

GROUP MANAGEMENT REPORT. The advantages of our diversified Group structure were clearly evident in fiscal year 2018. We achieved our Group sales and earnings targets for fiscal year 2018.

FUNDAMENTAL INFORMATION ABOUT THE GROUP

THE GROUP'S BUSINESS MODEL

Fresenius is a global health care Group in the legal form of an SE & Co. KGaA (a partnership limited by shares). We offer products and services for dialysis, hospitals, and outpatient medical care. In addition, Fresenius focuses on hospital operations. We also manage projects and provide services for hospitals and other health care facilities worldwide.

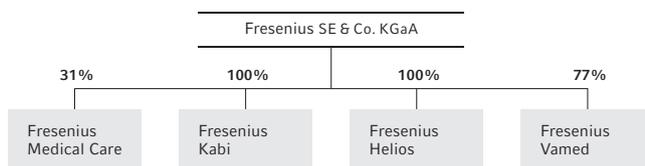
The operating business comprises four **business segments**, all of which are legally independent entities managed by the operating parent company Fresenius SE & Co. KGaA. The business segments have a regional and decentralized structure.

- **Fresenius Medical Care** offers services and products for patients with chronic kidney failure. As of December 31, 2018, Fresenius Medical Care treated 333,331 patients at

3,928 dialysis clinics. Dialyzers and dialysis machines are among the most important product lines. In addition, Fresenius Medical Care offers dialysis-related services, among others in the field of Care Coordination.

- **Fresenius Kabi** specializes in intravenously administered generic drugs (IV drugs), clinical nutrition, and infusion therapies. The company is also a supplier of medical devices and products of transfusion technology. In addition, Fresenius Kabi is developing products with a focus on oncology and autoimmune diseases within the biosimilars segment of Fresenius Kabi.
- **Fresenius Helios** is Europe's leading private hospital operator. The company comprises Helios Germany and Helios Spain (Quirónsalud); both are part of the holding company Helios Health. At the end of 2018, Helios Germany operated a total of 86 hospitals, around 125 outpatient clinics, and 10 prevention centers. Quirónsalud operated 47 hospitals, 57 outpatient centers, and around 300 occupational risk prevention centers at the end of 2018.
- **Fresenius Vamed** manages projects and provides services for hospitals as well as other health care facilities worldwide and is a leading post-acute care provider in Central Europe. The portfolio ranges along the entire value chain – from project development, planning, and turnkey construction, via maintenance and technical management, to total operational management.

GROUP STRUCTURE



Fresenius has an international sales network and maintains more than 90 production sites. Large production sites are located in the United States, China, Japan, Germany, and Sweden. Production plants are also located in other European countries and in Latin America, Asia-Pacific, and South Africa.

IMPORTANT MARKETS AND COMPETITIVE POSITION

Fresenius operates in about 90 countries through its subsidiaries. The **main markets** are Europe with 43% and North America with 42% of sales, respectively.

Fresenius Medical Care holds the leading position worldwide in dialysis care as it serves about 10% of all dialysis patients, as well as in dialysis products, with a market share of about 35%. **Fresenius Kabi** holds leading market positions in Europe for large parts of its product portfolio and has significant market shares in the growth markets of Asia-Pacific and Latin America. In the United States, Fresenius Kabi is one of the leading suppliers of generic IV drugs. Further information on the market position of Fresenius Kabi can be found in the market description on page 50f. **Fresenius Helios** is Europe's leading private hospital operator. The company comprises Helios Germany, the country's largest private hospital operator, and Helios Spain, Spain's largest private hospital operator. **Fresenius Vamed** is one of the world's leading companies in its field.

EXTERNAL FACTORS

Overall, the legal and economic factors for the Fresenius Group were largely unchanged in 2018. The life-saving and life-sustaining products and therapies that the Group offers are of intrinsic importance for people worldwide. Therefore, the business development of our company is fundamentally stable and relatively independent of economic cycles. Preparatory measures for upcoming regulatory changes in the German hospital business already had a negative impact on earnings in the 2018 fiscal year. For detailed information on our markets, please see pages 49ff.

Furthermore, the diversification across four business segments and our global reach provide additional stability for the Group.

Fluctuating exchange rates, particularly between the U.S. dollar and the euro, have an effect on the income statement and the balance sheet. In 2018, the average annual exchange rate between the U.S. dollar and the euro of 1.18 was above the 2017 rate of 1.13, and therefore had a negative currency translation effect on the income statement. Furthermore, negative currency translation effects on the income statement resulted, in particular, from the depreciation of Latin American currencies (especially the Argentinian peso) against the euro in the 2018 fiscal year. As a result of exchange rate changes (from 1.20 U.S. dollars on December 31, 2017, to 1.15 U.S. dollars on December 31, 2018), the balance sheet total increased by 7% (increased by 5% in constant currencies).

In 2018, the Fresenius Group was involved in various legal disputes resulting from business operations. Although it is not possible to predict the outcome of these disputes, none is expected to have a significant adverse impact on the assets and liabilities, financial position, and results of operations of the Group. Further information regarding legal matters and an ongoing internal compliance review at Fresenius Medical Care can be found on pages 225 to 234 of the Notes.

We carefully monitor and evaluate country-specific, political, legal, and financial conditions. This applies in particular to the potential impact on our business of the United Kingdom's decision to leave the European Union and the ongoing uncertainty about the conditions of withdrawal. We do not expect this to have a material impact on our business at this time. The share of sales generated in the United Kingdom is not material in relation to Group sales. We do not expect any negative effects on our financing either, as only an immaterial portion of our credit lines is provided by banks domiciled in the United Kingdom. Project teams in all divisions concerned are identifying potential effects in terms of logistics, taxes, customs duties, and potential regulations, among other things, and initiating appropriate measures if necessary.

MANAGEMENT AND CONTROL

In the legal form of a KGaA, the Company's corporate bodies are the General Meeting, the Supervisory Board, and the general partner, Fresenius Management SE. Fresenius Management SE is wholly owned by Else Kröner-Fresenius-Stiftung. The KGaA has a **two-tier management system** – management and control are strictly separated.

The **general partner**, represented by its **Management Board**, conducts the business and represents the Company in dealings with third parties. The Management Board generally has seven members. According to the Management Board's rules of procedure, each member is accountable for his or her own area of responsibility. However, the members have joint responsibility for the management of the Group. In addition to the Supervisory Board of Fresenius SE & Co. KGaA, Fresenius Management SE has its own Supervisory Board. The Management Board is required to report to the Supervisory Board of Fresenius Management SE regularly, in particular on its corporate policy and strategies, business profitability, current operations, and any other matters that could be of significance for the Company's profitability and liquidity. The Supervisory Board of Fresenius Management SE also advises and supervises the Management Board in its management of the Company. It is prohibited from managing the Company directly. However, the Management Board's rules of procedure require it to obtain the approval of the Supervisory Board of Fresenius Management SE for specific activities.

The members of the Management Board are appointed and dismissed by the Supervisory Board of Fresenius Management SE. Appointment and dismissal is in accordance with Article 39 of the SE Regulation. The articles of association of Fresenius Management SE also provide that deputy members of the Management Board may be appointed.

The **Supervisory Board of Fresenius SE & Co. KGaA** advises and supervises the management of the Company's business by the general partner, reviews the annual financial statements and the consolidated financial statements, and performs the other functions assigned to it by law and the Company's articles of association. It is involved in corporate planning and strategy, and in all matters of fundamental importance for the Company. The Supervisory Board of Fresenius SE & Co. KGaA has six shareholder representatives and six employee representatives. A Nomination Committee of the Supervisory Board of Fresenius SE & Co. KGaA has been instituted for election proposals for the shareholder representatives. Its activities are aligned with the provisions of law and the Corporate Governance Code. The shareholder

representatives are elected by the **Annual General Meeting of Fresenius SE & Co. KGaA**. The European works council elects the employee representatives to the Supervisory Board of Fresenius SE & Co. KGaA.

The Supervisory Board must meet at least twice per calendar half-year. The Supervisory Board of Fresenius SE & Co. KGaA has two permanent **committees**: the Audit Committee, consisting of five members, and the Nomination Committee, consisting of three members. The members of the committees are listed on page 271 of this Annual Report. The Company's annual corporate governance declaration describes the procedures of the Supervisory Board's committees on page 135 f. The declaration can also be found on the website www.fresenius.com/corporate-governance.

The description of both the **compensation system** and individual amounts paid to the Management Board and Supervisory Board of Fresenius Management SE, and the Supervisory Board of Fresenius SE & Co. KGaA, are included in the Compensation Report on pages 146 ff. of this Annual Report. The Compensation Report is part of the Group's Management Report.

CAPITAL, SHAREHOLDERS, ARTICLES OF ASSOCIATION

The subscribed capital of Fresenius SE & Co. KGaA amounted to 556,225,154 ordinary shares as of December 31, 2018 (December 31, 2017: 554,710,473).

The shares of Fresenius SE & Co. KGaA are non-par-value bearer shares. Each share represents €1.00 of the capital stock. Shareholders' rights are regulated by the German Stock Corporation Act (AktG – Aktiengesetz).

Fresenius Management SE, as general partner, is authorized, subject to the consent of the Supervisory Board of Fresenius SE & Co. KGaA: to increase the subscribed capital of Fresenius SE & Co. KGaA by a total amount of up to €125 million, until May 17, 2023, through a single or multiple issuance of new bearer ordinary shares against cash contributions and/or contributions in kind (**Authorized Capital I**). Shareholders' pre-emptive rights of subscription can be excluded.

In addition, there are the following **Conditional Capitals**:

- ▶ The subscribed capital is conditionally increased by up to €4,735,083.00 through the issuance of new bearer ordinary shares (**Conditional Capital I**). The conditional capital increase will only be executed to the extent that convertible bonds for ordinary shares have been issued under the 2003 Stock Option Plan and the holders of these convertible bonds exercise their conversion rights.

- ▶ The subscribed capital is conditionally increased by up to €5,141,264.00 through the issuance of new bearer ordinary shares (**Conditional Capital II**). The conditional capital increase will only be executed to the extent that subscription rights have been issued under the 2008 Stock Option Plan, the holders of these subscription rights exercise their rights, and the Company does not use its own shares to service the subscription rights or does not exercise its right to make payment in cash.
- ▶ The general partner is authorized, with the approval of the Supervisory Board, until May 17, 2023, to issue option bearer bonds and/or convertible bearer bonds, once or several times, for a total nominal amount of up to €2.5 billion. To fulfill the granted subscription rights, the subscribed capital of Fresenius SE & Co. KGaA was increased conditionally by up to €48,971,202.00 through issuance of new bearer ordinary shares (**Conditional Capital III**). The conditional capital increase shall only be implemented to the extent that the holders of convertible bonds issued for cash, or of warrants from option bonds issued for cash, exercise their conversion or option rights and as long as no other forms of settlement are used.
- ▶ The share capital is conditionally increased by up to €24,928,200.00 by the issuance of new ordinary bearer shares (**Conditional Capital IV**). The conditional capital increase will only be implemented to the extent that subscription rights have been, or will be, issued in accordance with the Stock Option Program 2013 and the holders of subscription rights exercise their rights, and the Company does not grant own shares to satisfy the subscription rights.

The Company is authorized, until May 17, 2023, to purchase and use its **own shares** up to a maximum amount of 10% of the subscribed capital. In addition, when purchasing own shares, the Company is authorized to use equity derivatives with possible exclusion of any tender right. The Company had not utilized these authorizations as of December 31, 2018.

As the **largest shareholder**, Else Kröner-Fresenius-Stiftung, Bad Homburg, Germany, informed the Company on December 18, 2018, that it held 146,261,594 ordinary shares of Fresenius SE & Co. KGaA. This corresponds to an equity interest of 26.3% as of December 31, 2018.

Amendments to the articles of association are made in accordance with Section 278 (3) and Section 179 (2) of the German Stock Corporation Act (AktG) in conjunction with Article 17 (3) of the articles of association of Fresenius SE & Co. KGaA. Unless mandatory legal provisions require otherwise, amendments to the articles of association require a simple majority of the subscribed capital represented in the resolution. If the voting results in a tie, a motion is deemed rejected. Furthermore, in accordance with Section 285 (2) sentence 1 of the German Stock Corporation Act (AktG), amendments to the articles of association require the consent of the general partner, Fresenius Management SE. The Supervisory Board is entitled to make such amendments to the articles of association that only concern their wording without a resolution of the General Meeting.

Under certain circumstances, a **change of control** as the result of a takeover bid would impact our major long-term financing agreements, which contain customary change of control provisions that grant creditors the right to request early repayments of outstanding amounts in case of a change of control. The majority of our financing arrangements, in particular our bonds placed in the capital markets, however, require that the change of control is followed by a decline or a withdrawal of the Company's rating or that of the respective financing instruments.

GOALS AND STRATEGIES

Our goal is to strengthen the position of Fresenius as a leading global provider of products and therapies for critically and chronically ill people. With our four business segments, we are concentrating on a limited number of health care areas. As a result of this clear focus, we have developed unique competencies. We are following our long-term strategies consistently and are seizing our opportunities.

The key elements of the Fresenius Group's strategy and goals are to:

- ▶ **Expand market position and worldwide presence:** Fresenius' goal is to ensure and expand its long-term position as a leading international provider of products and services in the health care industry. To this end, and to geographically expand our business, we plan to grow organically as well as through selective small to medium-sized acquisitions, complementing our existing portfolio. We focus on markets with strong growth rates.

Fresenius Medical Care is the worldwide leader in dialysis, with a strong market position in the United States. Future opportunities in dialysis will arise from further expansion in dialysis care and products worldwide, as well as the focused range in Care Coordination. In this area, Fresenius Medical Care offers additional services for the holistic care of patients and meets the increasing demand with this model.

Fresenius Kabi is the market leader in infusion therapy and/or clinical nutrition in Europe and in the key markets in Asia-Pacific (including China) and Latin America. In the United States, Fresenius Kabi is one of the leading players in the market for generic IV drugs. In addition, Fresenius Kabi is one of the most important providers of transfusion technology. Fresenius Kabi plans to roll out products from its existing portfolio to the growth markets and to launch existing products in the United States. Market share is to be expanded further through the launch of new products in the field of IV drugs, infusion therapy, clinical nutrition, and medical devices/transfusion technology.

With 86 hospitals, Fresenius Helios operates in nearly all of Germany. Building on this, Fresenius Helios is now in the position to develop new patient care models. To benefit from the trend towards outpatient treatment, Helios Germany has been expanding outpatient service offerings in a separate division since September 2018.

Helios Spain has attractive growth opportunities through the expansion and construction of hospitals, and potential for further consolidation in the highly fragmented private hospital market in Spain. Helios Health exploits upcoming opportunities for cross-border synergies in areas such as laboratory services and joint purchasing. The cross-border exchange of experience and knowledge is gradually creating the economic prerequisites for the further internationalization of our hospital business. Helios Spain announced the acquisition of Clínica Medellín in 2018. Fresenius Helios is thus entering the attractive private hospital market in Colombia.

Fresenius Vamed will further expand its position as a global specialist for projects and services for hospitals and other health care facilities. With the acquisition of Fresenius Helios' German inpatient rehabilitation business, Fresenius Vamed developed itself into one of the leading providers of private rehabilitation services in Europe. Moreover, the cooperation with Fresenius Helios is being intensified, for example in technical services and procurement, where Fresenius Helios and Fresenius Vamed are now jointly purchasing certain products.

- ▶ **Strengthen innovation:** Fresenius' strategy is to continue building on its strength in technology, its competence and quality in patient care, and its ability to manufacture cost-effectively. We want to develop products and systems that provide a high level of safety and user-friendliness and enable tailoring to individual patient needs. We intend to continue to meet our requirements of best-in-class medical standards by offering more effective products and treatment methods for the critically and chronically ill. Fresenius Kabi, for example, develops imitation products of biotechnologically produced drugs called biopharmaceuticals, with a focus on oncology and autoimmune diseases. Fresenius Helios' goal is to foster knowledge sharing across its international hospital network and use innovation to develop the best health care services and therapies for its patients. Since September 2018, Helios Germany has been developing innovative business areas such as digital offerings in its own division. Fresenius Vamed's goal is to realize further projects in integrated health care services and to support patient-oriented health care systems more efficiently.
- ▶ **Enhance profitability:** Our goal is to continue to improve Group profitability. To contain costs, we are concentrating particularly on making our production plants more efficient, exploiting economies of scale, leveraging the existing marketing and distribution infrastructure more intensively, and practicing strict cost control. By focusing on our operating cash flow and employing efficient working capital management, we will increase our investment flexibility and improve our balance sheet ratios. Another goal is to optimize our weighted average cost of capital (WACC) by deliberately employing a balanced mix of equity

FINANCIAL PERFORMANCE INDICATORS

Growth	Profitability	Liquidity	Capital efficiency	Capital management
Sales growth (in constant currency) Sales growth (organic)	Operating income (EBIT) +/- Financial result - Income taxes - Minority interests <hr/> = Net income EBIT growth (in constant currency) Net income growth (in constant currency)	Operating cash flow ÷ Sales <hr/> = Cash flow margin	EBIT - Income taxes <hr/> = NOPAT ÷ Invested capital <hr/> = ROIC EBIT ÷ Operating assets <hr/> = ROOA	Net debt ÷ EBITDA <hr/> = Leverage ratio

and debt funding. In the present capital market conditions, we believe we optimize our cost of capital if we hold the net debt/EBITDA ratio within a range of 2.5 to 3.0 (before adoption of IFRS 16). Please see the following section "Corporate Performance Criteria", and pages 54 and 68, for more details.

We report on our goals in detail in the Outlook section on pages 70 to 76.

CORPORATE PERFORMANCE CRITERIA

The Management Board makes operational and strategic management decisions based on our Group-wide performance indicators for growth, profitability, liquidity, capital efficiency, and capital management. The most important financial performance indicators for us are explained below and a definition is provided in the glossary of financial terms on pages 276 to 278.

GROWTH

In line with our growth strategy, sales growth (in constant currency) of the Group and, in our business segments, organic sales growth in particular are of central importance.

PROFITABILITY

We use earnings before interest and taxes (EBIT) and EBIT growth (in constant currency) to measure the profitability of the segments. At Group level, we primarily use net income and net income growth (in constant currency). In order to be

able to better compare the operating performance over several periods, the results are adjusted by special items if necessary.

LIQUIDITY

At the corporate level, cash flow margin is used as the main liquidity indicator. In order to further analyze and optimize the contributions of our business segments to operating cash flow, we also use the additional performance indicators DSO¹ (days sales outstanding) and SOI¹ (scope of inventory). These show the amount of receivables or inventories in relation to the sales or costs of the services rendered during the past reporting period.

CAPITAL EFFICIENCY

We work as profitably and efficiently as possible with the capital provided to us by shareholders and lenders. In order to manage this, we primarily calculate the Return on Invested Capital (ROIC)² and the Return on Operating Assets (ROOA)².

CAPITAL MANAGEMENT

We use the ratio of net debt and EBITDA as the key parameter for managing the capital structure. This measure indicates the degree to which a company is able to meet its payment obligations. Our business segments usually hold leading positions in growing and mostly non-cyclical markets. Since the majority of our customers are of high credit quality, they generate mainly stable, predictable cash flows. The Group is therefore able to use debt to finance its growth to a greater extent than companies in other industries.

¹ Does not reflect a core performance indicator

² For a detailed calculation of ROIC and ROOA please see page 277

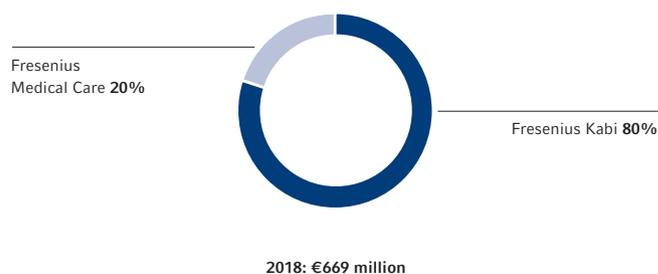
INVESTMENT AND ACQUISITION PROCESS

Our investments and acquisitions are carried out using a detailed coordination and evaluation process. As a first step, the Management Board sets the Group's investment targets and the budget based on investment proposals. In the next step, the respective business segments and the internal Acquisition & Investment Council (AIC) determine the proposed projects and measures, taking into account the overall strategy, the total investment budget, and the required and potential return on investment. We evaluate investment projects based on commonly used methods, such as internal rate of return (IRR) and net present value (NPV). Within the framework of the due diligence process, opportunities and risks associated with the potential investment object are analyzed and assessed. In addition to reviewing the business model, key financial figures and tax issues and the resulting company valuation, this also includes a comprehensive analysis of the market and competitive environment, regulatory framework conditions, and legal aspects. Furthermore, the assessment also implies various issues relating to compliance, production, research & development, quality, information technology, human resources, and the environment. Based on investment volume, a project is submitted for approval to the executive committees or respective managements of the business segments, to the Management Board of Fresenius Management SE, and/or its Supervisory Board.

RESEARCH AND DEVELOPMENT

Product and process development and the improvement of therapies are at the core of our growth strategy. Fresenius focuses its R & D efforts on its core competencies in the following areas:

R & D EXPENSES BY SEGMENT¹



- ▶ Dialysis
- ▶ Generic IV drugs
- ▶ Biosimilars
- ▶ Infusion and nutrition therapies
- ▶ Medical devices

Apart from new products, we are concentrating on developing optimized or completely new therapies, treatment methods, and services.

Research and development **expenses**¹ were €669 million (2017: €558 million), approximately 6.9% of our product sales (2017: 5.9%). Research services provided by third parties are mainly used by Fresenius Kabi, especially in the field of biosimilars. Fresenius Kabi increased its R & D spending by 25%¹, Fresenius Medical Care increased its R & D spending by 2%. Detailed figures are included in the segment reporting on pages 170 f.

As of December 31, 2018, there were 3,042 employees in research and development (2017: 2,772). Of that number, 970 were employed at Fresenius Medical Care (2017: 848) and 2,072 at Fresenius Kabi (2017: 1,924).

Our main research sites are in Europe, the United States, and India. Product-related development activities are also carried out in China.

KEY FIGURES RESEARCH AND DEVELOPMENT

	2018	2017	2016	2015	2014
R & D expenses, € in millions ¹	669	558	528	450	364
as % of product sales ^{1,2}	6.9	5.9	5.6	5.2	4.7
R & D employees	3,042	2,772	2,770	2,247	2,107

¹ 2018 before revaluations of biosimilars contingent liabilities

² 2014–2016, 2018 excluding impairment losses from capitalized in-process R & D activities

¹ Before revaluations of biosimilars contingent liabilities

FRESENIUS MEDICAL CARE

Health care systems face major financial challenges not only at present, but also in the long term. With regard to our R & D activities, this confirms our intention to develop innovative products that both meet high quality standards and are also affordable. From our experience in operating our own dialysis centers and the care of patients at home, we know that these are not incompatible goals.

Our R & D strategy is globally oriented. This will enable us to respond even better to the growing global demand for high-quality and cost-efficient treatment methods. However, we also take regional market conditions into account and offer a diverse product portfolio. In the future, we want to provide **innovative, competitive products** even more efficiently and focus more strongly on developing countries.

In addition to R & D activities carried out at our company, we collaborate with external partners with the aim of building a comprehensive innovation and technology network. These include numerous academic institutions, such as research institutes at renowned universities in the United States. Another partner is the Renal Research Institute (RRI) in New York. This subsidiary of Fresenius Medical Care North America is a leading institution in the field of clinical research into chronic kidney failure. Together we are working on fundamental issues relating to dialysis treatment. We are increasingly collaborating with start-ups to support an open culture that promotes innovation and to gain access to the latest technologies both in our core business and in adjacent areas that are of future strategic interest to us.

We are also developing a portfolio of products that meet the strictest requirements in terms of quality and efficiency, especially for the **emerging markets**. This work is being conducted in our own development center in China and at other locations.

FRESENIUS KABI

Fresenius Kabi's research and development activities concentrate on products for the therapy and care of critically and chronically ill patients. Our products help to support medical

advancements in acute and post-acute care and improve the patients' quality of life. At the same time, our products are helping to ensure that more and more patients worldwide have access to high-quality, modern therapies.

Our **development expertise** includes all the related components, such as the drug raw material, the pharmaceutical formulation, the primary packaging, the medical device needed for application of drugs and infusions, and the production technology. In the area of biosimilars we have specialized in the development of products for the treatment of oncology and autoimmune diseases.

In the area of **IV drugs**, we are continuously working on the extension of our drug portfolio. What matters most to us here is that we launch new generic drug formulations directly after the patents of the branded products expire. In addition, we are working on the continuous improvement of non-patented IV drugs already on the market, such as new formulations and dosage forms as well as primary packaging. In 2018, we had approximately 90 active projects in the area of generics. We focus, among other items, on complex formulations such as active ingredients in liposomal¹ solutions and product improvements that bring added value to both medical staff and patients. Thus, we develop ready-to-use products that are especially convenient and safe and help to prevent application errors in day-to-day medical care. These are, for example, ready-to-use solutions in our freeflex infusion bags and pre-filled syringes. Drugs in pre-filled syringes are simpler and safer to use than traditional applications, which helps improve patient care.

In the **biosimilars business**, we have a pipeline of molecules at different stages of development. A biosimilar is biological medicine highly similar to another already approved biological medicine (which is called "reference product"). The aim of our development activities is to obtain marketing approval for the biosimilars contained in our development portfolio. The development of a biosimilar is different from development of new drugs. For example, there is no need for basic research to prove the mechanism of action, or for extended toxicity or dose-finding studies, since this has already been established for the reference product. The focus is instead on reproduc-

¹ Liposomes are tiny capsules used as a vehicle for active pharmaceutical ingredients. They allow for a targeted transportation of these ingredients to the location where they are needed within an organism.

ibility of the product quality of the reference product. At the end of 2017, we submitted our first application for approval of a biosimilar product to the European regulatory authority, the biosimilar version of MSB11022 (Adalimumab¹), which can be used for chronic inflammatory diseases such as rheumatoid arthritis, intestinal diseases, and psoriasis (skin disease). We plan to launch Adalimumab in Europe in 2019. In 2018, we reached a milestone on the way to the approval of another biosimilar. MSB 11455, a biosimilar candidate for Neulasta® (Pegfilgrastim²), has achieved its primary endpoints in the two pivotal clinical studies. Pegfilgrastim stimulates the formation of white blood cells (leukocytes) in certain cancer treatments. MSB11456, a biosimilar candidate of Tocilizumab, which is used in chronic inflammatory diseases such as rheumatoid arthritis, is already in the clinical phase of development.

Clinical nutrition provides care for patients who cannot nourish themselves normally or sufficiently. This includes, for example, patients in intensive care and those with serious or chronic illnesses or malnourishment. Early and correct intervention can help patients avoid malnutrition and its consequences.

In **parenteral nutrition**, we devote our efforts to products that make a significant contribution to improving clinical treatment and the nutritional condition of patients and to innovative containers such as our multi-chamber bags that are safe and convenient in everyday use. In 2018, we continued the development of parenteral formulations. We are concentrating on formulations that are tailored to the needs of individual patient groups. During 2018, we completed the decentralized approval procedure in 28 European countries for our new multi-chamber bag SmofKabiven Low Osmo for parenteral nutrition. With that, we are expanding our range of Smof-Kabiven three-chamber bags with a further product that enables parenteral nutrition for patients with higher energy requirements and at the same time a well-tolerated composition for peripheral application.

In addition, we received approval exclusively for the U.S. market in a new indication for Omegaven, a 10% fish-oil-based lipid emulsion. This approval has been issued as an orphan

drug. Omegaven (fish oil triglycerides) injectable emulsion is indicated as a source of calories and fatty acids in pediatric patients with parenteral nutrition-associated cholestasis (PNAC). Our research and development work also includes the development of market-specific parenteral formulations. In 2018, we worked on products for the United States, South Korea, and China, among other markets, as well as the further internationalization of our product range.

In the development of our **enteral nutrition**, we are focusing our research and development activities on product concepts that support therapeutic compliance and thus the success of therapy. These include, for example, developing products with a wide variety of flavors to offer patients a wide choice of daily treatments, as well as products with a higher concentration of nutrients to facilitate the intake of the necessary amount of nutrients. We are also working on products that best meet the needs of specific patient groups.

In the area of **infusion solutions**, we are continuously working on improved and new primary containers with the aim of increasing the efficiency and safety of hospital staff. These include, for example, port systems that do not require the use of needles and thus reduce the risk of injury and the number of steps involved in their application.

In our work in **medical devices/transfusion technology**, we are constantly working on further developing our existing portfolio, as well as on new products. Particularly in the field of infusion technology, new software connections can contribute to simplifying daily work in hospitals. In 2018, for example, we received the CE mark for our Vigilant Master Med software and subsequently launched it in Europe. This drug library software offers a capacity of up to 10,000 drugs and up to 30 therapies per drug and can be connected to our Agilia infusion pump in hospitals, among other things. Vigilant Master Med helps to reduce dosage errors in the daily medical routine.

¹ MSB 11022 is developed as a biosimilar for Humira® and has not yet been approved by the relevant health authorities. Humira® (Adalimumab) is a registered trademark of AbbVie Biotechnology Ltd.

² MSB 11455 is developed as a biosimilar for Neulasta® and has not yet been approved by the relevant health authorities. Neulasta® (Pegfilgrastim) is a registered trademark of Amgen Inc.

EMPLOYEES

The knowledge, experience, and commitment of our employees are critical to our success. For this reason, Fresenius values a culture of **diversity**. The interplay of a wide range of views, opinions, cultural backgrounds, experiences, and values helps us to achieve our full potential and contributes to our success.

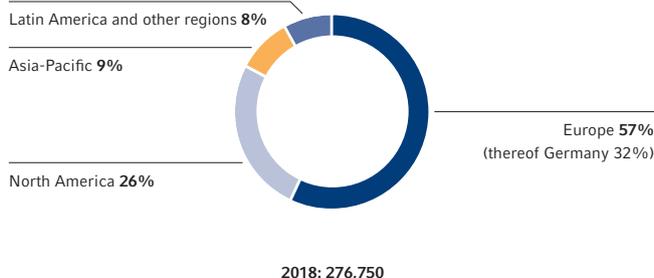
The **number of employees** increased by 1% to 276,750 employees at the end of 2018. With the transfer of Fresenius Helios' post-acute care business in Germany to Fresenius Vamed, approximately 7,600 employees were taken over by Fresenius Vamed.

Personnel expenses for the Fresenius Group were €13,426 million in 2018 (2017: €13,496 million), equivalent to 40.0% of sales (2017: 39.8%). Personnel expenses are on the previous year's level. Personnel expenses per employee were at €48.6 thousand (2017: €50.1 thousand) and at €50.0 thousand in constant currency. In Germany, Fresenius companies have signed tariff agreements with IG BCE, Marburger Bund, and ver.di (labor union for services). There were no significant structural changes to compensation or employment agreements in 2018.

HUMAN RESOURCES MANAGEMENT

We are constantly adapting our human resources tools to meet new requirements arising from demographics, the transformation to a service economy, skills shortages, and the compatibility of job and family life. For example, we offer **flexible working hours** and a long-term account for long-term professional planning.

EMPLOYEES BY REGION



EMPLOYEE RECRUITMENT AND PERSONNEL DEVELOPMENT

In order to ensure that our long-term needs for **highly qualified employees** are met, and to recruit new employees, we make use of online personnel marketing, regularly participate in recruiting events and careers fairs, and organize our own recruiting events. In addition, we encourage long-term retention with attractive development programs.

The approaches and measures for employee recruitment and personnel development in the business segments are based on the market requirements of each segment. They are coordinated, developed, and realized independently for each business segment.

At Fresenius, qualifications are the only thing that matters in the selection of personnel. Consequently, at Fresenius women and men with comparable qualifications will continue to have the same career opportunities. As of December 31, 2018, the proportion of female employees within the Fresenius Group was 68%. Women also held 30% of senior manage-

NUMBER OF EMPLOYEES

	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2016	Change 2018/2017	% of total as of Dec. 31, 2018
Fresenius Medical Care	120,328	121,245	116,120	-1%	44%
Fresenius Kabi	37,843	36,380	34,917	4%	14%
Fresenius Helios	100,144	105,927	72,687	-5%	36%
Fresenius Vamed	17,299	8,667	8,198	100%	6%
Corporate/Other	1,136	1,030	951	10%	0%
Total	276,750	273,249	232,873	1%	100%

PERSONNEL EXPENDITURE

€ in millions	2018	2017	2016
Fresenius Medical Care	6,440	6,898	6,291
Fresenius Kabi	1,506	1,443	1,372
Fresenius Helios	4,815	4,672	3,528
Fresenius Vamed	545	358	339
Corporate/Others	120	125	113
Total	13,426	13,496	11,643

ment positions, based on the number of worldwide participants in the Long Term Incentive Plan 2018 (LTIP 2018). Detailed information on the statutory targets for the participation of women and men in management positions is available within the Corporate Governance Declaration pursuant to Section 289f of the German Commercial Code (HGB) on our website, see www.fresenius.com/corporate-governance, as well as on page 144 of the Annual Report.

You can visit our award-winning **careers portal** at www.career.fresenius.com.

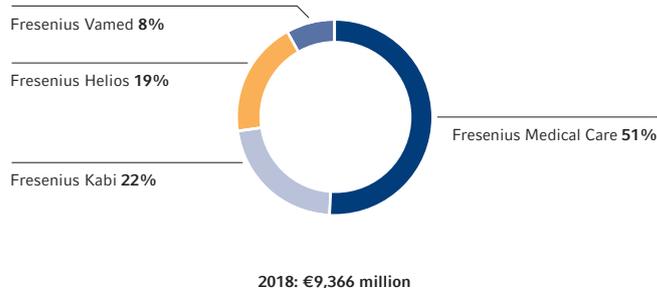
Further information on employment management can be found in our Group Non-financial Report on pages 113 ff. of our Annual Report.

PROCUREMENT

In 2018, the cost of raw materials and supplies and of purchased components and services was €9,366 million (2017: €9,032 million) and increased by 4% due to business expansion.

€ in millions	2018	2017
Cost of raw materials and supplies	7,899	7,766
Write-downs of raw materials, supplies, and purchased components	0	0
Cost of purchased components and services	1,467	1,266
Total	9,366	9,032

An efficient value chain is important for our profitability. In an environment characterized by ongoing cost-containment pressure from health insurers as well as price pressure, security and quality of supply play an important role. Within each business segment of the Fresenius Group, **procurement processes** are coordinated centrally, enabling us to bundle similar requirements, negotiate global framework agreements, constantly monitor market and price trends, and ensure the safety and quality of materials.

COST OF MATERIAL BY BUSINESS SEGMENT¹

¹ Before consolidation

QUALITY MANAGEMENT

The quality of our products, services, and therapies is the basis for optimal medical care. All processes are subject to the highest quality and safety standards, for the benefit of the patients and to protect our employees. Our quality management has the following three main objectives:

- ▶ to identify value-enhancing processes oriented toward efficiency and the needs of our customers
- ▶ to monitor and manage these processes on the basis of performance indicators
- ▶ to improve procedures

Further information on quality management at Fresenius can be found in our Opportunities and Risk Report on pages 82 f. as well as our Group Non-financial Report on pages 96 ff. of our Annual Report.

RESPONSIBILITY, ENVIRONMENTAL MANAGEMENT, SUSTAINABILITY

We orient our activities within the Fresenius Group to long-term goals, and thus ensure that our work is aligned to the needs of patients and employees, as well as shareholders and business partners, in a sustainable manner. Our **responsibility as a health care Group** goes beyond our business operations. We are committed to protecting nature as the basis of life and using its resources responsibly. It is our mission to constantly improve our performance in the areas of environmental protection, occupational health and technical safety, and product responsibility and logistics, and to comply with legal requirements.

Further information can be found in our Group Non-financial Report on pages 121 ff. of our Annual Report.