 2016, Chugai entered into a global license agreement granting Galderma S.A. of Switzerland exclusive rights for the development and marketing of nemolizumab worldwide, with the exception of Japan and Taiwan. In September 2016, Chugai entered into a license agreement granting Maruho Co., Ltd. the rights for the development and marketing of nemolizumab in the skin disease area for the Japanese market. Clinical trials by both companies are currently under way.

Paroxysmal Nocturnal Hemoglobinuria (PNH)

PNH is a disorder that leads to complications such as thrombosis and CKD, in addition to anemia and dark brown urine caused by hemolysis as well as infections and bleeding tendency associated with a decrease in white blood cells and platelets. An acquired genetic mutation affecting hematopoietic stem cells causes the creation of red blood cells that have no complement resistance, and hemolysis occurs when complements are activated in vivo. While there are only an estimated 430 patients suffering from PNH in Japan, it is a progressive disease with a high risk of mortality. The drug approved in Japan to suppress hemolysis in patients who need blood transfusions must be administered once every two weeks, requiring regular hospital visits due to the seriousness of the disease.

SKY59

Anti-C5 recycling antibody

SKY59 is a recycling antibody discovered by Chugai that inhibits the C5 complement component. By blocking cleavage of C5 to C5a and C5b, it is expected to inhibit complement activation, which is the cause of a number of diseases. In PNH, SKY59 may have a suppressive effect on hemolysis by preventing the destruction of red blood cells. Application of multiple Chugai proprietary antibody engineering technologies resulted in a prolonged half-life (in preclinical trials), and the antibody is being developed as a subcutaneous self-injection. Chugai is co-developing SKY59 with Roche, and a phase I/II multinational study began in November 2016. In September 2017, SKY59 received orphan drug designation in the United States as a potential treatment for PNH.

Idiopathic Pulmonary Fibrosis

Idiopathic pulmonary fibrosis (IPF) is a chronic and progressive lung disease of unknown cause and poor prognosis in which extensive fibrosis results in irreversible honeycomb lung. It is a fatal disease, with a five-year survival rate of around 50 percent. The goal of treatment is to slow the progression of the disease. Currently, only two drugs, pirfenidone and nintedanib, are approved for the treatment of this disease, but considering their side effects and efficacy, IPF remains a disease with high unmet medical need.

RG3637

Anti-IL-13 humanized monoclonal antibody (Generic name: lebrikizumab)

RG3637 is an anti-IL-13 humanized monoclonal antibody in-licensed from Roche. A phase II multinational study as a potential treatment for IPF is under way.

Gout

Gout occurs when uric acid crystals are deposited in the joints due to prolonged high levels of serum uric acid (hyperuricemia), causing inflammation. The peak age of onset is becoming younger, and has shifted from the 50s to the 30s. The number of patients with hyperuricemia, the underlying cause of gout, has been increasing annually, and as many as 5 million people are estimated to be at risk for gout in Japan.

URC102

URAT1 inhibitor

URC102 is a URAT1 inhibitor discovered at C&C Research Laboratories, a joint venture between Chugai and JW Pharmaceutical Corporation of South Korea. It is an oral small molecule uricosuric agent expected to be effective against gout. This compound is expected to reduce the level of serum uric acid by promoting its excretion through inhibition of URAT1. URC102 is being co-developed with JW Pharmaceutical, and a phase II clinical trial has been completed.

wAMD/DME

Wet age-related macular degeneration (wAMD) is a disease in which abnormal blood vessel growth (choroidal neovascularization) caused by age-related accumulation of waste products extends into the space under the retinal pigment epithelium (RPE) or between the retina and the RPE, leading to retinal tissue injury. If the choroidal neovascularization and the associated effusion progress into the fovea centralis, which governs vision, it may lead to deterioration of visual acuity along with the symptoms of image distortion, vision loss and central scotoma. Left untreated, wAMD may lead to irreversible visual impairment.

Diabetic macular edema (DME) is a retinal disease associated with diabetic retinopathy. In diabetes, consistently high blood sugar causes blockage of retinal capillaries, ischemic change, and edema induced by vascular hyperpermeability. Blurred vision occurs when swelling extends to the central part of the macula, which governs vision. Left untreated, DME may lead to irreversible visual impairment.

RG7716

Anti-VEGF/Ang-2 bispecific antibody

RG7716, which Chugai in-licensed from Roche, is the first bispecific antibody for ophthalmology diseases. It selectively binds to vascular endothelial growth factor (VEGF-A), a key mediator of angiogenesis and vascular permeability, and angiopoietin-2 (Ang-2, an antagonist of Ang-1, which contributes to the stability of mature vessels), a destabilizer of chorioretinal vessels and inducer of vascular permeability. By simultaneously neutralizing intraocular VEGF-A and Ang-2 in wAMD and DME patients, RG7716 is expected to demonstrate better treatment outcomes and a more sustained effect than the anti-VEGF drugs that are the current standard of care. A phase I clinical trial began in September 2017.

10-Year Financial Summary

Chugai Pharmaceutical Co., Ltd. and Consolidated Subsidiaries/Years ended December 31

International Financial Reporting Standards (IFRS)	2017		2016		2015		2014	
	IFRS	Core[1]	IFRS	Core[1]	IFRS	Core[1]	IFRS	Core[1]
Results								
Revenues[2]	534.2		491.8		498.8		461.1	
Sales	499.3		472.7		468.4		436.9	
Royalties and other operating income	34.9		19.1		30.4		24.2	
Cost of sales	(254.2)	(252.9)	(247.9)	(246.7)	(240.2)	(238.9)	(218.1)	(217.0)
Operating expenses	(181.1)	(178.1)	(167.0)	(164.5)	(171.8)	(169.3)	(167.2)	(166.8)
Marketing and distribution	(72.8)	(72.8)	(69.8)	(69.8)	(74.8)	(74.7)	(71.7)	(71.7)
Research and development	(92.9)	(88.9)	(85.0)	(82.6)	(83.8)	(81.9)	(80.8)	(80.6)
General and administration	(15.3)	(16.3)	(12.2)	(12.1)	(13.2)	(12.8)	(14.6)	(14.6)
Operating profit	98.9	103.2	76.9	80.6	86.8	90.7	75.9	77.3
Profit before taxes	97.0	101.3	74.4	78.1	87.3	91.2	76.2	77.6
Net income	73.5	76.7	54.4	56.8	62.4	64.9	52.1	53.0
Attributable to Chugai shareholders	72.7	75.9	53.6	56.1	61.1	63.7	51.0	51.9
Core EPS (Yen)	—	138.68	—	102.50	—	116.42	—	95.04
Cash dividends per share (Yen)	62		52		58		48	
Core payout ratio	—	44.7%	—	50.7%	—	49.8%	—	50.5%
Financial Position								
Net operating assets	440.2		431.1		380.4		357.7	
Total assets	852.5		806.3		787.4		739.5	
Total liabilities	(159.6)		(159.8)		(160.1)		(141.8)	
Total net assets	692.9		646.5		627.3		597.8	
Investments in property, plant and equipment	34.3		19.4		28.7		16.3	
Depreciation	14.5		14.8		14.0		13.7	
Main Indicators								
Ratio of cost of sales to sales	50.9%	50.7%	52.4%	52.2%	51.3%	51.0%	49.9%	49.7%
Ratio of operating profit to revenues	18.5%	19.3%	15.6%	16.4%	17.4%	18.2%	16.5%	16.8%
Ratio of research and development expenditures to revenues	17.4%	16.6%	17.3%	16.8%	16.8%	16.4%	17.5%	17.5%
Ratio of net income to equity attributable to Chugai shareholders (ROE)[3]	10.9%	—	8.4%	—	10.0%	—	8.7%	—
Ratio of profit before taxes to total assets (ROA)[4]	11.7%	—	9.3%	—	11.4%	—	10.6%	—
Equity per share attributable to Chugai shareholders (BPS) (Yen)	1,265.46	—	1,181.67	—	1,146.17	—	1,092.90	—
Ratio of equity attributable to Chugai shareholders	81.2%	—	80.1%	—	79.5%	—	80.6%	—
Number of employees	7,372		7,245		7,169		7,023	

1. Core basis results are the results after adjusting non-Core items to IFRS basis results. Core basis results are used by Chugai as internal performance indicators, for representing recurring profit trends both internally and externally, and as indices for establishing profit distributions such as returns to shareholders.
2. Revenues do not include consumption tax.
3. Ratio of net income to equity attributable to Chugai shareholders (ROE) = Net income attributable to Chugai shareholders / Capital and reserves attributable to Chugai shareholders (average of beginning and end of fiscal year)
4. Ratio of profit before taxes to total assets (ROA) = Profit before taxes / Total assets (average of beginning and end of fiscal year)

(Billions of yen)

2013		2012	
IFRS	Core[1]	IFRS	Core[1]
423.7		386.6	
401.3		375.2	
22.4		11.3	
(187.0)	(186.1)	(168.2)	(167.3)
(157.9)	(157.7)	(143.7)	(143.7)
(71.6)	(71.5)	(67.9)	(67.9)
(74.3)	(74.1)	(66.6)	(66.6)
(12.1)	(12.1)	(9.2)	(9.2)
78.7	79.9	74.7	75.6
76.9	78.1	72.7	73.6
51.9	52.6	46.8	47.4
50.9	51.6	46.1	46.6
—	94.69	—	85.64
45		40	
—	47.5%	—	46.7%
325.2		307.9	
697.2		645.3	
(124.0)		(116.2)	
573.2		529.2	
13.0		14.2	
13.5		13.3	
46.6%	46.4%	44.8%	44.6%
18.6%	18.9%	19.3%	19.6%
17.5%	17.5%	17.2%	17.2%
9.3%	—	9.0%	—
11.5%	—	11.8%	—
1,049.47	—	970.08	—
82.0%	—	81.8%	—
6,872		6,836	

(Billions of yen)

Japanese GAAP	2012	2011	2010	2009	2008
Results					
Revenues[1]	391.2	373.5	379.5	428.9	326.9
Sales	375.2	363.6	375.6	419.1	321.8
Other operating revenues	16.0	9.9	3.9	9.8	5.1
Cost of sales	167.7	157.5	162.4	192.9	127.0
Selling, general and administrative expenses	147.1	153.6	150.9	153.5	148.3
Marketing and distribution expenses	92.0	97.7	96.2	98.2	95.1
Research and development expenditures	55.1	55.9	54.7	55.3	53.2
Operating income	76.4	62.4	66.2	82.6	51.6
Net income (loss)	48.2	35.2	41.4	56.6	39.3
Net income per share (basic) (Yen)	88.58	64.75	76.14	104.00	72.07
Net income per share (diluted) (Yen)	88.54	64.72	76.12	103.98	72.04
Cash dividends per share (Yen)[2]	40	40	40	40	34
Payout ratio	45.2%	61.8%	52.5%	38.5%	47.2%
Financial Position					
Total assets	587.7	533.5	508.0	540.5	478.5
Total net assets[3]	490.1	459.1	449.4	434.7	397.1
Capital investments	14.2	11.9	12.7	14.6	26.6
Depreciation and amortization	15.3	15.9	18.0	19.5	20.1
Main Indicators					
Ratio of cost of sales to revenues	44.7%	43.3%	43.2%	46.0%	39.5%
Ratio of operating income to revenues	19.5%	16.7%	17.4%	19.3%	15.8%
Ratio of research and development expenditures to revenues	14.1%	15.0%	14.4%	12.9%	16.3%
Return on equity[4]	10.2%	7.8%	9.4%	13.7%	10.1%
Return on assets[5]	8.6%	6.8%	7.9%	11.1%	8.4%
Net assets per share (Yen)	896.02	839.50	821.87	794.51	725.18
Shareholders' equity to total assets	83.0%	85.6%	88.0%	80.0%	82.6%
Number of employees	6,836	6,779	6,709	6,485	6,383

1. Revenues do not include consumption tax.
2. Cash dividends per share for 2009 include a special year-end dividend of ¥6 per share.
3. Net assets include minority interests.
4. Return on equity = Net income / Shareholders' equity (average of beginning and end of fiscal year)
5. Return on assets = Net income / Total assets (average of beginning and end of fiscal year)

Management's Discussion and Analysis

Management Policies

Based on its strategic alliance with Roche, Chugai's mission is to dedicate itself to adding exceptional value through the creation of innovative medical products and services for the benefit of the medical community and human health around the world. Our primary management goal is to become a top pharmaceutical company capable of continuously delivering innovative drugs in Japan and internationally as a leading member of the Roche Group. We have been working to fulfill this mission and achieve our goal by leveraging our close relationship with Roche and building systems capable of efficiently and continuously developing and marketing new drugs. We have also innovated by refining our strengths to attain leading-edge drug discovery technology and maintain the top share of the domestic oncology area.

Under our previous mid-term business plan, ACCEL 15, we generated top-class growth in Japan underpinned by several innovative new drugs and expanded our leading share of the domestic oncology market. However, in mid-term business plan IBI 18, Chugai is aiming to transform into a company that continues to make progress globally through its competitive advantages that leverage its strategic alliance with Roche. The quantitative outlook through the final year of the plan is a compound annual growth rate for Core EPS in the low single digits (less than 4 percent) based on average exchange rates for 2015. Chugai aims for a consolidated dividend payout ratio that averages 50 percent of Core EPS to provide a stable allocation of profit to all shareholders.

Overview of Results

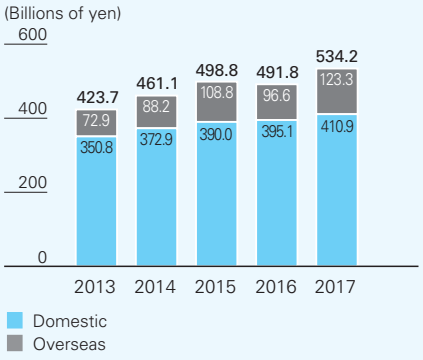
Revenues

(Billions of yen)

	2015	2016	2017	2016/2017 Change
Revenues	498.8	491.8	534.2	+8.6%
Sales	468.4	472.7	499.3	+5.6%
Royalties and other operating income	30.4	19.1	34.9	+82.7%

- In 2017, in addition to the sales growth of core products in Japan, which more than offset the impact of the NHI drug price revisions, and an increase in exports of Alecensa to Roche, royalties and other operating income also increased. As a result, revenues exceeded the level of the previous year.
- Royalties and other operating income increased year on year due to factors including steady revenue from Actemra, as well as an increase in one-time milestone income.

Revenues



Domestic Sales by Area

(Billions of yen)

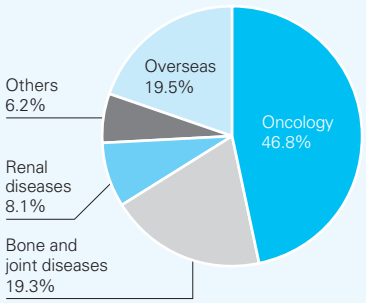
	2015	2016	2017	2016/2017 Change
Domestic sales (excluding Tamiflu)	378.0	379.7	388.4	+2.3%
Oncology	215.7	220.3	225.9	+2.5%
Bone and joint diseases	79.4	86.1	93.3	+8.4%
Renal diseases	45.4	41.1	39.3	-4.4%
Others	37.6	32.2	29.9	-7.1%
Tamiflu sales	8.2	13.5	16.9	+25.2%
Ordinary sales	8.2	12.0	11.9	-0.8%
Sales for government stockpiles	0.0	1.5	5.0	+233.3%

Note: Sales of the transplant, immunology and infectious diseases area, which were disclosed separately up until 2016, were disclosed in Others from 2017. Figures for 2015 and 2016 have been restated accordingly.

- Domestic sales (excluding Tamiflu) increased year on year, led by firm sales of mainstay products in the areas of oncology and bone and joint diseases, although the NHI drug price revisions in the previous year had an impact on sales in the first quarter.
- During 2017, we maintained our number-one share of the domestic oncology market (20.2 percent),* as sales of major products such as Alecensa, which has continued strong growth since its launch in 2014, and Rituxan increased steadily.
- In the bone and joint diseases area, Edirol, which has become a top brand in the domestic market for oral therapeutic agents for osteoporosis, drove solid growth, along with other major products including Actemra and Bonviva.

Percentage of Total Sales (Excluding Tamiflu)

(2017)



* Copyright © 2018 IQVIA.
Source: JPM 2017. Reprinted with permission. The scope of the market is defined by Chugai.

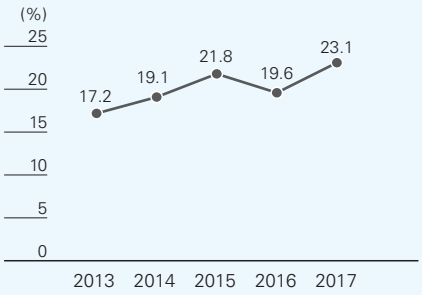
Overseas Sales

(Billions of yen)

	2015	2016	2017	2016/2017 Change
Overseas sales	82.2	79.5	94.0	+18.2%
Actemra (exports to Roche)	62.6	59.1	59.4	+0.5%
Alecensa (exports to Roche)	0.5	3.7	13.9	+275.7%

- Overseas sales increased year on year in 2017. Contributing factors included increased exports of Alecensa to Roche, reflecting strong sales in Europe and the United States. However, sales of Actemra increased only slightly because the increase in sales volume was offset by the negative effect of exchange rates.

Overseas Sales Ratio



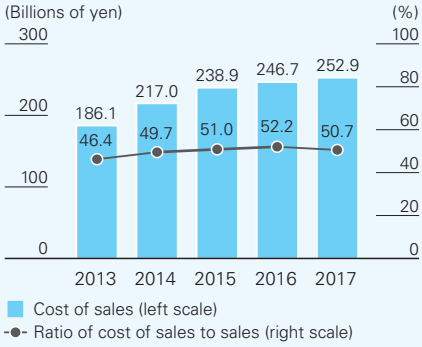
Cost of Sales (Core basis)

(Billions of yen)

	2015	2016	2017	2016/2017 Change
Cost of sales	(238.9)	(246.7)	(252.9)	+2.5%
Ratio of cost of sales to sales	51.0%	52.2%	50.7%	-1.5% pts

- The ratio of cost of sales to sales decreased year on year in 2017, mainly because Chugai products, which have a lower cost-to-sales ratio than products in-licensed from Roche, accounted for a higher percentage of the sales mix.

Cost of Sales/Ratio of Cost of Sales to Sales



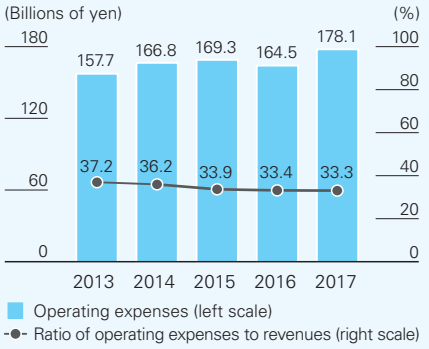
Operating Expenses (Marketing and Distribution Expenses, R&D Expenditures and General and Administration Expenses) (Core Basis)

(Billions of yen)

	2015	2016	2017	2016/2017 Change
Total operating expenses	(169.3)	(164.5)	(178.1)	+8.3%
Marketing and distribution expenses	(74.7)	(69.8)	(72.8)	+4.3%
R&D expenditures	(81.9)	(82.6)	(88.9)	+7.6%
General and administration expenses	(12.8)	(12.1)	(16.3)	+34.7%

- Marketing and distribution expenses increased year on year in 2017 because of an increase in promotional activities and other factors.
- R&D expenditures increased year on year due to factors including increased R&D activities and changes in classification of expenses due to organizational changes.
- General and administration expenses increased year on year due to an increase in expenses including corporate taxes (pro forma standard taxation).

Operating Expenses/ Ratio of Operating Expenses to Revenues



Operating Profit and Net Income (Core Basis)

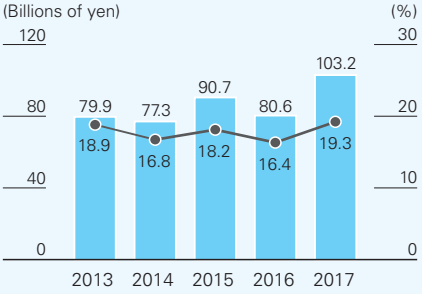
(Billions of yen)

	2015	2016	2017	2016/2017 Change
Operating profit	90.7	80.6	103.2	+28.0%
Ratio of operating profit to revenues	18.2%	16.4%	19.3%	+2.9% pts
Net income	64.9	56.8	76.7	+35.0%
Net income attributable to Chugai shareholders	63.7	56.1	75.9	+35.3%

- Operating profit increased year on year in 2017 because royalties and other operating income increased and cost of sales decreased due to the higher percentage of Chugai products in the sales mix, causing the ratio of operating profit to revenues to increase as well.
- Net income in 2017 increased year on year because the tax rate decreased due to changes in the taxation system.

Note: Chugai filed an Advance Pricing Arrangement covering certain transactions with F. Hoffmann-La Roche Ltd. with Japanese and Swiss tax authorities, but received a notice of agreement in the first quarter of 2017 indicating that the arrangement will decrease taxable income by a certain amount for Chugai and increase it by an equivalent amount for Roche in the fiscal years from 2016 to 2020, and that an additional adjustment will be made in 2021 if necessary. As a result of this agreement, Chugai will transfer a part of the reduction in corporate tax, etc. to Roche in the amount of the estimated tax payable for Roche, in accordance with the license agreement between Chugai and Roche, and recognized a ¥1,706 million adjustment from transfer pricing taxation, including the reduction associated with the estimated amount recorded in the previous year.

Operating Profit/ Ratio of Operating Profit to Revenues

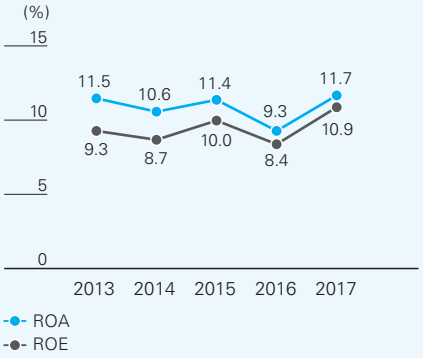


Profitability Indicators (Consolidated)

	2015	2016	2017	2016/2017 Change
Gross profit to revenues (%) (Core)	52.1	49.8	52.7	+2.9% pts
Operating profit to revenues (%) (Core)	18.2	16.4	19.3	+2.9% pts
Ratio of profit before taxes to total assets (ROA[1]) (%) (IFRS)	11.4	9.3	11.7	+2.4% pts
Ratio of net income attributable to Chugai shareholders (ROE[2]) (%) (IFRS)	10.0	8.4	10.9	+2.5% pts

1. ROA = Profit before taxes / Total assets (average of beginning and end of fiscal year)
2. ROE = Net income attributable to Chugai shareholders / Capital and reserves attributable to Chugai shareholders (average of beginning and end of fiscal year)

ROA/ROE



Financial Position

Assets, Liabilities and Net Assets

In conjunction with its decision to apply IFRS from 2013, Chugai has reorganized the consolidated balance sheets and discloses assets and liabilities including net operating assets for use as internal performance indicators (Roche discloses the same indicators). No items have been excluded from the IFRS balance sheet, as the Core basis results concept only applies to the income statement.

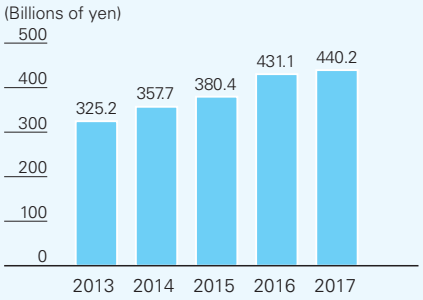
(Billions of yen)

Net Operating Assets (NOA)

	2015	2016	2017	2016/2017 Change
Net working capital	214.6	258.5	250.7	-3.0%
Long-term net operating assets	165.8	172.7	189.5	+9.7%
Net operating assets (NOA)	380.4	431.1	440.2	+2.1%

- Net working capital at December 31, 2017 decreased from a year earlier partly because of the absence of the effect of inventories, which increased in the previous year as Chugai prepared for expansion of global demand.
- Long-term net operating assets increased from a year earlier because of an increase in investments in property, plant and equipment, including the antibody API manufacturing facility UK3 for handling high-mix, low-volume production.
- As a result, net operating assets (NOA) increased from a year earlier due to factors including investments for the future.

Net Operating Assets



Net operating assets are the total of net working capital and long-term net operating assets. Net working capital is composed of accounts receivable, inventories, accounts payable and other payables and receivables. Long-term net operating assets are composed of property, plant and equipment, intangible assets, and other items.

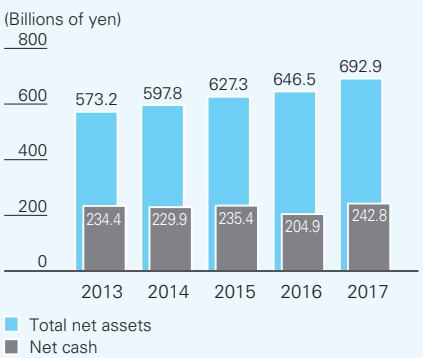
Total Net Assets

(Billions of yen)

	2015	2016	2017	2016/2017 Change
Net operating assets (NOA)	380.4	431.1	440.2	+2.1%
Net cash	235.4	204.9	242.8	+18.5%
Other non-operating assets – net	11.5	10.5	9.9	-5.7%
Total net assets	627.3	646.5	692.9	+7.2%

- Total net assets at December 31, 2017 increased from a year earlier due to factors including construction of the antibody API manufacturing facility UK3 for handling high-mix, low-volume production.
- Despite aggressive investments for future growth, net cash has stayed above ¥200.0 billion for the past five years as Chugai's ability to generate cash has remained high.

Total Net Assets/Net Cash



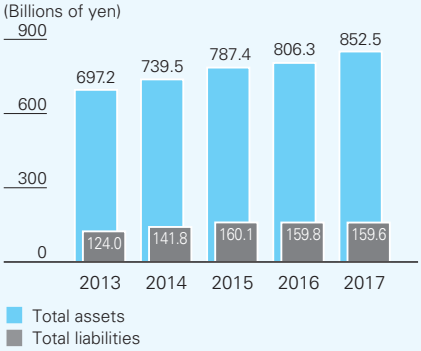
Total Assets and Total Liabilities

(Billions of yen)

	2015	2016	2017	2016/2017 Change
Total assets	787.4	806.3	852.5	+5.7%
Total liabilities	(160.1)	(159.8)	(159.6)	-0.1%

- Looking at the components of total assets, total liabilities and total net assets, total liabilities at December 31, 2017 did not change significantly from a year earlier, and total assets and total net assets increased from a year earlier.

Total Assets/Total Liabilities

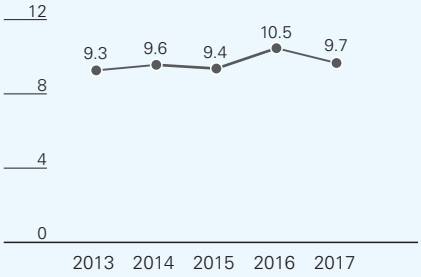


Financial Position Indicators

	2015	2016	2017	2016/2017 Change
Ratio of equity attributable to Chugai shareholders (%)	79.5	80.1	81.2	+1.1% pts
Core return on net operating assets (%)	17.1	13.2	17.4	+4.2% pts
Cash conversion cycle (months)	9.4	10.5	9.7	-0.8 months
Net cash turnover period (months)	5.7	5.0	5.5	+0.5 months
Current ratio (%)	426.7	468.0	487.5	+19.5% pts
Debt-to-equity ratio (%)	0.1	0.1	0.0	-0.1% pts

Notes: 1. Ratio of equity attributable to Chugai shareholders = Capital and reserves attributable to Chugai shareholders (fiscal year-end) / Total assets (fiscal year-end)
2. Core return on net operating assets = Core net income / Net operating assets
3. Cash conversion cycle = [Trade accounts receivable / Sales + (Inventories – Trade accounts payable) / Cost of sales] x Months passed
4. Net cash turnover period = Net cash / Revenues x Months passed
5. Current ratio = Current assets (fiscal year-end) / Current liabilities (fiscal year-end)
6. Debt-to-equity ratio = Interest-bearing debt (fiscal year-end) / Capital and reserves attributable to Chugai shareholders (fiscal year-end)

Cash Conversion Cycle



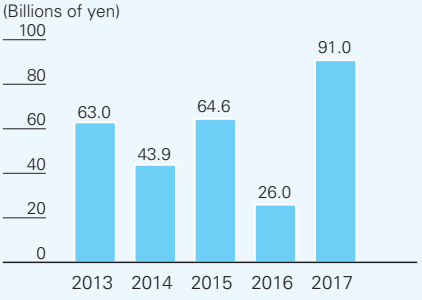
Cash Flows

In conjunction with its decision to apply IFRS from 2013, Chugai has reorganized the consolidated statements of cash flows and uses free cash flows as internal performance indicators (Roche discloses the same indicators). No items have been excluded from cash flows, as the Core basis results concept only applies to the income statement.

(Billions of yen)

	2015	2016	2017	2016/2017 Change
Movement of Free Cash Flows				
Operating profit	86.8	76.9	98.9	+28.6%
Operating profit, net of operating cash adjustment	105.4	98.5	121.0	+22.8%
Operating free cash flow	64.6	26.0	91.0	+250.0%
Free cash flow	37.0	4.3	64.7	+1,405%
Net increase in net cash	5.5	(30.5)	37.9	—
Consolidated Statement of Cash Flows				
Cash flows from operating activities	62.9	38.8	107.6	+177.3%
Cash flows from investing activities	(45.3)	(10.1)	(36.7)	+263.4%
Cash flows from financing activities	(28.5)	(33.4)	(29.6)	-11.4%
Net increase in cash and cash equivalents	(12.3)	(6.3)	43.7	—
Cash and cash equivalents at end of year	101.7	95.4	139.1	+45.8%

Operating Free Cash Flow



Operating free cash flow

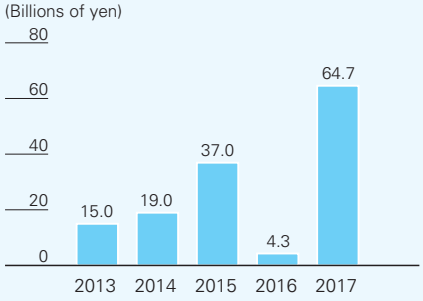
- Operating profit, net of operating cash adjustment, totaled ¥121.0 billion after adjustment for items including ¥14.5 billion for depreciation of property, plant and equipment.
- Operating free cash flow, which is calculated by subtracting the increase in net working capital of ¥14.5 billion and expenditures of ¥44.5 billion for the purchase of property, plant and equipment and intangible assets from operating profit, net of operating cash adjustments, amounted to ¥91.0 billion (¥26.0 billion for 2016). Purchases of property, plant and equipment were mainly investments in research and plant equipment.

Free cash flow (FCF)

- Free cash flow, which is calculated by subtracting the total of ¥26.2 billion of non-operating cash outflows from financial asset management, settlement for transfer pricing taxation and income taxes paid from operating free cash flow, was ¥64.7 billion (¥4.3 billion for 2016).
- Net cash as of December 31, 2017, after dividends paid and foreign currency translation adjustments, increased ¥37.9 billion compared with the end of the previous fiscal year to ¥242.8 billion.

Note: Chugai formerly stated free cash flow net of dividends paid, but began stating free cash flow before dividends paid from the second quarter of 2016. Chugai changed its presentation of free cash flow to a generally accepted calculation that conforms to the change in the way that Roche defines free cash flow. Free cash flow from 2014 has been restated accordingly. The change has had no effect on operating free cash flow.

Free Cash Flow



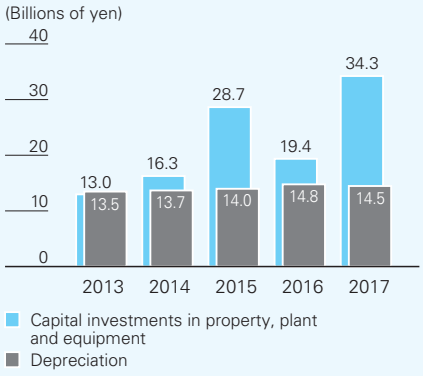
Capital Investments

(Billions of yen)

	2015	2016	2017	2016/2017 Change
Investments in property, plant and equipment	28.7	19.4	34.3	+76.8%
Depreciation	14.0	14.8	14.5	-2.0%

- The increase in capital investments in 2017 was largely the result of expenditures to acquire research and plant equipment.
- Chugai plans to make capital investments of ¥79.0 billion during 2018 consisting primarily of new investment in the main facilities below, and expects depreciation to total ¥14.5 billion.

Capital Investments in Property, Plant and Equipment/Depreciation



Major Capital Investments Planned

(Chugai Pharmaceutical Co., Ltd.)

Facilities (Location)	Description	Planned investment (Billions of yen) Total amount	Planned investment (Billions of yen) Investment to date	Fund-raising method	Start of construction	Slated transfer date
—	Purchase of land for business in Totsuka-ku, Yokohama	43.4	4.8	Self-financing	March 2016	December 2018

(Chugai Pharma Manufacturing Co., Ltd.)

Facilities (Location)	Description	Planned investment (Billions of yen) Total amount	Planned investment (Billions of yen) Investment to date	Fund-raising method	Start of construction	Slated completion date
Utsunomiya Plant (Utsunomiya City, Tochigi)	Enhancement of high-mix, low-volume production capability for pre-filled syringe form products (Installation of tray filler)	6.0	5.3	Self-financing	September 2013	October 2018
Ukima Plant (Kita-ku, Tokyo)	Enhancement of high-mix, low-volume production of antibody APIs for initial commercial products (Expansion of production capability with construction of UK3 facility)	37.2	24.3	Self-financing	November 2015	December 2018

Note: Plan concerning enhancement of high-mix, low volume production capability for pre-filled syringe form products (installation of tray filler) was transferred to Chugai Pharma Manufacturing Co., Ltd. in 2015.

Outlook for 2018

Forecast Assumptions

For 2018, Chugai assumes exchange rates of ¥115/CHF, ¥133/EUR, ¥111/USD and ¥84/SGD, and that the scale of seasonal influenza will be about the same as the average since 2012.

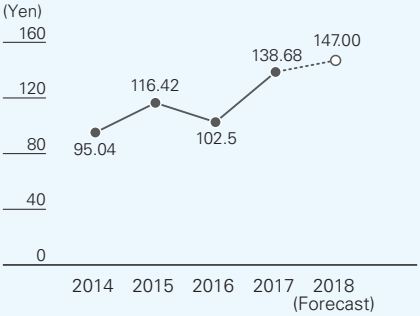
Results Forecast (Core Basis)

(Billions of yen)

	2016	2017	2018 Forecast	2017/2018 Change
Domestic sales (excluding Tamiflu)	379.7	388.4	374.8	-3.5%
Tamiflu sales	13.5	16.9	5.6	-66.9%
Overseas sales	79.5	94.0	118.1	+25.6%
Exports to Roche	62.8	76.4	99.6	+30.4%
Royalties and other operating income	19.1	34.9	43.0	+23.2%
Core operating profit	80.6	103.2	108.0	+4.7%
Core EPS (Yen)	102.50	138.68	147.00	+6.0%

- Domestic sales excluding Tamiflu are forecast to decrease compared with 2017 due to the effect of NHI drug price revisions, including the return of the premium for new drug creation for Herceptin and Rituxan, despite growth in sales of oncology product Alecensa, and growth in the bone and joint diseases area driven by Actemra, Edirol and Bonviva.
- Exports to Roche are expected to increase because of sustained growth in Actemra sales volume and steady growth in exports of Alecensa, which obtained approval for the additional indication of first-line treatment in Europe at the end of 2017. Exports of Hemlibra are forecast to decrease partly because there are few patients with inhibitors, currently the main target patients for this drug, and initial shipments were already made during 2017.
- Royalties and other operating income are forecast to increase substantially because of one-time income in connection with the transfer of long-listed products, in addition to an increase in payments from Roche for co-promotion and royalties for Actemra.
- Regarding cost of sales and operating expenses, although the ratio of cost of sales to sales is forecast to remain virtually unchanged from the previous year, we expect overall operating expenses to increase, mainly due to an increase in R&D expenditures as a result of the progress of development projects.
- Despite the expected negative impact from NHI drug price revisions, we forecast that Core operating profit and Core EPS will increase, mainly as a result of growth in sales of Alecensa, Actemra and other products, as well as income from the transfer of long-listed products.

Core EPS*



* Core EPS = Core net income attributable to Chugai shareholders / Diluted weighted average shares outstanding

Fundamental Profit Distribution Policy and Dividends

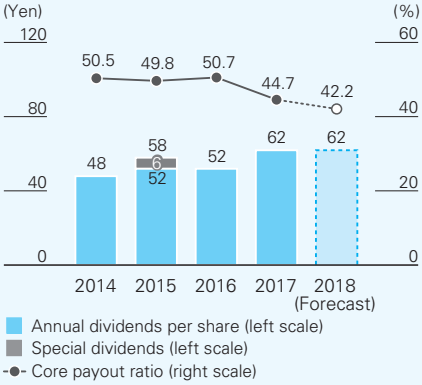
After taking strategic funding needs and the results forecast into account, Chugai aims for a consolidated payout ratio of 50 percent of Core EPS on average to provide for stable allocation of profit to all shareholders. Internal reserves will be used to increase corporate value through investments for further growth in existing strategic areas and to explore future business opportunities.

(Yen)

	2015	2016	2017	2018 Forecast
Basic net income per share (EPS)	112.00	98.12	133.04	—
Core EPS	116.42	102.50	138.68	147.00
Equity per share attributable to Chugai shareholders (BPS)	1,146.17	1,181.67	1,265.46	—
Cash dividends per share	58	52	62	62
Core payout ratio	49.8%	50.7%	44.7%	42.2%

- Cash dividends per share for 2017 totaled ¥62.
- The five-year average Core EPS payout ratio for 2017 was 48.4 percent. (We expect the five-year average Core EPS payout ratio for 2018 to be 47.0 percent.)
- The forecast for cash dividends per share for 2018 includes an interim dividend of ¥31.

Dividends per Share/ Core Payout Ratio



Business Risks

Chugai's corporate performance is subject to material impact from a range of possible future events. Below, we list what we consider the principal sources of risk to the development of our business. We recognize the possibility of these risk events actually occurring, and have prepared policies to forestall such events and take appropriate measures when they do occur.

The categories of risk identified in this section are based on assessments made by Chugai Pharmaceutical as of December 31, 2017.

New Product Research and Development

With the goal of becoming a top pharmaceutical company capable of continuously delivering innovative new drugs, Chugai aggressively pursues research and development in Japan and overseas. Our development pipeline is well stocked, especially in the field of oncology. However, bringing all drug candidates smoothly through to the market from the development stage may not be possible, and we expect to have to abandon development in some cases. When such a situation occurs, there is a possibility of a material impact on Chugai's business performance and financial position, depending on the product under development.

Changes in Product Environments

In recent years, there have been rapid technological advancements in the pharmaceutical industry, and Chugai faces fierce competition from pharmaceutical companies in Japan and overseas. Chugai's business performance and financial position may be materially affected by changes in product environments caused by the sale of competitor products and generics and also by changes in marketing and technology license contracts concluded by Chugai.

Side Effects

Pharmaceutical products are approved by regulatory authorities in each country after stringent screening. However, because of the characteristics of these products, it is difficult to completely prevent side effects from their use even if all possible safety measures are taken. In cases where side effects occur, in particular newly discovered serious side effects, there is a risk of a material impact on Chugai's business performance and financial position.

Medical System Reform

Japan's health insurance system is being reformed against a backdrop of rapid demographic change, with a falling birthrate and an increasing number of elderly people. As part of this process, measures are being taken to curb medical expenses. Revisions have been made to the system of reimbursement of medical fees, and debate is continuing in such areas as NHI drug price reform. Overseas, pressure to reduce drug costs is increasing, especially in advanced countries. Future measures to curb drug costs in these countries could materially affect Chugai's business performance and financial position.

Intellectual Property Rights

Chugai recognizes that it applies intellectual property rights in pursuing its business activities, and takes care to distinguish its own proprietary intellectual property rights and licensing arrangements recognized under law. However, the possibility remains of unintentional infringement on third-party intellectual property rights. Major disputes related to intellectual property rights relating to our business could have a material impact on Chugai's business performance and financial position.

Strategic Alliance with Roche

In line with its strategic alliance with Roche, Chugai is the only pharmaceutical partner of Roche in the Japanese market and has granted Roche first refusal rights with respect to its products in global markets outside Japan, excluding South Korea and Taiwan. Consequently, Chugai has in-licensed and out-licensed many products and projects from and to Roche. Changes in Chugai's strategic alliance with Roche for any reason could have a material impact on its business performance and financial position.

International Business Activities

Chugai actively conducts international operations including overseas marketing and research and development, and export and import of bulk drug products. These international business activities expose Chugai to risks associated with legal and regulatory changes, political instability, economic uncertainty, local labor-management relations, changes in and interpretations of systems of taxation, changes in foreign currency markets, differences in commercial practices and other issues. Compliance and other problems arising from these issues could have a material impact on Chugai's business performance and financial position.

Information Technology Security and Information Control

Chugai makes full use of a wide range of information technology systems in its business activities. Consequently, it is subject to the risk of its operations being disrupted due to system malfunctions, computer viruses or other external factors. In addition, an accident or other incident resulting in the leakage of confidential information could have a material impact on Chugai's business performance and financial position.

Impact from Large-Scale Disasters and Other Contingencies

In the event of natural disasters such as earthquakes or typhoons, or accidents such as fires or other contingencies, damage to Chugai's business sites or sales locations, or those of its business partners, could interrupt its operations. In addition, Chugai could incur significant expenses for the repair of damaged buildings and facilities. Such circumstances could therefore have a material impact on Chugai's business performance and financial position.

Litigation

There is a possibility that litigation may be brought against Chugai over side effects of pharmaceuticals, product liability, labor issues, fair trade or other issues associated with its business activities, which could have a material impact on Chugai's business performance and financial position.

Environmental Issues

In addition to complying with laws and regulations related to environmental issues, Chugai has established a set of even higher voluntary standards and has been making efforts to achieve them. In the course of Chugai's business activities, violations of relevant laws or regulations may occur as a result of an accident or other incident. Any related expenses could have a material impact on Chugai's business performance and financial position.

Consolidated Financial Statements

1. Consolidated income statement and consolidated statement of comprehensive income

(1) Consolidated income statement in millions of yen

	Year ended December 31	
	2017	2016
Revenues	**534,199**	**491,780**
Sales (Note 2)	499,308	472,673
Royalties and other operating income (Note 2)	34,891	19,108
Cost of sales	(254,171)	(247,944)
Gross profit	**280,028**	**243,836**
Marketing and distribution	(72,800)	(69,770)
Research and development	(92,947)	(85,011)
General and administration	(15,347)	(12,171)
Operating profit	**98,934**	**76,884**
Financing costs (Note 3)	(110)	(86)
Other financial income (expense) (Note 3)	(87)	1,111
Other expense (Note 4)	(1,706)	(3,460)
Profit before taxes	**97,031**	**74,448**
Income taxes (Note 5)	(23,490)	(20,076)
Net income	**73,541**	**54,372**
Attributable to:		
Chugai shareholders (Note 20)	72,713	53,592
Non-controlling interests (Note 21)	827	780
Earnings per share (Note 25)		
Basic (yen)	133.04	98.12
Diluted (yen)	132.83	97.97

(2) Consolidated statement of comprehensive income in millions of yen

	Year ended December 31	
	2017	2016
Net income recognized in income statement	**73,541**	**54,372**
Other comprehensive income		
Remeasurements of defined benefit plans (Notes 5 and 20)	916	(3,472)
Items that will not be reclassified to the income statement	**916**	**(3,472)**
Available-for-sale investments (Notes 5 and 20)	1,204	(1,735)
Cash flow hedges (Notes 5 and 20)	(3,293)	5,204
Currency translation of foreign operations (Notes 5 and 20)	3,713	(3,296)
Items that may be reclassified subsequently to the income statement	**1,624**	**173**
Other comprehensive income, net of tax (Note 5)	**2,540**	**(3,300)**
Total comprehensive income	**76,081**	**51,073**
Attributable to:		
Chugai shareholders (Note 20)	75,154	50,393
Non-controlling interests (Note 21)	927	680

2. **Consolidated balance sheet** in millions of yen

	December 31, 2017	December 31, 2016
Assets		
Non-current assets:		
Property, plant and equipment (Note 6)	171,569	157,081
Intangible assets (Note 7)	21,078	19,299
Financial non-current assets (Note 8)	11,350	9,706
Deferred tax assets (Note 5)	34,501	27,474
Other non-current assets (Note 9)	14,836	13,965
Total non-current assets	**253,333**	**227,525**
Current assets:		
Inventories (Note 10)	169,056	185,440
Accounts receivable (Note 11)	174,284	167,482
Current income tax assets (Note 5)	717	1
Marketable securities (Note 12)	104,018	110,176
Cash and cash equivalents (Note 13)	139,074	95,368
Other current assets (Note 14)	11,990	20,293
Total current assets	**599,141**	**578,760**
Total assets	**852,473**	**806,285**
Liabilities		
Non-current liabilities:		
Long-term debt (Note 15)	(207)	(510)
Deferred tax liabilities (Note 5)	(9,211)	(9,146)
Defined benefit plan liabilities (Note 23)	(9,292)	(8,790)
Long-term provisions (Note 16)	(2,041)	(2,140)
Other non-current liabilities (Note 17)	(15,923)	(15,543)
Total non-current liabilities	**(36,674)**	**(36,128)**
Current liabilities:		
Short-term debt (Note 15)	(129)	(135)
Current income tax liabilities (Note 5)	(18,541)	(10,533)
Short-term provisions (Note 16)	(79)	(76)
Accounts payable (Note 18)	(63,518)	(72,346)
Other current liabilities (Note 19)	(40,635)	(40,570)
Total current liabilities	**(122,902)**	**(123,660)**
Total liabilities	**(159,576)**	**(159,788)**
Total net assets	**692,897**	**646,497**
Equity:		
Capital and reserves attributable to Chugai shareholders (Note 20)	691,924	645,508
Equity attributable to non-controlling interests (Note 21)	973	989
Total equity	**692,897**	**646,497**

3. **Consolidated statement of cash flows** in millions of yen

	Year ended December 31	
	2017	2016
Cash flows from operating activities		
Cash generated from operations (Note 26)	124,776	102,797
(Increase) decrease in working capital	14,465	(36,159)
Payments made for defined benefit plans	(2,483)	(2,381)
Utilization of provisions (Note 16)	(34)	(77)
Other operating cash flows	(6,447)	(54)
Cash flows from operating activities, before income taxes paid	**130,278**	**64,127**
Income taxes paid	(22,655)	(25,339)
Total cash flows from operating activities	**107,623**	**38,787**
Cash flows from investing activities		
Purchase of property, plant and equipment	(32,881)	(30,084)
Purchase of intangible assets	(11,645)	(6,247)
Disposal of property, plant and equipment	64	(91)
Disposal of intangible assets	452	-
Interest and dividends received (Note 26)	271	301
Purchases of marketable securities	(208,480)	(208,686)
Sales of marketable securities	215,510	232,018
Sales of investment securities	-	2,679
Other investing cash flows	(8)	4
Total cash flows from investing activities	**(36,718)**	**(10,107)**
Cash flows from financing activities		
Interest paid	(5)	(8)
Dividends paid to Chugai shareholders	(30,054)	(31,677)
Dividends paid to non-controlling shareholders	(944)	(1,105)
Exercise of equity compensation plans (Note 24)	922	506
(Increase) decrease in own equity instruments	(20)	(7)
Other financing cash flows	538	(1,124)
Total cash flows from financing activities	**(29,563)**	**(33,415)**
Net effect of currency translation on cash and cash equivalents	2,363	(1,604)
Increase (decrease) in cash and cash equivalents	**43,706**	**(6,338)**
Cash and cash equivalents at January 1	95,368	101,707
Cash and cash equivalents at December 31 (Note 13)	**139,074**	**95,368**

4. **Consolidated statement of changes in equity** in millions of yen

	Attributable to Chugai shareholders						
	Share capital	Capital surplus	Retained earnings	Other reserves	Subtotal	Non-controlling interests	Total equity
Year ended December 31, 2016							
At January 1, 2016	**72,967**	**62,567**	**488,954**	**1,369**	**625,857**	**1,414**	**627,271**
Net income recognized in income statement	–	–	53,592	–	53,592	780	54,372
Available-for-sale investments (Notes 5 and 20)	–	–	–	(1,735)	(1,735)	–	(1,735)
Cash flow hedges (Notes 5 and 20)	–	–	–	5,204	5,204	–	5,204
Currency translation of foreign operations (Notes 5, 20 and 21)	–	–	–	(3,195)	(3,195)	(101)	(3,296)
Remeasurements of defined benefit plans (Notes 5 and 20)	–	–	(3,472)	–	(3,472)	–	(3,472)
Total comprehensive income	**–**	**–**	**50,119**	**273**	**50,393**	**680**	**51,073**
Dividends (Notes 20 and 21)	–	–	(31,675)	–	(31,675)	(1,105)	(32,780)
Equity compensation plans (Note 20)	–	276	–	–	276	–	276
Own equity instruments (Note 20)	–	657	–	–	657	–	657
At December 31, 2016	**72,967**	**63,500**	**507,399**	**1,642**	**645,508**	**989**	**646,497**
Year ended December 31, 2017							
At January 1, 2017	**72,967**	**63,500**	**507,399**	**1,642**	**645,508**	**989**	**646,497**
Net income recognized in income statement	–	–	72,713	–	72,713	827	73,541
Available-for-sale investments (Notes 5 and 20)	–	–	–	1,204	1,204	–	1,204
Cash flow hedges (Notes 5 and 20)	–	–	–	(3,293)	(3,293)	–	(3,293)
Currency translation of foreign operations (Notes 5, 20 and 21)	–	–	–	3,613	3,613	100	3,713
Remeasurements of defined benefit plans (Notes 5 and 20)	–	–	916	–	916	–	916
Total comprehensive income	–	–	**73,630**	**1,524**	**75,154**	**927**	**76,081**
Dividends (Notes 20 and 21)	–	–	(30,055)	–	(30,055)	(944)	(30,998)
Equity compensation plans (Note 20)	3	102	–	–	105	–	105
Own equity instruments (Note 20)	–	1,213	–	–	1,213	–	1,213
At December 31, 2017	**72,970**	**64,815**	**550,974**	**3,166**	**691,924**	**973**	**692,897**

Notes to Consolidated Financial Statements

1. General accounting principles and significant accounting policies

(1) Basis of preparation of the consolidated financial statements

These financial statements are the annual consolidated financial statements of Chugai Pharmaceutical Co., Ltd., ("Chugai") a company registered in Japan, and its subsidiaries ("the Group"). The common stock of Chugai is publicly traded and is listed on the Tokyo Stock Exchange under the stock code "TSE: 4519". The consolidated financial statements were approved by Osamu Nagayama, representative director, Chairman of the Board & CEO, and Yoshio Itaya, Board Director & CFO on March 21, 2018.

Roche Holding Ltd. is a public company registered in Switzerland and the parent company of the Roche Group, which discloses its results in accordance with International Financial Reporting Standards ("IFRS"). The shareholding percentage of Roche Holding Ltd. in Chugai is 59.89% (61.30% of the total number of shares issued excluding treasury stock). The Group became a principal member of the Roche Group after entering into a strategic alliance in October 2002.

The Group meets all of the requirements for a "Specified Company under Designated International Financial Reporting Standards" as stipulated under Article 1-2 of the "Regulations Concerning Terminology, Forms, and Preparation Methods of Consolidated Financial Statements" (Ministry of Finance of Japan Regulation No. 28, 1976). Hence, in accordance with Article 93 of the Regulation, the Consolidated Financial Statements have been prepared in accordance with IFRS.

The consolidated financial statements are presented in Japanese yen, which is Chugai's functional currency and amounts are rounded to the nearest ¥1 million. As a result, the totals shown in the consolidated financial statements do not necessarily agree with the sum of the individual amounts. They have been prepared using the historical cost convention except for items that are required to be accounted for at fair value.

(2) Key accounting judgments, estimates and assumptions

The preparation of the consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets, liabilities and contingent amounts. Actual outcomes could differ from those management estimates. The estimates and underlying assumptions are reviewed on an ongoing basis and are based on historical experience and various other factors. Revisions to estimates are recognized in the period in which the estimate is revised. The following are considered to be the key accounting judgments, estimates and assumptions made and are believed to be appropriate based upon currently available information.

Revenues. Revenues are only recognized when, in management's judgment, the significant risks and rewards of ownership have been transferred and when the Group does not retain continuing managerial involvement or effective control over the goods sold or when the obligation has been fulfilled. The Group is party to out-licensing agreements which involve upfront and milestone payments occurring over several years and which may also involve certain future obligations. Therefore, for some transactions this can result in cash receipts being initially recognized as deferred income and then released to income over subsequent periods on the basis of the performance of the conditions specified in the agreement.

Sales allowances. The Group makes accruals for expected sales rebates, which are estimated based on analyses of existing contractual or legislatively-mandated obligations, historical trends and the Group's experience. As these deductions are based on management estimates, they may be subject to change as better information becomes available. Such changes that arise could impact the accruals recognized in the balance sheet in future periods and consequently the level of sales recognized in the income statement in future periods.

Impairment. Intangible assets not yet available for use are reviewed annually for impairment. Property, plant and equipment and intangible assets in use are assessed for impairment when there is a triggering event that provides evidence that an asset may be impaired. To assess whether any impairment exists estimates of expected future cash flows are used. Actual outcomes could vary significantly from such estimates of discounted future cash flows. Factors such as changes in discount rates, the planned use of buildings, machinery or equipment, closure of facilities, the presence or absence of competition, technical obsolescence and lower than anticipated product sales could lead to shorter useful lives or impairment.

Post-employment benefits. The Group operates defined benefit plans and the fair value of the recognized plan assets and liabilities are based upon statistical and actuarial calculations. The measurement of the net defined benefit obligation is particularly sensitive to changes in the discount rate and expected mortality. The actuarial assumptions used may differ materially from actual results due to changes in market and economic conditions, longer or shorter life spans of participants, and other changes in the factors being assessed. These differences could impact on the assets or liabilities recognized in the balance sheet in future periods.

Legal. The Group provides for anticipated legal settlement costs when there is a probable outflow of resources that can be reasonably estimated. These estimates consider the specific circumstances of each legal case and relevant legal advice, and are inherently judgmental due to the highly complex nature of legal cases. The estimates could change substantially over time as new facts emerge and each legal case progresses. Where no reliable estimate can be made, no provision is recorded and contingent liabilities are disclosed where material.

Environmental. The Group provides for anticipated environmental remediation costs when there is a probable outflow of resources that can be reasonably estimated. Environmental provisions consist primarily of costs to fully clean and refurbish contaminated sites, including landfills, and to treat and contain contamination at certain other sites. These estimates are inherently judgmental due to uncertainties related to the detection of previously unknown contaminated sites, the method and extent of remediation, the percentage of the problematic materials attributable to the Group at the remediation sites, and the financial capabilities of the other potentially responsible parties. The estimates could change substantially over time as new facts emerge and each environmental remediation progresses.

Income taxes. Significant estimates are required to determine the current and deferred tax assets and liabilities. Some of these estimates are based on interpretations of existing tax laws or regulations. Factors that may impact on current and deferred taxes include changes in tax laws, regulations or rates, changing interpretations of existing tax laws or regulations, future levels of research and development spending and changes in pre-tax earnings.

Leases. The treatment of leasing transactions is mainly determined by whether the lease is considered to be an operating or finance lease. In making this assessment, management looks at the substance of the lease, as well as the legal form, and makes a judgment about whether substantially all of the risks and rewards of ownership are transferred. Arrangements which do not take the legal form of a lease but that nevertheless convey the right to use an asset are also covered by such assessments.

(3) Significant accounting policies

Consolidation policy

Subsidiaries are all companies over which the Group has control. Chugai controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Companies acquired during the year are consolidated from the date on which control is transferred to the Group, and subsidiaries to be divested are included up to the date on which control passes from the Group. Inter-company balances, transactions and resulting unrealized income are eliminated in full. Changes in ownership interests in subsidiaries are accounted for as equity transactions if they occur after control has already been obtained and if they do not result in a loss of control. Associates are companies over which the Group exercises, or has the power to exercise, significant influence, but which it does not control and they are accounted for using the equity method.

Foreign currency translation

Most foreign subsidiaries of the Group use their local currency as their functional currency. Certain foreign subsidiaries use other currencies (such as the euro) as their functional currency where this is the currency of the primary economic environment in which the entity operates. Local transactions in other currencies are initially reported using the exchange rate at the date of the transaction. Gains and losses from the settlement of such transactions and gains and losses on translation of monetary assets and liabilities denominated in other currencies are included in income, except when they are qualifying cash flow hedges. In such cases the gains and losses are deferred into other comprehensive income.

Upon consolidation, assets and liabilities of foreign subsidiaries using functional currencies other than the Japanese yen are translated into Japanese yen using year-end rates of exchange. The income statement and statement of cash flows are translated at the average rates of exchange for the year. Translation differences due to the changes in exchange rates between the beginning and the end of the year and the difference between net income translated at the average and year-end exchange rates are taken directly to other comprehensive income.

Revenue recognition

Sales represent amounts received and receivable for goods supplied to customers after deducting trade discounts, cash discounts and volume rebates, and exclude consumption taxes and other taxes directly linked to sales.

Revenues from the sale of products are recognized upon transfer to the customer of significant risks and rewards. Trade discounts, cash discounts and volume rebates are recorded on an accrual basis consistent with the recognition of the related sales. Sales returns, charge-backs and other rebates are also deducted from sales and recorded as accrued liabilities or as a deduction from accounts receivable.

Royalties and other operating income are recorded as earned or as the services are performed. Single transactions are split into separately identifiable components to reflect the substance of the transaction, where necessary. Conversely, two or more transactions may be considered together for revenue recognition purposes, where the commercial effect cannot be understood without reference to the series of transactions as a whole.

Cost of sales
Cost of sales includes the corresponding direct production costs and related production overheads of goods sold and services rendered. Royalties, alliance and collaboration expenses, including all collaboration profit-sharing arrangements are also reported as part of cost of sales. Start-up costs between validation and the achievement of normal production capacity are expensed as incurred.

Research and development
Internal research and development activities are expensed as incurred for the following:
- Internal research costs incurred for the purpose of gaining new scientific or technical knowledge and understanding.
- Internal development costs incurred for the application of research findings or other knowledge to plan and develop new products for commercial production. The development projects undertaken by the Group are subject to technical, regulatory and other uncertainties, such that, in the opinion of management, the criteria for capitalization as intangible assets are not met prior to obtaining marketing approval by the regulatory authorities in major markets.
- Post-marketing studies after regulatory approval, such as phase IV costs in the pharmaceuticals business, generally involve safety surveillance and on-going technical support of a drug after it receives marketing approval to be sold. They may be required by regulatory authorities or may be undertaken for safety or commercial reasons. The costs of such post-marketing studies are not capitalized as intangible assets, as in the opinion of management, they do not generate separately identifiable incremental future economic benefits that can be reliably measured.

Acquired in-process research and development resources obtained through in-licensing arrangements, business combinations or separate asset purchases are capitalized as intangible assets. The acquired asset must be controlled by the Group, be separately identifiable and expected to generate future economic benefits, even if uncertainty exists as to whether the research and development will ultimately result in a marketable product. Consequently, upfront and milestone payments to third parties for pharmaceutical products or compounds before regulatory marketing approval are recognized as intangible assets. Assets acquired through such arrangements are measured on the basis set out in the “Intangible assets” policy. Subsequent internal research and development costs incurred post-acquisition are treated in the same way as other internal research and development costs. If research and development are embedded in contracts for strategic alliances, the Group carefully assesses whether upfront or milestone payments constitute funding of research and development work or acquisition of an asset.

Licensing, milestone, and other upfront receipts
Royalty income is recognized on an accrual basis in accordance with the substance of the respective licensing agreements. If the collectability of a royalty amount is not reasonably assured, those royalties are recognized as revenues when the cash is received. The Group receives upfront, milestone and other similar payments from third parties relating to the sale or licensing of products or technology. Revenues associated with performance milestones are recognized based on achievement of the deliverables as defined in the respective agreements. Upfront payments and license fees for which there are subsequent deliverables are initially reported as deferred income and are recognized in income as earned over the period of the development collaboration or the manufacturing obligation.

Employee benefits
Short-term employee benefits include wages, salaries, social security contributions, paid annual leave and sick leave, profit sharing and bonuses, and non-monetary benefits for current employees. The costs are recognized within the operating results when the employee has rendered the associated service. The Group recognizes a liability for profit sharing and bonuses where contractually obliged or where there is a past practice that has created a constructive obligation.

Termination benefits are payable when employment is terminated by the Group before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. Termination costs are recognized at the earlier of when the Group can no longer withdraw the offer of the benefits or when the Group recognizes any related restructuring costs.

Post-employment benefits
For defined contribution plans, the Group contributions are recognized within the operating results when the employee has rendered the associated service.

For defined benefit plans the liability or asset recognized in the balance sheet is net amount of the present value of the defined benefit obligation and the fair value of the plan assets. All changes in the net defined benefit liability (asset) are recognized as they occur as follows:

Recognized in the income statement:
- Current service costs are charged to the appropriate income statement heading within the operating results.
- Past service costs, including curtailment gains or losses, are recognized immediately in general and administration within the operating results.
- Settlement gains or losses are recognized in general and administration within the operating results.
- Net interest on the net defined benefit liability (asset) is recognized in financing costs.

Recognized in other comprehensive income:
- Actuarial gains and losses arising from experience adjustments (the difference between previous assumptions and what has actually occurred) and changes in actuarial assumptions.
- The return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset).

Net interest on the net defined benefit liability (asset) comprises interest income on plan assets and interest costs on the defined benefit obligation. The net interest is calculated using the same discount rate that is used in calculating the defined benefit obligation, applied to the net defined benefit liability (asset) at the start of the period, taking account of any changes from contribution or benefit payments.

Pension assets and liabilities in different defined benefit plans are not offset unless the Group has a legally enforceable right to use the surplus in one plan to settle obligations in the other plan.

Equity compensation plans
The fair value of all equity compensation awards, including restricted stocks, granted to directors and certain employees is estimated at the grant date and recorded as an expense over the vesting period. The expense is charged to the appropriate income statement heading within the operating results. For equity-settled plans, an increase in equity is recorded for this expense and any subsequent cash flows from exercises of vested awards are recorded as changes in equity.

Property, plant and equipment
Property, plant and equipment are initially recorded at cost of purchase or construction, and include all costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. These include items such as costs of site preparation, installation and assembly costs and professional fees. The net costs of testing whether the asset is functioning properly, including validation costs, are also included in the initially recorded cost of construction. Property, plant and equipment are depreciated on a straight-line basis, except for land, which is not depreciated. The estimated useful lives of major classes of depreciable assets are as follows:
- Land improvements: 40 years
- Buildings: 10-50 years
- Machinery and equipment: 3-15 years

Where parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate components. The estimated useful lives of the assets are regularly reviewed, and, if necessary, the future depreciation charges are accelerated. Repairs and maintenance costs are expensed as incurred.

Leases
Where the Group is the lessee, finance leases exist when substantially all of the risks and rewards of ownership of leased assets are transferred to the Group. Finance lease assets are capitalized at the start of the lease at fair value, or the present value of the minimum lease payments, if lower. The rental obligation, net of finance charges, is reported within debt. Finance lease assets are depreciated over the shorter of the lease term and its useful life. The interest element of the lease payment is charged against income over the lease term based on the effective interest rate method. Operating leases exist when substantially all of the risks and rewards of ownership are not transferred to the Group. Payments made under operating leases are charged against income on a straight-line basis over the period of the lease.

Intangible assets
Purchased patents, trademarks, licenses and other intangible assets are initially recorded at cost. Assets that have been acquired through a business combination are initially recorded at fair value. Once available for use, intangible assets are amortized on a straight-line basis over their useful lives. The estimated useful life is the lower of the legal duration and the economic useful life. The estimated useful lives of intangible assets are regularly reviewed. Estimated useful lives of major classes of amortizable intangible assets are as follows:

- Product intangibles in use: 5–17 years
- Marketing intangibles in use: 5 years
- Technology intangibles in use: 3–8 years

Impairment of property, plant and equipment and intangible assets
An impairment assessment is carried out at each reporting date when there is evidence that an item of property, plant and equipment or intangible asset in use may be impaired. In addition intangible assets that are not yet available for use are tested for impairment annually. When the recoverable amount of an asset, being the higher of its fair value less costs to sell and its value in use, is less than its carrying value, then the carrying value is reduced to its recoverable amount. This reduction is reported in the income statement as an impairment loss. Value in use is calculated using estimated cash flows. These are discounted using an appropriate long-term interest rate. When an impairment loss arises, the useful life of the asset is reviewed and, if necessary, the future depreciation/amortization charge is accelerated. If the amount of impairment loss subsequently decreases and the decrease can be related objectively to an event occurring after the impairment was recognized, then the previously recognized impairment loss is reversed through the income statement as an impairment reversal.

Inventories
Inventories are stated at the lower of cost and net realizable value. The cost of finished goods and work in process includes raw materials, direct labor and other directly attributable costs and overheads based upon the normal capacity of production facilities. Cost is determined using the weighted average method. Net realizable value is the estimated selling price less cost to completion and selling expenses.

Accounts receivable
Accounts receivable are carried at the original invoice amount less allowances made for doubtful accounts, trade discounts, cash discounts, volume rebates and similar allowances. An allowance for doubtful accounts is recorded where there is objective evidence that the Group will not be able to collect all amounts due. These estimates are based on specific indicators, such as the aging of customer balances, specific credit circumstances and the Group's historical experience, taking also into account economic conditions. Expenses for doubtful trade receivables are recognized within marketing and distribution expenses. Trade discounts, cash discounts, volume rebates and similar allowances are recorded on an accrual basis consistent with the recognition of the related sales, using estimates based on existing contractual obligations, historical trends and the Group's experience.

Cash and cash equivalents
Cash and cash equivalents include cash on hand and time, call and current balances with banks and similar institutions. Such balances are only reported as cash equivalents if they are readily convertible to known amounts of cash, are subject to insignificant risk of changes in their fair value and have a maturity of three months or less from the date of acquisition.

Provisions and contingencies
Provisions are recognized where a legal or constructive obligation has been incurred which will probably lead to an outflow of resources that can be reliably estimated. In particular, restructuring provisions are recognized when the Group has a detailed formal plan that has either commenced implementation or has been announced. Provisions are recorded for the estimated ultimate liability that is expected to arise and are discounted when the time value of money is material. A contingent liability is disclosed where the existence of the obligation will only be confirmed by future events or where the amount of the obligation cannot be measured with reasonable reliability. Contingent assets are not recognized, but are disclosed where an inflow of economic benefits is probable.

Fair values
Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. It is determined by reference to quoted market prices or by the use of established valuation techniques such as option pricing models and the discounted cash flow method if quoted prices in an active market are not available.

Financial instruments
Financial instruments are classified into the following categories:

Available-for-sale. These are non-derivative financial assets that are either designated as such or are not classified in any other financial asset category. Available-for-sale financial assets are initially recorded and subsequently carried at fair value. Changes in fair value are recorded in other comprehensive income, except for impairments, interest and foreign exchange components. When an investment is derecognized the cumulative gains and losses in equity are reclassified to other financial income (expense). Available-for-sale assets are mainly comprised of marketable securities and financial non-current assets.

Fair value – hedging instruments. These are derivative financial instruments that are used to manage the exposures to foreign currency risk. Derivative financial instruments are initially recorded and subsequently carried at fair value. Apart from those derivatives designated as qualifying cash flow hedging instruments, all changes in fair value are recorded as other financial income (expense).

Fair value – designated. These are non-derivative financial instruments that are designated as fair value through profit or loss on initial recognition. Designated fair value instruments are initially recorded and subsequently carried at fair value. Changes in fair value are recorded in the income statement. Designated fair value instruments mainly comprise of financial assets held for trading.

Loans and receivables. These are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Loans and receivables are initially recorded at fair value and subsequently carried at amortized cost using the effective interest rate method, less any impairment losses. Loans and receivables are mainly comprised of accounts receivable, cash and cash equivalents and a part of financial non-current assets.

Other financial liabilities. These are non-derivative financial liabilities. Other financial liabilities are initially recorded at fair value and subsequently carried at amortized cost using the effective interest rate method. Other financial liabilities are mainly comprised of accounts payable and debt.

Derecognition of financial instruments
A financial asset is derecognized when the contractual cash flows from the asset expire or when the Group transfers the rights to receive the contractual cash flows from the financial assets in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred. A financial liability is derecognized when the contractual obligations are discharged, cancelled or expire.

Impairment of financial assets
Financial assets are individually assessed for possible impairment at each reporting date. An impairment charge is recorded where there is objective evidence of impairment, such as where the issuer is in bankruptcy, default or other significant financial difficulty. Available-for-sale equity securities that have a market value of more than 25% below their original cost, or have a market value below their original cost for a sustained six-month period will be considered as impaired.

For financial assets carried at amortized cost, any impairment charge is the difference between the carrying value and the recoverable amount, calculated using estimated future cash flows discounted using the original effective interest rate. For available-for-sale financial assets, any impairment charge is the amount currently carried in other comprehensive income for the difference between the original cost, net of any previous impairment, and the fair value.

An impairment loss is reversed if the reversal can be related objectively to an event occurring after the impairment loss was recognized. For equity securities held as available-for-sale, the reversal is recognized directly in other comprehensive income. For debt securities measured at amortized cost or available-for-sale, the reversal is recognized in other financial income (expense).

Hedge accounting
The Group uses derivatives to manage its exposures to foreign currency risk. The instruments used may include forwards contracts and options. The Group generally limits the use of hedge accounting to certain significant transactions. To qualify for hedge accounting the hedging relationship must meet several strict conditions on documentation, probability of occurrence, hedge effectiveness and reliability of measurement. While many of these transactions can be considered as hedges in economic terms, if the required conditions are not met, then the relationship does not qualify for hedge accounting. In this case the hedging instrument and the hedged item are reported independently as if there were no hedging relationship, which means that any derivatives are reported at fair value, with changes in fair value included in other financial income (expense).

Cash flow hedge. Is a hedge of the exposure to variability in cash flows that is attributable to a particular risk associated with a recognized asset or liability or a highly probable forecast transaction and could affect profit or loss. The hedging instrument is recorded at fair value. The effective portion of the hedge is included in other comprehensive income and any ineffective portion is reported in other financial income (expense). If the hedging relationship is the hedge of the foreign currency risk of a firm commitment or highly probable forecasted transaction that results in the recognition of a non-financial item, the cumulative changes in the fair value of the hedging instrument that have been recorded in other comprehensive income are included in the initial carrying value of the non-financial item at the date of recognition, and if it is the other forecasted transaction, have been recorded the profit or loss as well as the term when hedged item affect profit or loss. For other hedged forecasted cash flow, the cumulative changes in the fair value of the hedging instrument that have been recorded in other comprehensive income are included in other financial income (expense) when the forecasted transaction affects net income.

Fair value hedge. Is a hedge of the exposure to changes in fair value of a recognized asset or liability, or an unrecognized firm commitment, or an identified portion of such an asset, liability or firm commitment, that is attributable to a particular risk and could affect profit or loss. The hedging instrument is recorded at fair value and the hedged item is recorded at its previous carrying value, adjusted for any changes in fair value that are attributable to the hedged risk. Changes in the fair values are reported in other financial income (expense).

Taxation
Income taxes include all taxes based upon the taxable profits of the Group. Other taxes not based on income, such as property and capital taxes, are included in the appropriate heading within the operating results.

Liabilities for income taxes, which could arise on the remittance of retained earnings, principally relating to subsidiaries, are only recognized where it is probable that such earnings will be remitted in the foreseeable future.

Deferred tax assets and liabilities are recognized on temporary differences between the tax bases of assets and liabilities and their carrying values. Deferred tax assets are recognized to the extent that it is probable that future taxable profit will be available against which the unused tax losses can be utilized.

Current and deferred tax assets and liabilities are offset when the income taxes are levied by the same taxation authority and when there is a legally enforceable right to offset them. Deferred taxes are determined based on the currently enacted tax rates applicable in each tax jurisdiction where the Group operates.

Own equity instruments
The Group's holdings in its own equity instruments are recorded as a deduction from equity. The original purchase cost, consideration received for subsequent resale of these equity instruments and other movements are reported as changes in equity. The exercise of stock acquisition rights granted to directors and certain employees will result in the allotment from own equity instruments.

(4) Changes in accounting policies
The accounting policies applied by the Group for the consolidated financial statements for the year ended December 31, 2017 are the same as for the previous fiscal year

There were minor amendments to some existing, which do not materially impact the Group's performance or financial status.

(5) Future new and revised standards

By the date of approval of the consolidated financial statements, the following main new standards have been issued by the International Accounting Standards Board (IASB) and have not yet been implemented by the Group.

	IFRS	Mandatory adoption (from the year beginning)	Plan to be implemented by the Group	Description of new and revised standards
IFRS 15	Revenue from Contracts with Customers	January 1, 2018	FY ending Dec. 2018	Revision of accounting relating to revenue recognition
IFRS 9	Financial Instruments	January 1, 2018	FY ending Dec. 2018	Classification, measurement and recognition of financial instruments and revision of hedge accounting
IFRS 16	Leases	January 1, 2019	FY ending Dec. 2019	Revision of accounting relating to recognition of leases

1) Standards that will be effective from January 1, 2018

IFRS 9 Financial Instruments

IFRS 9 sets out standards regarding classification, measurement and recognition of financial instruments, and hedge accounting. The application of this standard will not have a material impact on the Group's performance or financial position.

IFRS 15 Revenue from Contracts with Customers

IFRS 15 sets out standards on accounting for revenue recognition and, with respect to the impact on the Group's performance and financial position, its application will result in a change of accounting for upfront payment the Group receives from an out-licensing contract. With the application of this standard, upfront payment received, which was formerly recognized over time as deferred income, will be recognized as one-time income on out-licensing. In applying this standard, the Group will adopt a method that recognizes the cumulative effect at the date of initial application, which is permitted as a transitional measure.

The main impact of applying this method on the Group's performance and financial position therefore will be that the deferred income of ¥10.6 billion, after tax effect, posted on the consolidated balance sheet for the year ended December 31, 2017 will be presented as the beginning balance of retained earnings at January 1, 2018.

The impact of the change of accounting on the consolidated income statement and consolidated statement of comprehensive income is uncertain since the total amount of upfront payment the Group will receive in 2018 cannot be reasonably estimated at the time of preparing this document.

There will be no impact on the consolidated statement of cash flows with the change of accounting relating to upfront payment received from an out-licensing contract.

2) Standards that will be effective from January 1, 2019 and beyond

The Group is currently assessing the potential impacts of new standards and interpretations that will be effective from January 1, 2019 and beyond.

2. Operating segment information

The Group has a single business of pharmaceuticals and does not have multiple operating segments. The Group's pharmaceuticals business consists of the research and development of new prescription medicines and the subsequent manufacturing, marketing and distribution activities. These functional activities are integrated and managed effectively.

Information on revenues by geographical area in millions of yen

	2017		2016	
	Sales	Royalties and other operating income	Sales	Royalties and other operating income
Japan	405,280	5,635	393,134	1,998
Overseas	94,028	29,256	79,539	17,109
of which Switzerland	76,359	28,957	62,780	15,563
Total	**499,308**	**34,891**	**472,673**	**19,108**

Information on revenues by major customers in millions of yen

	2017	2016
	Revenues	Revenues
F. Hoffmann-La Roche Ltd.	105,262	78,321
Alfresa Corporation	104,952	103,308
Mediceo Corporation	80,390	79,275
Suzuken Co., Ltd.	52,668	50,248

3. Financing costs and other financial income (expense)

Financing costs in millions of yen

	2017	2016
Interest expense	(5)	(8)
Net interest cost of defined benefit plans	(48)	(8)
Net other financing costs	(56)	(69)
Total financing costs	**(110)**	**(86)**

Other financial income (expense) in millions of yen

	2017	2016
Dividend income	183	201
Gains on sale of equity securities	-	1,341
Losses on sale of equity securities	-	-
Write-downs and impairments of equity securities	(97)	(160)
Net income from equity securities	**86**	**1,382**
Interest income	93	81
Gains on sale of debt securities	-	-
Losses on sale of debt securities	-	-
Net interest income and income from debt securities	**93**	**81**
Foreign exchange gains (losses)	140	452
Gains (losses) on foreign currency derivatives	(406)	(804)
Net foreign exchange gains (losses)	**(266)**	**(352)**
Total other financial income (expense)	**(87)**	**1,111**

4. Other expense

Chugai had filed the Advance Pricing Arrangement covering the certain transactions with F. Hoffmann-La Roche Ltd., to Japanese and Swiss tax authorities. In the first quarter of the current fiscal year, Chugai received a notice of agreement from both tax authorities which includes the instruction that the taxable income of Chugai shall be decreased by a certain amount and that of Roche shall be increased by the same amount in each fiscal year from 2016 to 2020, and if necessary, additional adjustments to the accounts shall be made in 2021.
As a result of this agreement, Chugai will transfer a part of the deducted amount of corporate tax etc., to Roche as the estimated tax payable for Roche, in accordance with the license agreement between Chugai and Roche. In addition, it has posted ¥1,706 million of adjustment from transfer pricing taxation, including the deduction associated with the estimated amount recorded in the previous fiscal year.

5. Income taxes

Income tax expenses in millions of yen

	2017	2016
Current income taxes	(29,884)	(22,804)
Deferred taxes	6,394	2,728
Total income tax (expense)	**(23,490)**	**(20,076)**

Reconciliation of the Group's effective tax rate

	2017	2016
Weighted average expected tax rate	30.3%	32.0%
Tax effect of		
- Non-taxable income/non-deductible expenses	0.5%	0.5%
- Effect of changes in applicable tax rates on deferred tax balances	-%	2.1%
- Research and development tax credits	(5.9)%	(5.5)%
- Transfer pricing taxation related	(4.7)%	(3.6)%
- Other differences	4.0%	1.3%
Group's effective tax rate	**24.2%**	**27.0%**

The change of weighted average expected tax rate is mainly due to the following reason: According to the enactment of "The Act for Partial Amendment of the Income Tax Act, etc."(Act No. 15 of 2016) and "The Act for Partial Amendment of the Local Tax Act, etc."(Act No. 13 of 2016) on March 29, 2016, the statutory tax rate of the Company and the domestic subsidiaries for the current fiscal year has decreased.

Tax effects of other comprehensive income in millions of yen

	2017			2016		
	Pre-tax amount	Tax benefit	After-tax amount	Pre-tax amount	Tax benefit	After-tax Amount
Remeasurements of defined benefit plans	1,313	(396)	916	(4,758)	1,285	(3,472)
Available-for-sale investments	1,734	(530)	1,204	(2,518)	783	(1,735)
Cash flow hedges	(4,756)	1,463	(3,293)	7,588	(2,384)	5,204
Currency translation of foreign operations	3,713	-	3,713	(3,296)	-	(3,296)
Other comprehensive income	**2,004**	**537**	**2,540**	**(2,984)**	**(316)**	**(3,300)**

Income tax assets (liabilities) in millions of yen

	December 31, 2017	December 31, 2016
Current income taxes		
- Assets	717	1
- Liabilities	(18,541)	(10,533)
Net current income tax assets (liabilities)	**(17,824)**	**(10,532)**
Deferred taxes		
- Assets	34,501	27,474
- Liabilities	(9,211)	(9,146)
Net deferred tax assets (liabilities)	**25,290**	**18,328**

Current income taxes: movements in recognized net assets (liabilities) in millions of yen

	2017	2016
Net current income tax assets (liabilities) at January 1	(10,532)	(13,084)
Income taxes paid	22,655	25,339
(Charged) credited to the income statement	(29,884)	(22,804)
Currency translation effects and other	(62)	17
Net current income tax assets (liabilities) at December 31	**(17,824)**	**(10,532)**

Deferred taxes: movements in recognized net assets (liabilities) in millions of yen

	Property, plant and equipment	Intangible assets	Provisions	Employee benefits	Other temporary differences	Total
Year ended December 31, 2016						
At January 1, 2016	(19,295)	(1,235)	252	4,136	32,139	15,997
(Charged) credited to the income statement	600	(1,175)	(180)	149	3,332	2,728
(Charged) credited to other comprehensive income	-	-	-	1,285	(1,601)	(316)
Currency translation effects and other	6	(2)	(4)	(2)	(80)	(81)
At December 31, 2016	**(18,689)**	**(2,411)**	**69**	**5,568**	**33,790**	**18,328**
Year ended December 31, 2017						
At January 1, 2017	(18,689)	(2,411)	69	5,568	33,790	18,328
(Charged) credited to the income statement	(306)	(745)	(31)	168	7,308	6,394
(Charged) credited to other comprehensive income	-	-	-	(396)	933	537
Currency translation effects and other	(7)	2	4	6	27	31
At December 31, 2017	**(19,002)**	**(3,155)**	**43**	**5,346**	**42,058**	**25,290**

Other temporary differences mainly relate to prepaid expenses, amortization of deferred assets and accrued expenses.

Deferred tax assets are not recognized for deductible temporary differences of ¥1,601 million (2016: ¥1,377 million). Deferred tax assets are recognized for tax losses carried forward only to the extent that realization of the related tax benefit is probable.

Unrecognized tax losses: expiry in millions of yen

	2017	2016
Less than one year	-	-
Over one year and less than five years	117	-
Over five years	-	480
Tax losses not recognized in deferred tax assets	**117**	**480**

Deferred tax assets for unused tax credits are recognized only to the extent that realization of the related tax benefit is probable.

Unrecognized unused tax credits: expiry in millions of yen

	2017	2016
Less than one year	-	-
Over one year and less than five years	29	-
Over five years	114	144
Unused tax credits not recognized in deferred tax assets	**143**	**144**

Deferred tax liabilities have not been established for the withholding tax and other taxes that would be payable on the unremitted earnings of wholly owned foreign subsidiaries of the Group, where such amounts are currently regarded as permanently reinvested. The temporary differences relating to the unremitted earnings were ¥2,042 million (2016: ¥1,792 million).

6. Property, plant and equipment

Property, plant and equipment: movements in carrying value of assets in millions of yen

	Land	Buildings and land improvements	Machinery and equipment	Construction in progress	Total
At January 1, 2016					
Cost	9,141	115,036	171,457	12,164	307,798
Accumulated depreciation and impairment	(28)	(55,261)	(98,964)	-	(154,253)
Net book value	**9,112**	**59,775**	**72,494**	**12,164**	**153,545**
Year ended December 31, 2016					
At January 1, 2016	9,112	59,775	72,494	12,164	153,545
Additions	-	71	374	18,981	19,425
Disposals	-	(107)	(311)	-	(418)
Transfers	-	3,282	8,402	(11,684)	-
Depreciation charge	-	(4,247)	(10,514)	-	(14,761)
Impairment charge	-	(51)	(10)	-	(61)
Other	-	-	(497)	-	(497)
Currency translation effects	-	(31)	(121)	(1)	(153)
At December 31, 2016	**9,112**	**58,693**	**69,817**	**19,459**	**157,081**
Cost	9,141	117,163	175,949	19,459	321,712
Accumulated depreciation and impairment	(28)	(58,470)	(106,133)	-	(164,631)
Net book value	**9,112**	**58,693**	**69,817**	**19,459**	**157,081**
Year ended December 31, 2017					
At January 1, 2017	9,112	58,693	69,817	19,459	157,081
Additions	-	1	368	33,916	34,285
Disposals	-	(115)	(230)	-	(345)
Transfers	-	3,523	17,761	(21,284)	-
Depreciation charge	-	(4,164)	(10,385)	-	(14,549)
Impairment charge	-	1	(5)	-	(4)
Other	-	-	(5,034)	-	(5,034)
Currency translation effects	-	(2)	112	25	136
At December 31, 2017	**9,112**	**57,937**	**72,404**	**32,116**	**171,569**
Cost	9,141	119,981	186,617	32,116	347,854
Accumulated depreciation and impairment	(28)	(62,044)	(114,212)	-	(176,285)
Net book value	**9,112**	**57,937**	**72,404**	**32,116**	**171,569**

In 2017, no borrowing costs were capitalized as property, plant and equipment (2016: none).

Impairment charge

The carrying value was reduced to the recoverable amount in use as the recoverable amount of certain assets was less than the carrying value.

Classification of impairment of property, plant and equipment in millions of yen

	2017	2016
Cost of sales	4	55
Marketing and distribution	-	-
Research and development	-	6
General and administration	-	-
Total impairment charge	**4**	**61**

Finance leases

The capitalized cost of property, plant and equipment under finance leases was ¥759 million (2016: ¥768 million) and the net book value of these assets was ¥311 million (2016: ¥439 million). The carrying value of the leasing obligation was ¥336 million (2016: ¥476 million), which is reported as part of Debt (see Note 15).

Operating leases
Group companies are party to a number of operating leases, mainly for machinery and equipment, motor vehicles and property rentals. The arrangements do not impose any significant restrictions on the Group. Total operating lease rental expense was ¥7,013 million (2016: ¥6,979 million).

Operating leases: future minimum lease payments under non-cancellable leases in millions of yen

	December 31, 2017	December 31, 2016
Within one year	4,656	4,271
Between one and five years	9,378	4,538
More than five years	46	216
Total minimum payments	**14,081**	**9,025**

Capital commitments
The Group has non-cancellable capital commitments for the purchase or construction of property, plant and equipment totaling ¥13,995 million (2016: ¥27,339 million).

7. Intangible assets

Intangible assets: movements in carrying value of assets in millions of yen

	Product intangibles: in use	Product intangibles: not available for use	Marketing intangibles: in use	Technology intangibles: in use	Total
At January 1, 2016					
Cost	18,027	8,435	1,460	103	28,026
Accumulated amortization and impairment	(12,061)	(2,112)	(307)	(35)	(14,515)
Net book value	**5,966**	**6,324**	**1,153**	**68**	**13,511**
Year ended December 31, 2016					
At January 1, 2016	5,966	6,324	1,153	68	13,511
Additions	687	7,678	1,574	-	9,939
Disposals	-	-	-	-	-
Transfers	-	-	-	-	-
Amortization charge	(1,207)	-	(384)	(17)	(1,608)
Impairment charge	-	(2,380)	-	-	(2,380)
Currency translation effects	(41)	(121)	-	-	(161)
At December 31, 2016	**5,405**	**11,500**	**2,344**	**51**	**19,299**
Cost	18,479	15,992	3,035	103	37,608
Accumulated amortization and impairment	(13,074)	(4,492)	(691)	(52)	(18,309)
Net book value	**5,405**	**11,500**	**2,344**	**51**	**19,299**
Year ended December 31, 2017					
At January 1, 2017	5,405	11,500	2,344	51	19,299
Additions	25	6,581	1,348	-	7,953
Disposals	-	(452)	-	-	(452)
Transfers	1,100	(1,100)	-	-	-
Amortization charge	(1,243)	-	(525)	(17)	(1,785)
Impairment charge	-	(3,992)	(44)	-	(4,035)
Currency translation effects	25	72	-	-	97
At December 31, 2017	**5,312**	**12,609**	**3,123**	**33**	**21,078**
Cost	19,916	21,241	4,382	103	45,641
Accumulated amortization and impairment	(14,604)	(8,631)	(1,259)	(69)	(24,564)
Net book value	**5,312**	**12,609**	**3,123**	**33**	**21,078**

Significant intangible assets
The product intangibles in use and not available for use are mainly acquired through in-licensing agreements of products with related parties. The remaining amortization periods for product intangibles in use are from 1 to 17 years.

Impairment charge
Impairment charge in each year was mainly related to the cessation of R&D projects and the uncertainty regarding expected profits.

Classification of amortization and impairment expenses in millions of yen

	2017		2016	
	Amortization	Impairment	Amortization	Impairment
Cost of sales	1,327	-	1,270	-
Marketing and distribution	133	-	107	-
Research and development	93	4,035	104	2,380
General and administration	232	-	128	-
Total	**1,785**	**4,035**	**1,608**	**2,380**

Internally generated intangible assets
The Group currently has no internally generated intangible assets from development as the criteria for the recognition as an asset are not met.

Intangible assets with indefinite useful lives
The Group currently has no intangible assets with indefinite useful lives.

Product intangibles not available for use
These mostly represent in-process research and development assets acquired either through in-licensing arrangements or separate purchases. Due to the inherent uncertainties in the research and development processes, intangible assets not available for use are particularly at risk of impairment if the project is not expected to result in a commercialized product.

Impairment of intangible assets
Impairment charges arise from changes in the estimates of the future cash flows expected to result from the use of the asset and its eventual disposal. Factors such as the presence or absence of competition, technical obsolescence or lower than anticipated sales for products with capitalized rights could result in shortened useful lives or impairment.

Potential commitments from alliance collaborations
The Group is party to in-licensing and similar arrangements with its alliance partners. These arrangements may require the Group to make certain milestone or other similar payments dependent upon the achievement of agreed objectives or performance targets as defined in the collaboration agreements.

The Group's current estimate of future commitments for such payments is set out in the table below. These figures are undiscounted and are not risk adjusted, meaning that they include all such potential payments that can arise assuming all projects currently in development are successful. The timing is based on the Group's current best estimate.

Potential future collaboration payments at December 31, 2017 in millions of yen

	Third party	Related party	Total
Within one year	3,029	1,900	4,929
Between one and two years	1,569	2,490	4,059
Between two and three years	771	7,158	7,929
Total	**5,369**	**11,548**	**16,917**

8. Financial non-current assets

Financial non-current assets in millions of yen

	December 31, 2017	December 31, 2016
Available-for-sale investments	11,350	9,706
Total financial non-current assets	**11,350**	**9,706**

Financial non-current assets are held for the Group's business purposes to strengthen and maintain the relationship with business partners. The available-for-sale investments are mainly equity securities in Japanese listed companies.

9. Other non-current assets

Other non-current assets in millions of yen

	December 31, 2017	December 31, 2016
Long-term prepaid expenses	10,064	9,481
Other assets	4,772	4,483
Total other non-current assets	**14,836**	**13,965**

Long-term prepaid expenses are mainly payments to related parties for start-up and validation costs at plants used for outsourcing to the related parties.

10. Inventories

Inventories in millions of yen

	December 31, 2017	December 31, 2016
Raw materials and supplies	55,239	72,459
Work in process	30	21
Intermediates	42,963	46,404
Finished goods	72,904	69,449
Less: Provision for slow-moving and obsolete inventory	(2,080)	(2,894)
Total inventories	**169,056**	**185,440**

Inventories expensed through cost of sales totaled ¥241,487 million (2016: ¥236,048 million). Expenses relating to inventory write-down totaled ¥630 million (2016: ¥2,239 million).

11. Accounts receivable

Accounts receivable in millions of yen

	December 31, 2017	December 31, 2016
Trade receivables – third party	128,884	123,391
Trade receivables – related party	19,593	17,314
Notes receivables	18	20
Other receivables – third party	5,320	5,343
Other receivables – related party	20,475	21,420
Allowances for doubtful accounts	(6)	(5)
Total accounts receivable	**174,284**	**167,482**

12. Marketable securities

Marketable securities in millions of yen

	December 31, 2017	December 31, 2016
Available-for-sale financial assets		
Money market instruments and time accounts over three months	99,018	105,177
Debt securities	5,000	4,999
Total marketable securities	**104,018**	**110,176**

Marketable securities are held for fund management purposes. The money market instruments are mainly certificates of deposit, cash in trust and commercial papers. Debt securities are mainly corporate bonds.

13. Cash and cash equivalents

Cash and cash equivalents in millions of yen

	December 31, 2017	December 31, 2016
Cash - cash in hand and in current or call accounts	136,219	91,580
Cash equivalents - time accounts with a maturity of three months or less	2,855	3,788
Total cash and cash equivalents	**139,074**	**95,368**

14. Other current assets

Other current assets in millions of yen

	December 31, 2017	December 31, 2016
Derivative financial instruments	2,107	10,733
Total financial current assets	**2,107**	**10,733**
Prepaid expenses	9,883	8,662
Other	-	898
Total non-financial current assets	**9,883**	**9,560**
Total other current assets	**11,990**	**20,293**

15. Debt

Debt: movements in carrying value of recognized liabilities in millions of yen

	2017	2016
At January 1	645	735
Increase in debt	1	47
Decrease in debt	(310)	(137)
At December 31	**336**	**645**
Finance lease obligations	336	476
Other debt	-	169
Total debt	**336**	**645**
Long-term debt	207	510
Short-term debt	129	135
Total debt	**336**	**645**

16. Provisions and contingent liabilities

Provisions: movements in recognized liabilities in millions of yen

	Environmental provisions	Other provisions	Total
Year ended December 31, 2016			
At January 1, 2016	421	1,733	2,154
Additional provisions created	12	364	376
Unused amounts reversed	-	(24)	(24)
Utilized	(77)	(209)	(286)
Other	-	(4)	(4)
At December 31, 2016	**356**	**1,859**	**2,216**
Long-term provisions	356	1,783	2,140
Short-term provisions	-	76	76
At December 31, 2016	**356**	**1,859**	**2,216**
Year ended December 31, 2017			
At January 1, 2017	356	1,859	2,216
Additional provisions created	22	23	45
Unused amounts reversed	(33)	(77)	(110)
Utilized	(34)	-	(34)
Other	-	3	3
At December 31, 2017	**311**	**1,808**	**2,120**
Long-term provisions	283	1,758	2,041
Short-term provisions	29	51	79
At December 31, 2017	**311**	**1,808**	**2,120**
Expected outflow of resources			
Within one year	29	51	79
Between one to two years	-	77	77
Between two to three years	-	31	31
More than three years	283	1,650	1,933
At December 31, 2017	**311**	**1,808**	**2,120**

Environmental provisions

Provisions for environmental matters include various separate environmental issues. By their nature the amounts and timings of any outflows are difficult to predict. Significant provisions are discounted where the time value of money is material.

Other provisions

Other provisions arise mainly from asset retirement obligations and removal costs with respect to property, plant and equipment. The timings of cash outflows are by their nature uncertain. Significant provisions are discounted where the time value of money is material.

Contingent liabilities

The operations and earnings of the Group continue, from time to time and in varying degrees, to be affected by political, legislative, fiscal and regulatory developments, including those relating to environmental protection. The industries in which the Group operates are also subject to other risks of various kinds. The nature and frequency of these developments and events, not all of which are covered by insurance, as well as their effect on future operations and earnings, are not predictable.

The Group has entered into strategic alliances with various companies in order to gain access to potential new products or to utilize other companies to help develop the Group's own potential new products. Potential future payments may become due to certain collaboration partners achieving certain milestones as defined in the collaboration agreements. The Group's best estimates for future commitment payments are given in Note 7.

17. Other non-current liabilities

Other non-current liabilities in millions of yen

	December 31, 2017	December 31, 2016
Deferred income	14,127	14,352
Other long-term liabilities	1,796	1,191
Total other non-current liabilities	**15,923**	**15,543**

18. Accounts payable

Accounts payable in millions of yen

	December 31, 2017	December 31, 2016
Trade payables – third party	9,761	9,564
Trade payables – related party	28,673	32,965
Other taxes payable	4,438	4,343
Accounts payable - purchase of property, plant and equipment	5,642	4,250
Other payables – third party	2,967	6,819
Other payables – related party	12,037	14,405
Total accounts payable	**63,518**	**72,346**

19. Other current liabilities

Other current liabilities in millions of yen

	December 31, 2017	December 31, 2016
Deferred income	1,598	1,387
Accrued bonus and related items	12,480	10,312
Derivative financial instruments	1,652	6,347
Other accrued liabilities	24,905	22,523
Total other current liabilities	**40,635**	**40,570**

20. Equity attributable to Chugai shareholders

Changes in equity attributable to Chugai shareholders in millions of yen

	Share capital	Capital surplus	Retained earnings	Other reserves			Total
				Fair value reserve	Hedging reserve	Translation reserve	
Year ended December 31, 2016							
At January 1, 2016	72,967	62,567	488,954	6,599	(1,630)	(3,600)	625,857
Net income attributable to Chugai Shareholders	-	-	53,592	-	-	-	53,592
Available-for-sale investments							
- Fair value gains (losses) taken to equity	-	-	-	(1,337)	-	-	(1,337)
- Transferred to income statement on sale or impairment	-	-	-	(1,181)	-	-	(1,181)
- Income taxes	-	-	-	783	-	-	783
Cash flow hedges							
- Effective portion of fair value gains (losses) taken to equity	-	-	-	-	(3,619)	-	(3,619)
- Transferred to income statement	-	-	-	-	(635)	-	(635)
- Transferred to initial carrying amount of hedged items	-	-	-	-	11,841	-	11,841
- Income taxes	-	-	-	-	(2,384)	-	(2,384)
Currency translation of foreign operations							
- Exchange differences	-	-	-	-	-	(3,296)	(3,296)
- Non-controlling interests	-	-	-	-	-	101	101
Defined benefit plans							
- Remeasurement gains (losses)	-	-	(4,758)	-	-	-	(4,758)
- Income taxes	-	-	1,285	-	-	-	1,285
Other comprehensive income, net of tax	**-**	**-**	**(3,472)**	**(1,735)**	**5,204**	**(3,195)**	**(3,199)**
Total comprehensive income	**-**	**-**	**50,119**	**(1,735)**	**5,204**	**(3,195)**	**50,393**
Dividends	-	-	(31,675)	-	-	-	(31,675)
Equity compensation plans	-	276	-	-	-	-	276
Own equity instruments	-	657	-	-	-	-	657
At December 31, 2016	**72,967**	**63,500**	**507,399**	**4,864**	**3,574**	**(6,796)**	**645,508**

Changes in equity attributable to Chugai shareholders in millions of yen

	Share capital	Capital surplus	Retained earnings	Other reserves			Total
				Fair value reserve	Hedging reserve	Translation reserve	
Year ended December 31, 2017							
At January 1, 2017	72,967	63,500	507,399	4,864	3,574	(6,796)	645,508
Net income attributable to Chugai Shareholders	-	-	72,713	-	-	-	72,713
Available-for-sale investments							
- Fair value gains (losses) taken to equity	-	-	-	1,639	-	-	1,639
- Transferred to income statement on sale or impairment	-	-	-	95	-	-	95
- Income taxes	-	-	-	(530)	-	-	(530)
Cash flow hedges							
- Effective portion of fair value gains (losses) taken to equity	-	-	-	-	(1,415)	-	(1,415)
- Transferred to income statement	-	-	-	-	(114)	-	(114)
- Transferred to initial carrying amount of hedged items	-	-	-	-	(3,228)	-	(3,228)
- Income taxes	-	-	-	-	1,463	-	1,463
Currency translation of foreign operations							
- Exchange differences	-	-	-	-	-	3,713	3,713
- Non-controlling interests	-	-	-	-	-	(100)	(100)
Defined benefit plans							
- Remeasurement gains (losses)	-	-	1,313	-	-	-	1,313
- Income taxes	-	-	(396)	-	-	-	(396)
Other comprehensive income, net of tax	**-**	**-**	**916**	**1,204**	**(3,293)**	**3,613**	**2,440**
Total comprehensive income	**-**	**-**	**73,630**	**1,204**	**(3,293)**	**3,613**	**75,154**
Dividends	-	-	(30,055)	-	-	-	(30,055)
Equity compensation plans	3	102		-	-	-	105
Own equity instruments	-	1,213		-	-	-	1,213
At December 31, 2017	**72,970**	**64,815**	**550,974**	**6,068**	**281**	**(3,183)**	**691,924**

Share capital (Number of shares)

	December 31, 2017	December 31, 2016
Authorized shares	799,805,050	799,805,050
Issued shares (Non-par value common stock)	559,685,889	559,685,889

Dividends

Date of resolution	Type of shares	Total dividends (millions of yen)	Dividend per share (yen)	Record date	Effective date
March 24, 2016 (Resolution of the Annual General Meeting of shareholders)	Common stock	17,473	32	December 31, 2015	March 25, 2016
July 21, 2016 (Board resolution)	Common stock	14,202	26	June 30, 2016	September 1, 2016
March 23, 2017 (Resolution of the Annual General Meeting of shareholders)	Common stock	14,203	26	December 31, 2016	March 24, 2017
July 27, 2017 (Board resolution)	Common stock	15,852	29	June 30, 2017	September 1, 2017
March 22, 2018 (Resolution of the Annual General Meeting of shareholders)	Common stock	18,044	33	December 31, 2017	March 23, 2018

Own equity instruments

	Number of shares	
	2017	2016
At January 1	13,417,953	13,641,743
Issue of common stocks	-	-
Exercises of equity compensation plans	(389,600)	(225,800)
Purchase/Disposal of own equity instruments	4,594	2,010
Retirement of own equity instruments	(123,000)	-
At December 31	**12,909,947**	**13,417,953**
Book value (millions of yen)	**30,233**	**31,413**

Other reserves

Fair value reserve: The fair value reserve represents the cumulative net change in the fair value of available-for-sale financial assets until the asset is sold, impaired or otherwise disposed of.

Hedging reserve: The hedging reserve represents the effective portion of the cumulative net change in the fair value of cash flow hedging instruments related to hedged transactions that have not yet occurred.

Translation reserve: The translation reserve represents the cumulative currency translation differences relating to the consolidation of foreign subsidiaries of the Group that use functional currencies other than the Japanese yen.

21. Non-controlling interests

Changes in equity attributable to non-controlling interests in millions of yen

	2017	2016
At January 1	989	1,414
Net income attributable to non-controlling interests	827	780
Currency translation of foreign operations	100	(101)
Other comprehensive income, net of tax	**100**	**(101)**
Total comprehensive income	**927**	**680**
Dividends to non-controlling shareholders	(944)	(1,105)
At December 31	**973**	**989**

Non-controlling interests are attributable to the minority shareholders of Chugai sanofi-aventis S.N.C.

22. Employee benefits

Employee benefits expense in millions of yen

	2017	2016
Wages and salaries	70,595	66,976
Social security costs	9,046	8,358
Defined contribution plans	1,029	1,099
Operating expenses for defined benefit plans	4,231	4,145
Equity compensation plans	415	433
Other employee benefits	4,143	3,939
Employee benefits expense included in operating results	**89,459**	**84,951**
Net interest cost of defined benefit plans	48	8
Total employee benefits expense	**89,507**	**84,959**

Other employee benefits consist mainly of welfare costs.

23. Post-employment benefits plans

Post-employment benefit plans are classified as “defined contribution plans” if the Group pays fixed contributions into third-party financial institutions and will have no further legal or constructive obligation to pay further contributions. All other plans are classified as “defined benefit plans”, even if Chugai’s potential obligation is relatively minor or has a relatively remote possibility of arising.

Employees are covered by defined contribution and defined benefit plans sponsored by Group companies, most of which are classified as defined benefit plans.

A resolution was passed in the 98th Annual General Meeting of shareholders held in March 2009 to abolish the retirement benefits system for directors. In addition, a resolution was passed in the 95th Annual General Meeting of shareholders held in March 2006 to abolish the retirement benefits system for outside directors and audit & supervisory board members (including outside audit & supervisory board members).

Defined contribution plans
Defined contribution plans are funded through payments by the Group to funds administered by third parties. The Group’s expenses for these plans were ¥1,029 million (2016: ¥1,099 million).

Defined benefit plans
The Group has defined benefit plans mainly comprising a corporate pension fund and a lump-sum retirement benefit plan. Under the corporate pension fund, employees can receive a lump-sum payment based on the number of accumulated points received during their years of service. Employees with over a certain period of service can receive part of or all of the payment as certain annuity or life annuity. Under the lump-sum retirement benefit plan, employees

can receive a lump-sum payment based on the number of accumulated points received during their years of service. A retirement benefit trust has been established for the lump-sum retirement benefit plan. Certain employees may be entitled to additional special retirement benefits apart from the defined benefit plans based on the conditions under which termination occurs.

The corporate pension fund and retirement benefit plan trust are independent of the Group and are funded only by payments from the Group.

A pension asset management strategy is developed to optimize expected returns and to manage risks through adopting investment strategies from a long-term perspective. For this purpose, the Group focusses on long-term objectives which are not influenced by fluctuations in short-term yields, and maintains a well-diversified portfolio. The funding status is closely monitored at the corporate level and valuations at the balance sheet date are carried out annually.

The defined benefit obligation is calculated using the projected unit credit method. If potential assets arise since defined benefit plans are over-funded, the recognition of pension assets is limited to the present value of any economic benefits available from refunds from the plans or reductions in future contributions to the plan.

Defined benefit plans: income statement in millions of yen

	2017	2016
Current service cost	4,231	3,983
Past service cost	-	139
Settlement loss	-	23
Total operating expenses	**4,231**	**4,145**
Net interest cost of defined benefit plans	48	8
Total expense recognized in income statement	**4,279**	**4,154**

Defined benefit plans: funding status in millions of yen

	December 31, 2017	December 31, 2016
Fair value of plan assets	78,516	76,551
Defined benefit obligation	(87,809)	(85,341)
Over (under) funding	**(9,292)**	**(8,790)**
Defined benefit plan assets	-	-
Defined benefit plan liabilities	(9,292)	(8,790)
Net recognized asset (liability)	**(9,292)**	**(8,790)**

Defined benefit plans: fair value of plan assets in millions of yen

	2017	2016
At January 1	76,551	76,543
Interest income on plan assets	538	815
Remeasurements on plan assets	2,336	155
Currency translation effects	10	(10)
Employer contributions	2,243	2,209
Benefits paid – funded plans	(3,162)	(3,162)
At December 31	**78,516**	**76,551**
Composition of plan assets		
- Equity securities	13,426	11,267
- Debt securities	47,112	46,046
- Cash and cash equivalents	7,685	8,866
- Other investments	10,293	10,373
Total plan assets	**78,516**	**76,551**

Equity securities and debt securities have quoted market prices (Level 1 of fair value hierarchy).

Defined benefit plans: present value of defined benefit obligation in millions of yen

	2017	2016
At January 1	85,341	78,901
Current service cost	4,231	3,983
Past service cost	-	139
Settlement loss	-	(67)
Interest cost	586	824
Remeasurements – demographic assumption	513	(1)
Remeasurements – financial assumptions	76	4,694
Remeasurements – experience adjustments	434	220
Currency translation effects	30	(18)
Benefits paid – funded plans	(3,403)	(3,334)
At December 31	**87,809**	**85,341**
Duration in years	15.2	15.6

Actuarial assumptions

Actuarial assumptions are unbiased and mutually compatible estimates of variables that determine the ultimate cost of providing post-employment benefits. They are set on an annual basis by the responsible departments of the Group based on advice from actuaries. Actuarial assumptions consist of demographic assumptions on matters such as mortality and employee turnover, and financial assumptions on matters such as interest rates.

Demographic assumptions: Demographic assumptions relate to mortality and employee turnover rates. Mortality rates are based on the standard mortality rate stated in the Ordinance for Enforcement of the Defined-Benefit Corporate Pension Act. Rates of employee turnover are based on historical behavior within the Group companies.

Financial assumptions: Discount rates are determined mainly with reference to interest rates on high-quality corporate bonds and reflect the period over which the obligations are to be settled.

	December 31, 2017	December 31, 2016
Discount rates (%)	0.70	0.71

Defined benefit plans: sensitivity of defined benefit obligation to actuarial assumption in millions of yen

The impact resulting from changes of actuarial assumption on the defined benefit obligation is shown in the table below. It is based on the assumption that variables other than the stated assumption used for the calculation are held constant.

	2017
Discount rates	
- 0.25% increase	(3,301)
- 0.25% decrease	3,516
Life expectancy	
- 1 year increase	1,553

Future cash flows

Based on the most recent actuarial valuations, the Group expects that employer contributions for defined benefit plans in 2018 will be approximately ¥2,306 million.

24. Equity compensation plans

The Group operates equity-settled equity compensation plans for directors and certain employees. IFRS 2 "Share-based Payment" requires that the value be estimated by fair value at grant date and recorded as an expense over the vesting period. Effective from the current fiscal year, for the purpose of further promoting shared value with shareholders and providing an incentive to sustainably increase the Group's corporate value, strengthening linkage between their compensation and mid- to long-term business performance, a restricted stock compensation plan (the "Compensation Plan") was introduced in place of the existing stock option compensation plans.

Expenses for equity compensation plans in millions of yen

	2017	2016
Cost of sales	3	3
Marketing and distribution	42	48
Research and development	70	71
General and administration	300	311
Total	**415**	**433**
Equity-settled plans		
- Chugai common stock options	212	311
- Chugai stock options as stock-based compensation	34	122
- Tenure-based restricted stock	134	-
- Performance-based restricted stock	35	-

Cash inflow from equity compensation plans in millions of yen

	2017	2016
Equity-settled plans		
- Exercises of Chugai common stock options	922	506
- Exercises of Chugai stock options as stock-based compensation	0	-

(1) Stock options

Chugai common stock options

The Group has issued stock acquisition rights to directors and certain employees as common stock options since 2003. Each right entitles the holder to purchase 100 Chugai shares at a specified exercise price. The rights are non-tradable and have an exercise period of around ten years after receiving the rights under the condition of approximately two years of continuous service of the holder after the grant date.

Chugai common stock options – movement in number of rights outstanding

	2017		2016	
	Number of rights	Weighted average exercise price (yen)	Number of rights	Weighted average exercise price (yen)
Outstanding at January 1	15,966	278,016	15,698	252,938
Granted	-	-	2,764	374,600
Forfeited	(40)	381,125	(40)	387,650
Exercised	(3,803)	242,506	(2,258)	224,268
Expired	(396)	302,978	(198)	228,833
Outstanding at December 31	**11,727**	**288,337**	**15,966**	**278,016**
- of which exercisable	9,013	262,362	10,428	219,730

Chugai common stock options – terms of rights outstanding at December 31, 2017

Year of grant	Rights outstanding			Rights exercisable	
	Number outstanding	Weighted average years remaining contractual life	Weighted average exercise price (yen)	Number exercisable	Weighted average exercise price (yen)
2009	260	1.23	169,600	260	169,600
2010	647	2.31	188,100	647	188,100
2011	550	3.40	139,700	550	139,700
2012	1,739	4.31	152,800	1,739	152,800
2013	1,364	5.32	250,000	1,364	250,000
2014	2,018	6.31	267,400	2,018	267,400
2015	2,435	7.31	400,700	2,435	400,700
2016	2,714	8.31	374,600	-	-
Total	**11,727**	**6.10**	**288,337**	**9,013**	**262,362**

Chugai stock options as stock-based compensation

The Group has issued stock acquisition rights to directors as stock options as stock-based compensation since 2009 in lieu of the retirement benefit system for directors which was abolished. Each right entitles the holder to purchase 100 Chugai shares at an exercise price of ¥100. The rights are non-tradable and have an exercise period of 30 years after receiving the rights, which may be vested upon the holder's retirement as a director of Chugai.

Chugai stock options as stock-based compensation – movement in number of rights outstanding

	2017		2016	
	Number of rights	Weighted average exercise price (yen)	Number of rights	Weighted average exercise price (yen)
Outstanding at January 1	4,078	100	3,724	100
Granted	-	-	354	100
Forfeited	-	-	-	-
Exercised	(93)	100	-	-
Expired	-	-	-	-
Outstanding at December 31	**3,985**	**100**	**4,078**	**100**
- of which exercisable	-	-	-	-

Chugai stock options as stock-based compensation – terms of rights outstanding at December 31, 2017

Year of grant	Rights outstanding			Rights exercisable	
	Number outstanding	Weighted average years remaining contractual life	Weighted average exercise price (yen)	Number exercisable	Weighted average exercise price (yen)
2009	519	21.31	100	-	-
2010	579	22.31	100	-	-
2011	672	23.40	100	-	-
2012	723	24.31	100	-	-
2013	457	25.32	100	-	-
2014	422	26.31	100	-	-
2015	287	27.31	100	-	-
2016	326	28.31	100	-	-
Total	**3,985**	**24.35**	**100**	**-**	**-**

Exercise of stock acquisition rights

	2017		2016	
	Number of rights	Weighted average share price (yen)	Number of rights	Weighted average share price (yen)
Chugai common stock options	3,803	4,512	2,258	3,546
Chugai stock options as stock-based compensation	93	3,950	-	-

(2) Restricted stock compensation plan

Under the Compensation Plan, the restricted stocks to be provided consist of "tenure-based restricted stock" for Executive Directors (excluding non-executive Directors, the "Eligible Directors") as well as certain Vice Presidents and other employees (collectively, the "Eligible Directors and Officers"), which require continuous service for a certain period as Eligible Directors and Officers, of Chugai, and "performance-based restricted stock" for the Eligible Directors which require the attainment of Chugai's mid- to long-term business performance target in addition to the aforementioned continuous service. The Eligible Directors and Officers, shall make in–kind contribution of all monetary compensation claims or monetary claims to be provided by Chugai according to the Compensation Plan, and shall, in return, receive shares of common stock of Chugai that shall be issued by Chugai. For the issuance of shares of common stock of Chugai under the Compensation Plan, Chugai and each Eligible Directors and Officers, shall make an agreement on allotment of restricted stocks, which provide that (1) The Eligible Directors and Officers, shall not transfer, create a security interest on, or otherwise dispose of the allotted shares during a certain restriction period, and (2) Chugai shall take back all or part of the allotted shares without cost in case where certain events happen.

	Tenure-based restricted stock	Performance-based restricted stock
The number of allotted shares	74,900 shares	48,100 shares
Fair value at the grant date	3,820 yen	2,910 yen
Evaluation method	Market price	Monte carlo simulation
Allottees	Directors of Chugai Employees of Chugai Directors of Chugai's subsidiaries Employees of Chugai's subsidiaries	Directors of Chugai
Settlement method	Equity settlement	
Transfer restriction period	3 years	
Conditions for releasing transfer restriction	On the condition that the Eligible Directors and Officers maintain their positions continuously during the transfer restriction period, Chugai shall release the transfer restriction for all of the allotted shares at the expiration of the transfer restriction period.	On the condition that the Eligible Directors maintain their positions continuously during the transfer restriction period, Chugai shall release the transfer restriction for the number of allotted shares, which is calculated by multiplying the number of shares that the Eligible Directors obtain at the expiration of the transfer restriction period by the release rate that is determined by the growth rate on the three-year Total Shareholders Return (TSR) for a peer group as a performance goal decided by the Board of Directors in advance (the "Evaluation Period"). The release rate is applied against the number of shares that is provided at the beginning of the restriction period by multiplying the maximum coefficient of 150%, ranging from 0% to 150% separately set by Chugai's Board, and is set from 0% to 100%.

The TSR calculation formula is as follows:

TSR= (Increase in the stock price during the Evaluation Period (B-A) + Dividends during the Evaluation Period) ÷ Initial stock price (A)

A: Initial stock price (Average closing price for the three months prior to the start of the Evaluation Period)

B: Final stock price (Average closing price for the three months prior to the end of the Evaluation Period)

25. Earnings per share

Basic earnings per share

	2017	2016
Net income attributable to Chugai shareholders (millions of yen)	**72,713**	**53,592**
Weighted average number of common stock	559,685,889	559,685,889
Weighted average number of treasury stock	(13,147,406)	(13,506,255)
Weighted average number of shares in issue	**546,538,483**	**546,179,634**
Basic earnings per share (yen)	**133.04**	**98.12**

Diluted earnings per share

	2017	2016
Net income attributable to Chugai shareholders (millions of yen)	**72,713**	**53,592**
Weighted average number of shares in issue	546,538,483	546,179,634
Adjustment for assumed exercise of equity compensation plans, where dilutive	886,414	821,617
Weighted average number of shares in issue used to calculate diluted earnings per share	**547,424,897**	**547,001,251**
Diluted earnings per share (yen)	**132.83**	**97.97**

There were no rights in equity compensation plans, which are anti-dilutive, and therefore excluded from the calculation of diluted earnings per share (2016: 5,538 rights).

26. Statement of cash flows

Cash flows from operating activities

Cash flows from operating activities arise from the Group's primary activities including research and development, manufacturing and sales in the Pharmaceuticals business. These are calculated by the indirect method by adjusting the Group's operating profit for any operating income and expenses that are not cash flows (for example depreciation, amortization and impairment) in order to derive the cash generated from operations. Operating cash flows also include income taxes paid on all activities.

Cash generated from operations in millions of yen

	2017	2016
Net income	73,541	54,372
Financing costs	110	86
Other financial income (expense)	87	(1,111)
Other expense	1,706	3,460
Income taxes	23,490	20,076
Operating profit	**98,934**	**76,884**
Depreciation of property, plant and equipment	14,549	14,761
Amortization of intangible assets	1,785	1,608
Impairment of property, plant and equipment	4	61
Impairment of intangible assets	4,035	2,380
Operating expense for defined benefit plans	4,231	4,122
Operating expense for equity-settled equity compensation plans	415	433
Net (income) expense for provisions	(11)	12
Inventories write-down	630	2,239
Other adjustments	205	298
Cash generated from operations	**124,776**	**102,797**

Cash flows from investing activities
Cash flows from investing activities are principally those arising from the Group's investments in property, plant and equipment and intangible assets. Cash flows connected with the Group's portfolio of marketable securities and other investments are also included, as are any interest and dividend payments received in respect of these securities and investments.

Interest and dividends received in millions of yen

	2017	2016
Interest received	88	100
Dividends received	183	201
Total	**271**	**301**

Cash flows from financing activities
Cash flows from financing activities are primarily dividend payments to Chugai shareholders.

Significant non-cash transactions
There were no significant non-cash transactions (2016: none).

27. Risk management

(1) Financial risk management
The Group is exposed to various financial risks arising from its underlying operations and corporate finance activities. The Group's financial risk exposures are predominantly related to changes in foreign exchange rates, interest rates and equity prices as well as the creditworthiness and the solvency of the Group's counterparties.

Financial risk management within the Group is governed by policies approved by the board of directors of Chugai. These policies cover credit risk, liquidity risk and market risk. The policies provide guidance on risk limits, type of authorized financial instruments and monitoring procedures. Policy implementation and day-to-day risk management are carried out by the relevant functions and regular reporting on these risks is performed by the relevant finance & accounting and controlling functions within Chugai.

1) Credit risk
Accounts receivable are exposed to customer credit risk. The main accounts receivable are trade receivables. The management of trade receivables is focused on the assessment of country risk, setting of credit limits, ongoing credit evaluation and account monitoring procedures. As part of the credit risk management, sales administration departments regularly monitor the financial position of major customers by checking payment term and balances of trade receivables for each customer according to the accounting manuals to ensure early identification and mitigation of overdue balances and potential bad debts associated with the deterioration of customers' financial position.

The objective of the management of trade receivables is to sustain the growth and profitability of the Group by optimizing asset utilization while maintaining risks at an acceptable level. The Group obtains credit insurance and similar enhancements when appropriate to protect the collection of trade receivables. No collateral was held for trade receivables (2016: none).

Of the Group's accounts receivable, trade receivables from third parties are mainly to Japanese customers, of which major customers account for 71 % as of December 31, 2017.

Trade receivables: major customers in millions of yen

	December 31, 2017	December 31, 2016
Alfresa Corporation	31,492	30,979
Mediceo Corporation	24,656	23,767
Suzuken Co., Ltd.	22,192	20,115
Toho Pharmaceutical Co., Ltd.	13,592	12,688
Total	**91,932**	**87,549**

Aging of accounts receivable that are not impaired in millions of yen

	December 31, 2017	December 31, 2016
Neither overdue nor impaired	174,215	167,276
Overdue less than 1 month	64	199
Overdue 1-3 months	4	6
Overdue 4-6 months	1	1
Overdue 7-12 months	-	-
Overdue more than 1 year	-	-
Total	**174,284**	**167,482**

Derivative transactions and money market instruments are restricted to financial institutions with high credit ratings in an effort to mitigate the counterparty risks.

The maximum exposure to credit risk resulting from financial activities, without taking into account any collateral held or other credit enhancements, is equal to the carrying value of the Group's financial assets.

Impairment losses by asset class
The Group's impairment loss on available-for-sale investments was ¥97 million (2016: ¥160 million).

2) Liquidity risk
Liquidity risk arises through a surplus of financial obligations over available financial assets due at any point in time. The Group's approach to liquidity risk is to maintain sufficient readily available reserves in order to meet its liquidity requirements at any point in time. The Group manages liquidity risks based on a cash management plan prepared and updated as appropriate by finance and accounting departments based on the reporting from each department.

Chugai is rated as highly creditable by more than one major credit rating agency. The ratings will permit efficient access to the international capital markets in the event of major financing requirements. Chugai has unused committed credit lines with various financial institutions totaling ¥40,000 million (2016: ¥40,000 million).

Contractual maturities of financial liabilities in millions of yen

	Total	0-3 months	4-6 months	7-12 months	Over 1 year
At December 31, 2017					
Accounts payable	63,518	61,447	2,029	43	-
Other current liabilities					
- Derivative financial instruments*	1,652	625	324	478	225
Total financial liabilities	**65,170**	**62,072**	**2,353**	**521**	**225**
At December 31, 2016					
Accounts payable	72,346	68,238	4,105	1	2
Other current liabilities					
- Derivative financial instruments*	6,347	2,007	1,190	2,188	963
Total financial liabilities	**78,693**	**70,245**	**5,295**	**2,189**	**965**

*Derivative financial instruments are held for risk management purposes and will not be canceled before the maturity date.

3) Market risk
Market risk arises from changing market prices, mainly due to foreign exchange rates and interest rates, of the Group's financial assets or financial liabilities which affect the Group's net income and equity.

Foreign exchange risk: Accounts receivable and accounts payable denominated in foreign currencies are exposed to foreign exchange risk. The objective of the Group's foreign exchange risk management activities is to preserve the economic value of its current and future assets and to minimize the volatility of the Group's financial result. The Group enters into derivative transactions such as foreign exchange forward contracts and currency options to reduce the risk of foreign currency exchange fluctuations related to assets and liabilities denominated in foreign currencies. Some of these transactions qualify as cash flow hedges at the point that the forecast transaction is expected.

When making use of derivatives for hedging foreign exchange risk on assets and liabilities denominated in foreign currencies, Chugai conducts such operations in accordance with its internal regulations and monthly reports are

prepared on the balance of such transactions, valuation gains and losses, and other related matters at fair value. Consolidated subsidiaries do not utilize derivative transactions.

Sensitivity analysis: Chugai has financial instruments denominated in currencies other than its functional currency. The table below shows the impact to profit before taxes resulting from a 1% decrease of the Swiss franc, euro and US dollar against the Japanese yen, which is Chugai's functional currency. The effective portion of derivative financial instruments for which hedge accounting is applied is excluded from the calculation. All calculations are based on the assumption that exchange rates for other currencies are constant and there are no changes in other variables such as interest rates.

Foreign currency sensitivity analysis

	2017	2016
Average exchange rate (yen per each currency)		
CHF	113.90	110.46
EUR	126.39	120.42
USD	112.17	108.83
Profit before taxes (millions of yen)		
CHF	(256)	(237)
EUR	9	12
USD	(187)	(140)

(Note) Positive numbers are the amount of positive impact on profit before taxes resulting from a 1% decrease of each currency against the Japanese yen. The amounts above do not reflect the impact on Chugai's cash flows or forecast result.

The impact resulting from a 1% decrease of each currency against the Japanese yen on the financial instruments denominated in foreign currency is shown in the tables below.

	2017			2016		
	Exposure (m CHF)	Exposure (m YEN)	Impact (m YEN)	Exposure (m CHF)	Exposure (m YEN)	Impact (m YEN)
CHF						
Accounts receivable	227	26,165	(262)	210	23,877	(239)
Accounts payable	(279)	(32,224)	322	(403)	(45,868)	459
Financial non-current assets	-	-	-	-	-	-
Cash and cash equivalents	40	4,629	(46)	55	6,268	(63)
Notional amounts of derivative financial instruments						
- Effective portion of hedge	230	27,007	(270)	330	39,423	(394)
- Other than above	-	-	-	-	-	-
Total	**218**	**25,576**	**(256)**	**192**	**23,700**	**(237)**

	Exposure (m EUR)	Exposure (m YEN)	Impact (m YEN)	Exposure (m EUR)	Exposure (m YEN)	Impact (m YEN)
EUR						
Accounts receivable	10	1,385	(14)	6	788	(8)
Accounts payable	(17)	(2,250)	23	(17)	(2,023)	20
Financial non-current assets	-	-	-	-	-	-
Cash and cash equivalents	-	-	-	-	-	-
Notional amounts of derivative financial instruments						
- Effective portion of hedge	-	-	-	-	-	-
- Other than above	-	-	-	-	-	-
Total	**(6)**	**(865)**	**9**	**(10)**	**(1,235)**	**12**

	Exposure (m USD)	Exposure (m YEN)	Impact (m YEN)	Exposure (m USD)	Exposure (m YEN)	Impact (m YEN)
USD						
Accounts receivable	32	3,636	(36)	56	6,586	(66)
Accounts payable	(98)	(11,043)	110	(36)	(4,206)	42
Financial non-current assets	-	-	-	-	-	-
Cash and cash equivalents	-	-	-	-	-	-
Notional amounts of derivative financial instruments						
- Effective portion of hedge	240	26,139	(261)	100	11,581	(116)
- Other than above	-	-	-	-	-	-
Total	**174**	**18,732**	**(187)**	**120**	**13,961**	**(140)**

Interest rate risk: The amounts of debt and loans were insignificant and therefore the Group is not exposed to material interest rate risk.

(2) Financial instruments fair value

Carrying value and fair value of financial instruments

The Group's financial instruments are mainly comprised of financial non-current assets, accounts receivable, marketable securities, cash and cash equivalents, derivative financial instruments included in other current assets, accounts payable, derivative financial instruments included in other current liabilities and debt. The carrying values of these financial instruments are equal to or reasonably approximate fair values.

Fair value hierarchy

The table below analyses financial instruments carried at fair value, by valuation method. The different levels have been defined as follows:

- Level 1 – quoted prices (unadjusted) in active markets for identical assets and liabilities.
- Level 2 – observable inputs other than quoted prices in active markets for identical assets and liabilities.
- Level 3 – fair value determined using valuation method which includes unobservable inputs.

Fair value hierarchy of financial instruments in millions of yen

	Level 1	Level 2	Level 3	Total
At December 31, 2017				
Marketable securities:				
- Money market instruments and time accounts over 3 months	-	99,018	-	99,018
- Debt securities	5,000	-	-	5,000
Other current assets				
- Derivative financial instruments	-	2,107	-	2,107
Financial non-current assets				
- Available-for-sale investments	9,734	-	1,616	11,350
Financial assets recognized at fair value	**14,735**	**101,125**	**1,616**	**117,476**
Other current liabilities				
- Derivative financial instruments	-	(1,652)	-	(1,652)
Financial liabilities recognized at fair value	**-**	**(1,652)**	**-**	**(1,652)**
At December 31, 2016				
Marketable securities:				
- Money market instruments and time accounts over 3 months	-	105,177	-	105,177
- Debt securities	4,999	-	-	4,999
Other current assets				
- Derivative financial instruments	-	10,733	-	10,733
Financial non-current assets				
- Available-for-sale investments	8,154	-	1,552	9,706
Financial assets recognized at fair value	**13,153**	**115,910**	**1,552**	**130,615**
Other current liabilities				
- Derivative financial instruments	-	(6,347)	-	(6,347)
Financial liabilities recognized at fair value	**-**	**(6,347)**	**-**	**(6,347)**

Level 1 financial assets consist of corporate bonds and quoted shares. Level 2 financial assets consist primarily of certificates of deposit, cash in trust, commercial paper and derivative financial instruments.

Fair values Level 2 financial assets are determined as follows:
・Marketable securities and derivative financial instruments are based on valuation models that use observable market data for interest rates, yield curves, foreign exchange rates and implied volatilities for similar instruments at the measurement date.

The Group recognizes transfers between levels of the fair value hierarchy as of the end of the reporting period during which the transfer has occurred. There were no significant transfers between Level 1 and Level 2 and vice versa.

Level 3 financial assets consist of unquoted shares. Valuation is based on latest financial data.

Reconciliation of financial instruments classified into level 3 in millions of yen

	Fair value through other comprehensive income	Fair value through income statement	Total
At January 1, 2016	1,453	–	1,453
Gains or losses	97	–	97
Purchases	–	–	–
Disposals	–	–	–
Transfers	–	–	–
Currency translation effects	1	–	1
At December 31, 2016	**1,552**	**–**	**1,552**
At January 1, 2017	1,552	–	1,552
Gains or losses	64	–	64
Purchases	–	–	–
Disposals	–	–	–
Transfers	–	–	–
Currency translation effects	(1)	–	(1)
At December 31, 2017	**1,616**	**–**	**1,616**

(3) Derivative financial instruments

Derivative financial instruments in millions of yen

Assets	December 31, 2017	December 31, 2016
Forward exchange contracts	2,107	10,733
Total derivative financial instruments	**2,107**	**10,733**

Liabilities	December 31, 2017	December 31, 2016
Forward exchange contracts	(1,652)	(6,347)
Total derivative financial instruments	**(1,652)**	**(6,347)**

Hedge accounting

The Group has the following cash flow hedges which are designated in a qualifying hedge relationship.

Cash flow hedges

The Group is exposed to foreign exchange risk from transactions for inventories and other materials in foreign currencies with foreign related parties. The Group has entered into foreign exchange forward contracts and currency options to hedge a part of foreign exchange risk. Such instruments are recorded as fair value assets of ¥456 million (2016: fair value liabilities of ¥5,162 million). There was no ineffective portion.

The present value of expected cash flows from qualifying cash flow hedges is shown in the table below.

Present value of expected cash flows of qualifying cash flow hedges in millions of yen

	Total	0-6 months	7-12 months	Over 1 Year
Year ended December 31, 2017				
Cash inflows	242,308	107,794	96,290	38,224
Cash outflows	(241,852)	(107,570)	(96,042)	(38,239)
Total cash inflow (outflow)	**456**	**223**	**248**	**(15)**
Year ended December 31, 2016				
Cash inflows	175,272	43,872	94,775	36,625
Cash outflows	(170,110)	(42,697)	(91,670)	(35,742)
Total cash inflow (outflow)	**5,162**	**1,174**	**3,105**	**883**

(4) Capital management
The Group defines the capital that it manages as the Group's total capitalization, being the sum of debt plus equity including non-controlling interests. The Group's objectives when managing capital are:
- To safeguard the Group's ability to continue as a going concern, so that it can continue to provide benefits for patients and returns to investors.
- To provide an adequate return to investors based on the level of risk undertaken.
- To have available the necessary financial resources to allow the Group to invest in areas that may deliver future benefits for patients and returns to investors.
- To maintain sufficient financial resources to mitigate against risks and unforeseen events.

Capitalization is monitored and reported to the Chief Financial Officer as part of the Group's regular internal management reporting.

The Group is not subject to regulatory capital adequacy requirements.

Capital in millions of yen

	December 31, 2017	December 31, 2016
Capital and reserves attributable to Chugai shareholders	691,924	645,508
Equity attributable to non-controlling interests	973	989
Total equity	692,897	646,497
Total debt	336	645
Capitalization	**693,233**	**647,142**

28. Related parties

(1) Controlling shareholder
Effective October 1, 2002, Roche and Chugai completed an alliance to create a leading research-driven Japanese pharmaceutical company, which was formed by the merger of Chugai and Roche's Japanese pharmaceuticals subsidiary, Nippon Roche. Through the merger, Chugai became a member of the Roche Group as the surviving company.

Chugai has entered into certain agreements with Roche, which are discussed below:

Basic Alliance Agreement: As part of the Basic Alliance Agreement signed in December 2001, Roche and Chugai entered into certain arrangements covering the future operation and governance of Chugai. Amongst other matters these cover the following areas:
- The structuring of the alliance.
- Roche's rights as a shareholder.
- Roche's rights to nominate members of Chugai's Board of Directors.
- Certain limitations to Roche's ability to buy or sell Chugai's common stock.

Chugai issues additional shares of common stock in connection with its convertible debt and equity compensation plans, and may issue additional shares for other purposes, which affects Roche's percentage ownership interest. The Basic Alliance Agreement provides, amongst other matters, that Chugai will guarantee Roche's right to maintain its shareholding percentage in Chugai at not less than 50.1%.

Licensing Agreements: Under the Japan Umbrella Rights Agreement signed in December 2001, Chugai has exclusive rights to market Roche's pharmaceutical products in Japan. Chugai also has right of first refusal on the development and marketing in Japan of all development compounds advanced by Roche.

The Rest of the World Umbrella Rights Agreement (excluding Japan and South Korea) signed in May 2002 was revised and the Amended and Restated Rest of the World Umbrella Rights Agreement (excluding Japan, South Korea and Taiwan) was signed in August 2014. Under this Agreement, Roche has the right of first refusal on the development and marketing of Chugai's development compounds in markets outside Japan, excluding South Korea and Taiwan.

Further to these agreements, Roche and Chugai have signed a series of separate agreements for certain specific products. Depending on the specific circumstances and the terms of the agreement, this may result in payments on an arm's length basis between Roche and Chugai, for any or all of the following matters:

- Upfront payments, if a right of first refusal to license a product is exercised.
- Milestone payments, dependent upon the achievement of agreed performance targets.
- Royalties on future product sales.

These specific product agreements may also cover the manufacture and supply etc. of the respective products to meet the other party's clinical and/or commercial requirements on an arm's length basis.

Research Collaboration Agreements: Roche and Chugai have entered into research collaboration agreements in the areas of small-molecule synthetic drug research and biotechnology-based drug discovery.

Dividends: The dividends distributed to Roche by Chugai in respect to its holdings of Chugai shares totaled ¥18,437 million (2016: ¥19,443 million).

(2) Material transactions and balances with related parties

Transactions with F. Hoffmann-La Roche in millions of yen

	2017	2016
Sales	76,359	62,780
Purchases of inventory and other materials	124,792	120,923

Balances with F. Hoffmann-La Roche in millions of yen

	December 31, 2017	December 31, 2016
Trade accounts receivable	19,593	17,314
Trade accounts payable	(24,805)	(32,965)

(3) Remuneration of key management personnel

Remuneration of members of the board and audit & supervisory board members in millions of yen

	2017	2016
Board of Directors		
- Regular remuneration	333	364
- Bonuses	234	191
- Tenure-based restricted stock compensation plan	92	-
- Performance-based restricted stock compensation plan	35	-
- Chugai common stock options	83	123
- Chugai stock options as stock-based compensation	34	122
Total	**811**	**801**
Audit & supervisory board members		
- Regular remuneration	85	85
Total	**85**	**85**

Effective from the current fiscal year, for the purpose of further promoting shared value with shareholders and providing an incentive to sustainably increase the Group's corporate value, strengthening linkage between their compensation and mid- to long-term business performance, a restricted stock compensation plan was introduced in place of the existing stock option compensation plans.

29. Subsidiaries

Subsidiaries	Country of incorporation	Equity interest %	
		2017	2016
Consolidated subsidiaries			
Chugai Research Institute for Medical Science, Inc.	Japan	100 %	100 %
Chugai Clinical Research Center Co., Ltd.	Japan	100 %	100 %
Chugai Business Support Co., Ltd.	Japan	100 %	100 %
Medical Culture, Inc.	Japan	100 %	100 %
Chugai Distribution Co., Ltd.	Japan	100 %	100 %
Chugai Pharma Manufacturing Co., Ltd.	Japan	100 %	100 %
Forerunner Pharma Research Co., Ltd.	Japan	100 %	100 %
Chugai Pharma USA, Inc.	United States	100 %	100 %
Chugai Pharma Europe Ltd.	United Kingdom	100 %	100 %
Chugai Pharma U.K. Ltd.	United Kingdom	100 %	100 %
Chugai Pharma Development Ltd.	United Kingdom	-	100 %
Chugai Pharma France S.A.S.	France	100 %	100 %
Chugai sanofi-aventis S.N.C.	France	55 %	55 %
Chugai Pharma Taiwan Ltd.	Taiwan	100 %	100 %
Chugai Pharma (Shanghai) Consulting Co., Ltd.	China	-	100 %
Chugai Pharma Science (Beijing) Co., Ltd.	China	100 %	100 %
Chugai Pharma China Co., Ltd.	China	100 %	100 %
Chugai Pharma Technology Taizhou Co., Ltd.	China	100 %	100 %
Chugai Pharmabody Research Pte. Ltd.	Singapore	100 %	100 %

(Note) Chugai Pharma (Shanghai) Consulting Co., Ltd. and Chugai Pharma Development Ltd. were completely dissolved in August and November 2017, respectively.

30. Subsequent events

(Transfer of Marketing Authorizations Including Marketing and Manufacturing Rights)
With regard to the transfer of the 13 long-term listed products manufactured and marketed in Japan by Chugai, from Chugai and F. Hoffmann-La Roche Ltd. to TAIYO Pharma Co., Ltd., the transfer of assets excluding inventories has been executed upon the fulfillment of the relevant closing conditions of the asset transfer agreement on January 5, 2018.

(1) Purpose of the transfer
Chugai aims to contribute to patients and the medical community through the creation of innovative medical products and services based on its business philosophy, "Innovation all for the patients." The decision to transfer these long-term listed products was taken to reinforce Chugai's focus on creating innovation, supporting the goal of ensuring sustainable growth by optimizing investment in business segments and products with potential to enhance Chugai's competitive advantage.

(2) Name of the transferee
TAIYO Pharma Co., Ltd.

(3) Details of the assets subject to transfer
Marketing authorizations, including marketing and manufacturing rights, of the following 13 products (All formulations of products under the following brand names are subject to transfer.)

	Brand Name	Therapeutic Category
1	BACTRAMIN	Synthetic Antibacterial Agent / Agent for the treatment of Pneumocystis Pneumonia
2	DIGOSIN	Digitalis Glycoside
3	EUGLUCON	Oral Hypoglycemic Agent
4	FURTULON	Anti-Tumor Agent
5	GLYCEOL	Drug for the treatment of Intracranial Hypertension and Intracranial Edema / Ocular Hypotensive Agent
6	KYTRIL	5-HT3 receptor antagonist for the treatment of Nausea and Vomiting
7	MADOPAR	Agent for the treatment of Parkinson's disease
8	PROCARBAZINE HYDROCHLORIDE	Anti-Tumor Agent
9	PYDOXAL	Active Form of Vitamin B6
10	RESPLEN	Antitussive and Mucolytic Agent
11	RIVOTRIL	Anti-epileptic Agent
12	ROCEPHIN	Cephalosporin Antibiotic
13	TIGASON	Agent for the treatment of Hyperkeratosis

(4) Transfer timetable
Date of transfer agreement: November 14, 2017
Date of execution of transfer: January 5, 2018

(5) Transfer price
¥21,280 million (including the amount received by Roche) plus the value of inventories
The value of the inventories will be determined upon the transfer of the marketing authorizations, including marketing and manufacturing rights, of each product.
The agreement prevents Chugai from disclosing the amount it has received.

Additional information

This Additional information is provided for the information of readers and does not form part of the consolidated financial statements.

1. Significant legal cases

At December 31, 2017, the Group is involved in the following significant legal cases for which the outcome cannot be determined at this time, but for which the Group assesses that the possibility of any settlement to be remote:

(1) Arbitration in United Kingdom regarding Actemra
In May 2017 Medical Research Council and LifeArc (formerly Medical Research Council Technology) ('Claimants') requested arbitration against Chugai Pharmaceutical Co., Ltd. with an arbitrator being appointed on 9 August 2017. Sums are sought from Chugai for alleged breach of obligations under a collaboration agreement dated 15 August 1990 in connection with the development of the humanized anti-human IL-6 receptor monoclonal antibody, Actemra. It is claimed that Chugai is obliged to pay royalties to the Claimants pursuant to the collaboration agreement.

(2) Patent infringement lawsuit regarding emicizumab in Japan
Baxalta (Baxalta Incorporated and Baxalta GmbH) filed a lawsuit against Chugai at the Tokyo District Court on 6 May 2016 requesting an injunction against the manufacture, usage, transfer, exportation and offer of any transfer regarding emicizumab alleging emicizumab is infringing its Japanese patent (patent number 4313531).

(3) Patent infringement lawsuit regarding emicizumab in the United States
Baxalta (Baxalta Incorporated and Baxalta GmbH) filed a lawsuit against Chugai and Genentech Inc., at the United States District Court for the District of Delaware on 4 May 2017 requesting relief including an injunction against manufacturing, using, offering to sell, or selling of emicizumab within the United States, or importing emicizumab into the United States.

Independent Auditor's Report

Independent Auditor's Report

To the Board of Directors of Chugai Pharmaceutical Co., Ltd.:

We have audited the accompanying consolidated financial statements of Chugai Pharamaceutical Co., Ltd. and its consolidated subsidiaries, which comprise the consolidated balance sheet as at December 31, 2017, and the consolidated income statement, statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in Japan. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgement, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, while the objective of the financial statement audit is not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of Chugai Pharmaceutical Co., Ltd. and its consolidated subsidiaries as at December 31, 2017, and their financial performance and cash flows for the year then ended in accordance with International Financial Reporting Standards.

KPMG AZSA LLC

March 21, 2018
Tokyo, Japan

Glossary

Terms Related to Chugai's Business

Unmet medical need
Medical need that is not adequately met due to a lack of effective treatments.

First-in-class
An original drug that is highly novel and useful, and will significantly change the therapeutic system.

Best-in-class
A drug that offers clear advantages over other existing drugs in the same category, such as those with the same molecular target.

Development pipeline
At pharmaceutical companies, refers to drug candidates that are being developed. It is important to have a well-stocked pipeline that has a high success rate and is expected to lead to differentiation from other companies' products.

Proof of Concept (PoC)/Early PoC
Proof of concept (PoC) is confirmation that the therapeutic effect conceived in the research stage is effective in humans. Early PoC means that in addition to safety, signs of efficacy or pharmacological effect have been confirmed in a limited number of cases.

Clinical trial
A study to verify the safety, efficacy and other characteristics of a drug in human subjects. Studies conducted for the purpose of filing an application for approval are called clinical trials. Clinical trials consist of phase I to phase III studies, which are conducted before filing for approval, and phase IV studies, which are conducted after obtaining approval.

Phase I: Performed on a small number of healthy volunteers (or, for certain disease areas and diseases, on patients) to assess the drug's safety and the process by which it is absorbed, distributed, metabolized and eliminated by the body.

Phase II: Performed on a small number of consenting patients to determine the safest and most effective dosage and the dosing regimen.

Phase III: Performed on a large number of consenting patients to verify the efficacy and safety of the new drug in comparison with existing drugs or placebo.

Phase IV: Post-marketing clinical surveillance. Performed on a larger number of consenting patients than in phase III studies to verify the drug's safety and efficacy for its approved indication(s).

Application for approval
An application submitted by a pharmaceutical company to a regulatory agency to obtain approval for manufacturing and marketing of a new drug after its efficacy and safety have been verified in clinical trials. In Japan, the Minister of Health, Labour and Welfare (MHLW) grants manufacturing and marketing approval to substances deemed appropriate as pharmaceuticals based on reviews by the Pharmaceutical Affairs and Medical Devices Agency as well as academic and other experts in the Pharmaceutical Affairs and Food Sanitation Council.

Additional indication
A new indication for a previously approved drug.

Lifecycle management
The various measures taken to maximize the potential value of a drug, including shortening development time, expanding sales, extending the product's life, and conducting appropriate cost control. Competitiveness can be strengthened further by using earnings from sales of established drugs to strategically reinvest in new drug development, marketing or other areas.

Terms Related to Drug Discovery

Personalized Healthcare
Even when a particular disease is treated with the same drug, there may be differences in the efficacy and side effects of that drug depending on the patient. One of the causes is thought to be that the genetic information related to the disease is different in each patient. Personalized healthcare (PHC) is an approach that focuses on these genetic-level differences to provide treatment tailored to the characteristics of each patient's disease. It is thus expected to bring significant benefits in terms of efficacy, safety and cost-effectiveness. Diagnosis using various biomarkers, and molecular targeted drugs that act only on the specific molecules related to the disease, play central roles in PHC.

Biopharmaceuticals
Drugs created by applying biotechnology such as genetic recombination. In the 1980s, when rapid advances were made in genetic engineering, Chugai decided to shift to research and development of biopharmaceuticals and made related large-scale capital investments.

Antibody
A Y-shaped protein that plays a critical role in the immune system. It has the property of binding only to a specific molecule (antigen).

Therapeutic antibody
A type of biopharmaceutical, it is an artificially created antibody used as a medicine to prevent or treat diseases. Therapeutic antibodies are designed to act only on the specific molecule (antigen) that causes the disease, and therefore can be expected to provide high therapeutic efficacy and reduce side effects. Chugai launched the first therapeutic antibody created in Japan in 2008, and is leading the world with its proprietary antibody engineering technologies.

Modality
In the pharmaceutical industry, refers to the material classification of a medicine. Until the 1990s, small molecule drugs were virtually the only modality, but the options are now increasing. New modalities enable new approaches to diseases that have no effective treatment methods. Chugai is focusing on establishing middle molecules as a third modality, in addition to its biologics and small molecules.

Open innovation
Generating innovative value by utilizing the technologies and development capabilities of external research networks such as with universities, research institutions and other organizations, in addition to in-house capabilities.

Terms Related to Human Resources

Work-life balance/Work-life synergy
Work-life balance is the concept of creating harmony between work and personal life (family, hobbies, recreation and community activities) and achieving satisfaction in both realms. The aim of work-life synergy is to generate synergy between each employee's job and lifestyle while improving the quality of both, as well as raising Chugai's productivity as an organization to become a top pharmaceutical company.

Diversity
At Chugai, diversity refers to a diversity of attributes such as gender, age and nationality as well as ways of thinking and values. When people with various backgrounds work together, they become aware of diverse perspectives and ideas. Using this awareness for business innovation, companies promote diversity to create better-quality products and services. Also called "diversity and inclusion (D&I)," this term refers to receptivity to diversity and incorporating diverse opinions and ideas rather than the simple pursuit of variety, and also encompasses the concept of raising organizational value.

Talent management
A human resource strategy to support the development of the next generation of leaders and core human resources and to improve the skills and enhance the motivation of employees throughout the Company, with the aim of realizing our goal of becoming a top pharmaceutical company. Each organization at Chugai has formulated a long-term human resource development plan and is building a talent pool of next-generation leader candidates.

Terms Related to the Roche Group

Roche
A pharmaceutical company established in 1896 and headquartered in Basel, Switzerland. With business operations in more than 100 countries, the Roche Group contributes to medicine in a wide range of fields through its two business segments: pharmaceuticals and diagnostics. Central to the Roche Group's strategy is personalized healthcare, the approach of selecting the most appropriate treatment by using biomarkers and diagnostic tests to identify patients most likely to show a significant response to a particular drug. The Roche Group's sales in 2017 were 53.3 billion Swiss francs.

Roche Diagnostics K.K.
The Japanese subsidiary of the Roche Group's diagnostics division. Established in 1998, Roche Diagnostics K.K. provides a wide range of innovative diagnostic solutions, including in-vitro diagnostics and diagnostic equipment and research reagents and related equipment.

Genentech Inc.
A leading biotechnology company headquartered in South San Francisco, California. Genentech has been a member of the Roche Group since 1990.

Foundation Medicine Inc. (FMI)
Established in Massachusetts, U.S.A. in 2010, and majority-owned by Roche since 2015. Chugai will carry out commercialization and product value maximization of FMI's "Comprehensive Genomic Profiling Service" in Japan.

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Digital-ro 31-gil, Guro-gu,
Seoul 08376 Korea
Tel +82-(0)2-858-6226

Shareholder Information (As of December 31, 2017)

Major Shareholders

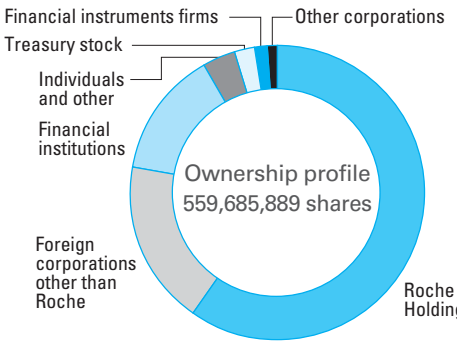
Name	Number of Shares Held (Thousands)	Percentage of Voting Rights (%)
Roche Holding Ltd.	335,223	61.32
The Master Trust Bank of Japan, Ltd. (Trust Account)	25,154	4.60
Japan Trustee Services Bank, Ltd. (Trust Account)	16,386	2.99
JP MORGAN CHASE BANK 385147	16,087	2.94
JP MORGAN CHASE BANK 380055	9,151	1.67
STATE STREET BANK WEST CLIENT - TREATY 505234	4,262	0.77
Japan Trustee Services Bank, Ltd. (Trust Account 5)	3,975	0.72
Japan Trustee Services Bank, Ltd. (Trust Account 7)	3,794	0.69
JP MORGAN CHASE BANK 385632	3,792	0.69
MSCO CUSTOMER SECURITIES	3,219	0.58

Note: 12,909,947 shares of treasury stock held by the Company are not included in the above breakdown of major shareholders.

Stock Price Information (From January 1, 2017 to December 31, 2017)

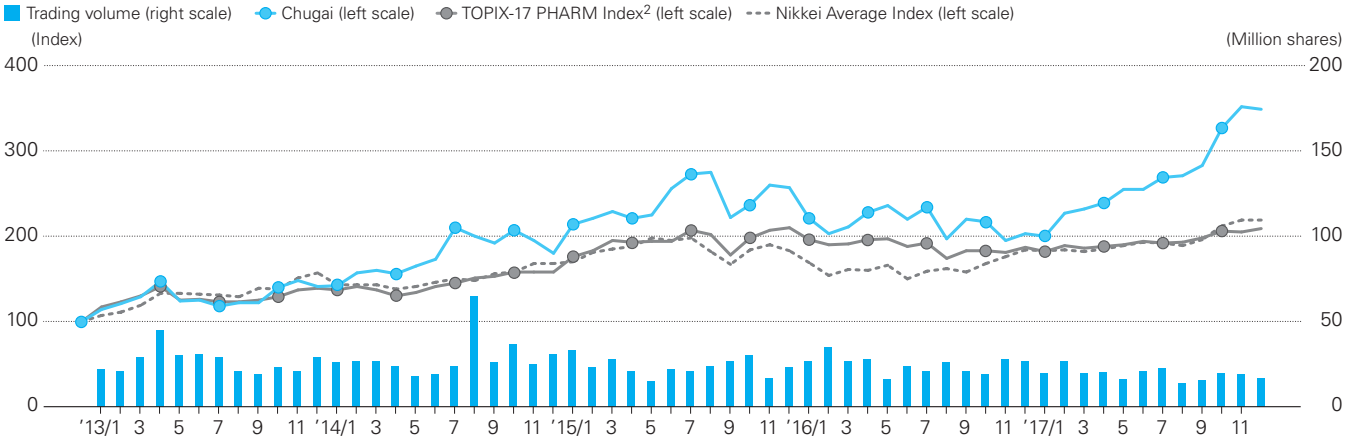
	Stock Price	
	Low	High
First Quarter	¥3,330	¥3,940
Second Quarter	3,765	4,365
Third Quarter	4,085	4,715
Fourth Quarter	4,655	5,980

Classification of Shareholders



- Roche Holding Ltd.
  Shares: 335,223,645 59.89% (Shareholder: 1)
- Foreign corporations other than Roche
  Shares: 101,090,248 18.06% (Shareholders: 648)
- Financial institutions
  Shares: 76,970,222 13.75% (Shareholders: 71)
- Individuals and other
  Shares: 20,897,585 3.73% (Shareholders: 19,820)
- Treasury stock
  Shares: 12,909,947 2.30% (Shareholder: 1)
- Financial instruments firms
  Shares: 7,531,451 1.35% (Shareholders: 38)
- Other corporations
  Shares: 5,062,791 0.90% (Shareholders: 153)

Share Performance[1] with Stock Indices

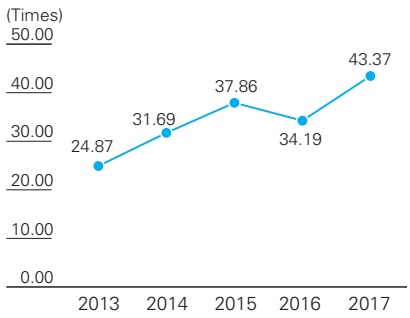


1. Closing price on December 30, 2012 = 100
2. A capitalization-weighted index that consists of pharmaceutical companies on the Tokyo Stock Exchange, First Section.

Share Price Indicators

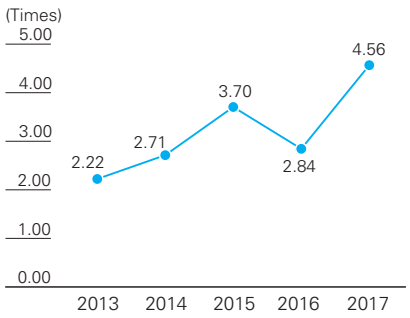
Price/Earnings Ratio

Year-end share price/Basic net income per share



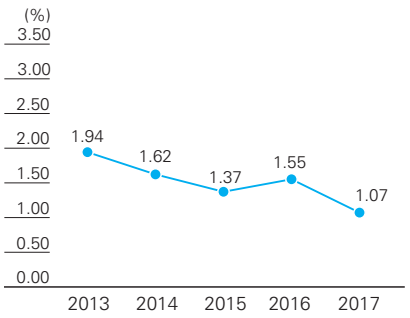
Price/Book Ratio

Year-end share price/Equity per share attributable to Chugai shareholders



Dividend Yield

Dividends per share/Year-end share price



Corporate Overview (As of December 31, 2017)

Company Name
Chugai Pharmaceutical Co., Ltd.

Year of Foundation
1925

Year of Establishment
1943

Address
2-1-1 Nihonbashi-Muromachi, Chuo-ku,
Tokyo 103-8324 Japan

Stated Capital
¥73,202 million

Number of Employees
7,372 (Consolidated)

Number of Shares Issued of Common Stock
559,685,889

Number of Shareholders
20,732

Stock Listing
Tokyo Stock Exchange, First Section

Fiscal Year-End
December 31

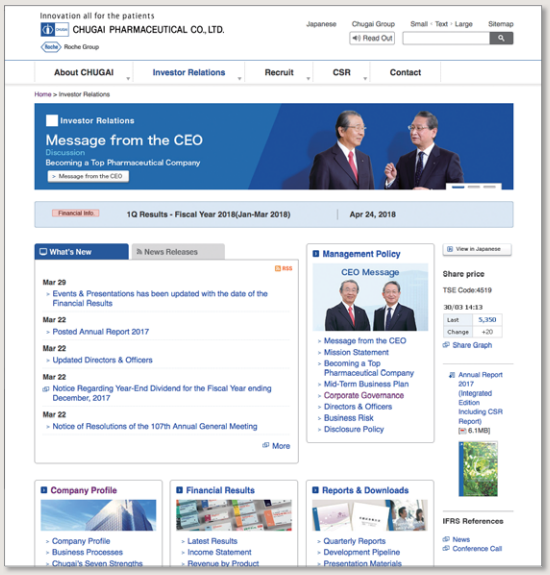
General Meeting of Shareholders
March

Transfer Agent
Mitsubishi UFJ Trust and Banking Corporation

Public Notices
Public notices are made electronically on the Chugai website (https://www.chugai-pharm.co.jp/ir/).
In case electronic communications are unavailable, public notices will be made in the newspaper *Nihon Keizai Shimbun* (in Japanese).

For further information, please contact:
Corporate Communications Dept.
Tel: +81-(0)3-3273-3313
Fax: +81-(0)3-3281-6607
E-mail: ir@chugai-pharm.co.jp

IR website
https://www.chugai-pharm.co.jp/english/ir/



CSR website
https://www.chugai-pharm.co.jp/english/csr/

Innovation all for the patients

CHUGAI PHARMACEUTICAL CO., LTD.

A member of the Roche group

2-1-1 Nihonbashi-Muromachi, Chuo-ku, Tokyo 103-8324 Japan URL: https://www.chugai-pharm.co.jp/english/