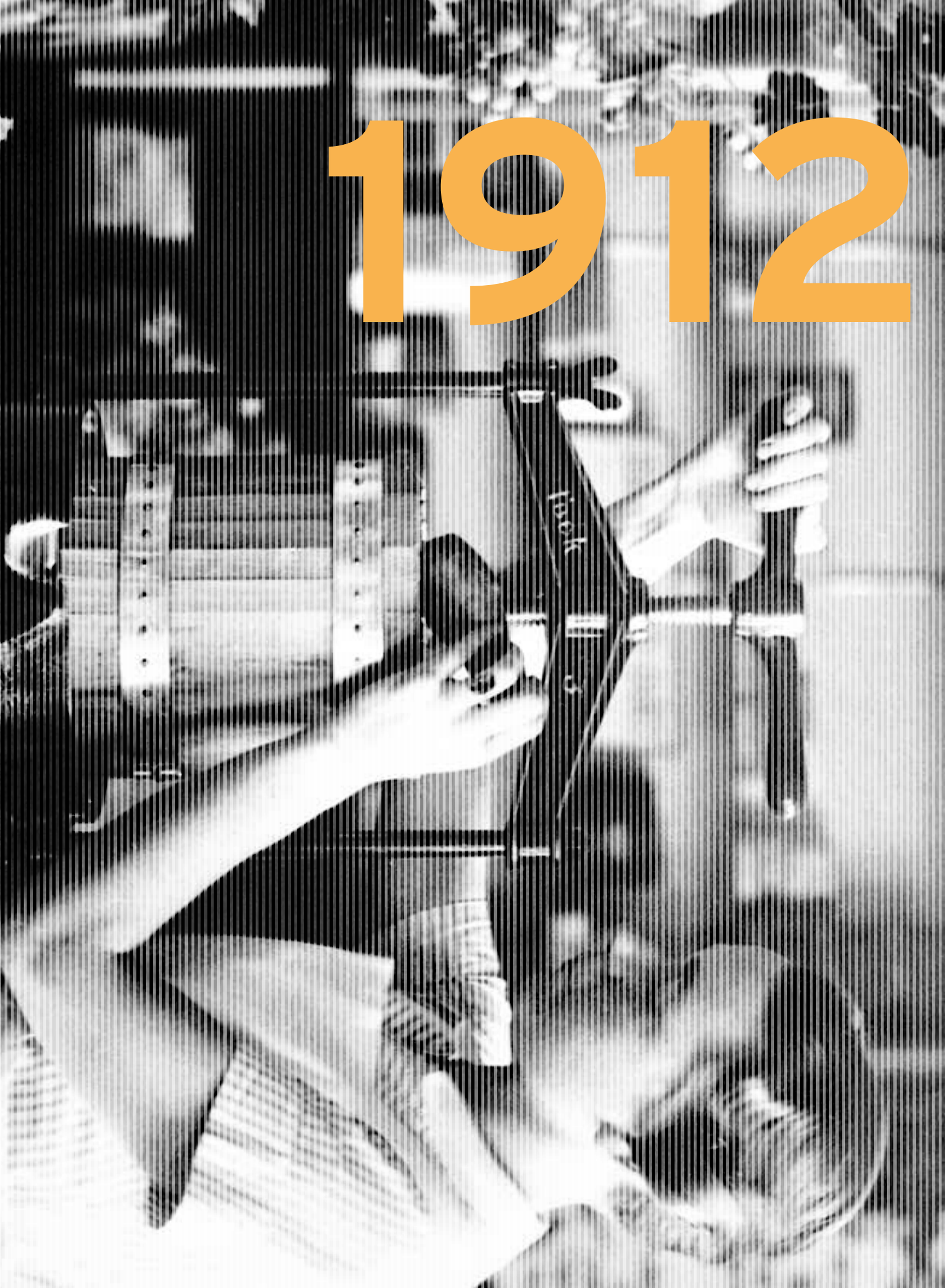
FRESENIUS

Forward Thinking Healthcare

Years


1912

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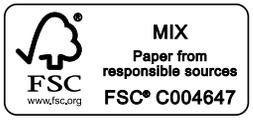


FRESENIUS

100 Years

Introduction

In 2012, Fresenius celebrates its 100th anniversary, and even more than that: The Hirsch Pharmacy in Frankfurt am Main, Germany, in whose laboratory the company was established on October 1, 1912 and in whose tradition Fresenius stands, also marks an anniversary. The first reference to the Hirsch Pharmacy that can still be traced was made 550 years ago. The history of the pharmacy and the work of Dr. Eduard Fresenius show the entrepreneurial values that still shape Fresenius to this day.

A Sense of Tradition

On October 1, 1912 the pharmacist Dr. Eduard Fresenius established the company *Dr. Eduard Fresenius chemisch-pharmazeutische Industrie* in Frankfurt and thus laid the foundation for the worldwide operating Fresenius health care group. He chose the date, on which he started work with his then only seven employees, carefully. The year and the date had a special significance for him: The Hirsch Pharmacy – known locally by its German name, Hirsch-Apotheke – celebrated its 450th anniversary in 1912, as it was first mentioned in the city of Frankfurt's *Bürgerbuch*, a sort of citizens' or freemen's roll, in 1462. And October 1, 1912 was exactly 20 years after Eduard Fresenius first started working at the Hirsch Pharmacy as an apprentice.

Eduard Fresenius also showed an awareness of the history of the pharmacy and his company in later years. In the summer of 1937, he opened up a new area of business for his company on the occasion of the 25th anniversary of the *Chemisch-pharmazeutische Industrie* and the 475th anniversary of the Hirsch Pharmacy. He started selling special fruit and vegetable drinks for the diet cures of the health resort patients in the spa town of Bad Homburg near Frankfurt.

Lasting Values – for the Welfare of Patients

Dr. Fresenius was proud of the long pharmaceutical tradition in which his company stood, because it was far from self-evident that a pharmacy was able to hold its ground for several hundred years. He knew: If one considered the Hirsch Pharmacy's history, one would soon find that there were several important factors that were crucial to the pharmacy's constant success and that would also strengthen the company's efforts to make advances in medicine. Those values are not isolated or an end in themselves, but rather dedicated to the welfare of patients. Quality, cost awareness, availability of drugs and quick supply all serve human health.

Quality as a Guiding Principle

In 1462, Frankfurt had a little fewer than 10,000 inhabitants, which made it a medium-sized town by the standards in Europe at that time. In those days, the Hirsch Pharmacy, situated right next to Frankfurt's main church, bore more resemblance to a spice shop than to what we nowadays understand by a pharmacy. What distinguished this shop from others was the quality of the products, its select product range and in particular the owner's qualifications. He had passed an official examination and was able to produce remedies according to detailed prescriptions from doctors. In doing so, he and his products' quality were tested by physicians, whom the city appointed for this, on a regular basis. Very little about this procedure changed up until the 19th century. The fact that the Hirsch Pharmacy has consistently held a license to produce drugs for several centuries is proof of its owners' steady quality consciousness. After all, the urban authorities used to quickly withdraw the license to produce remedies from any pharmacist who did not meet the requirements.

Affordable Drugs

The pharmacists who had run the Hirsch Pharmacy over the centuries knew that a pharmacy's success did not only rest on the quality of its products, but also on the prices of the remedies. The claim that medical products had to remain affordable became tangible for Dr. Fresenius in particular because pharmacy in Germany underwent a rapid evolution that brought significant changes at the end of the 19th century. New production processes made it possible to industrially manufacture large quantities of drugs and consequently to sell them at lower prices than before. Many pharmacists in Germany established pharmaceutical companies in those days, and so did Dr. Fresenius.

His personal contacts with physicians proved to be important for this. Professors of Medicine at the University of Frankfurt had developed their own

remedies which they wanted to make available to a larger number of patients and which they wanted to be manufactured by a professional. Dr. Fresenius and his company accommodated their wishes. Eduard Fresenius entered into a cooperation with those medical specialists and, in addition to premium quality drugs, also guaranteed their large-scale production and distribution, and consequently a good price.

Quick Supply

The fast delivery of drugs to the patients who needed them was an important concern for Eduard Fresenius, which was why he relied on the most recent developments in transport technology from a very early stage. When he took over the Hirsch Pharmacy from his father in 1911, the streets of Frankfurt were still dominated by horse-drawn carriages and bicycles. Eduard Fresenius, however, immediately bought an automobile for the pharmacy's delivery service, which had so far used bicycle couriers only. The car was then used to make deliveries to business partners and customers further away. This in combination with a telephone ordering service ensured the prompt supply of drugs, also from the affiliated manufacture. This gave Dr. Fresenius a competitive advantage over other pharmacists and producers of pharmaceuticals in Frankfurt.

Employees are Crucial

Dr. Fresenius had learnt from the history of the Hirsch Pharmacy that, in the pharmaceuticals industry, success did not depend on the manager or the pharmacist alone but also on the employees and their accuracy, conscientiousness and caution. To this was added openness for the ideas and concerns of physicians. In close collaboration with medical developers and staff in hospitals, the young company brought new developments on the market and thus made vital contributions to progress in medicine.

Traditions

With its now more than 160,000 employees worldwide, Fresenius differs in many respects from the small family operation that Eduard Fresenius managed until his death in 1946. The company has been constantly expanding since the late 1950s, when the so-called *Wirtschaftswunder*, Germany's post-war "economic miracle," began. The company's portfolio very soon included more than the infusion solutions that were at its origin and its specialties for general medicine and dermatology. Based on its expertise in the production of infusions and special solutions, Fresenius opened up a new area of business with fluid clinical nutrition and its application. Via the production of dialysis fluids and the distribution, maintenance and, ultimately, production of dialysis machines, the company expanded into the business area of dialysis, in which it now holds a world-leading position thanks to the ground-breaking inventions of its employees.

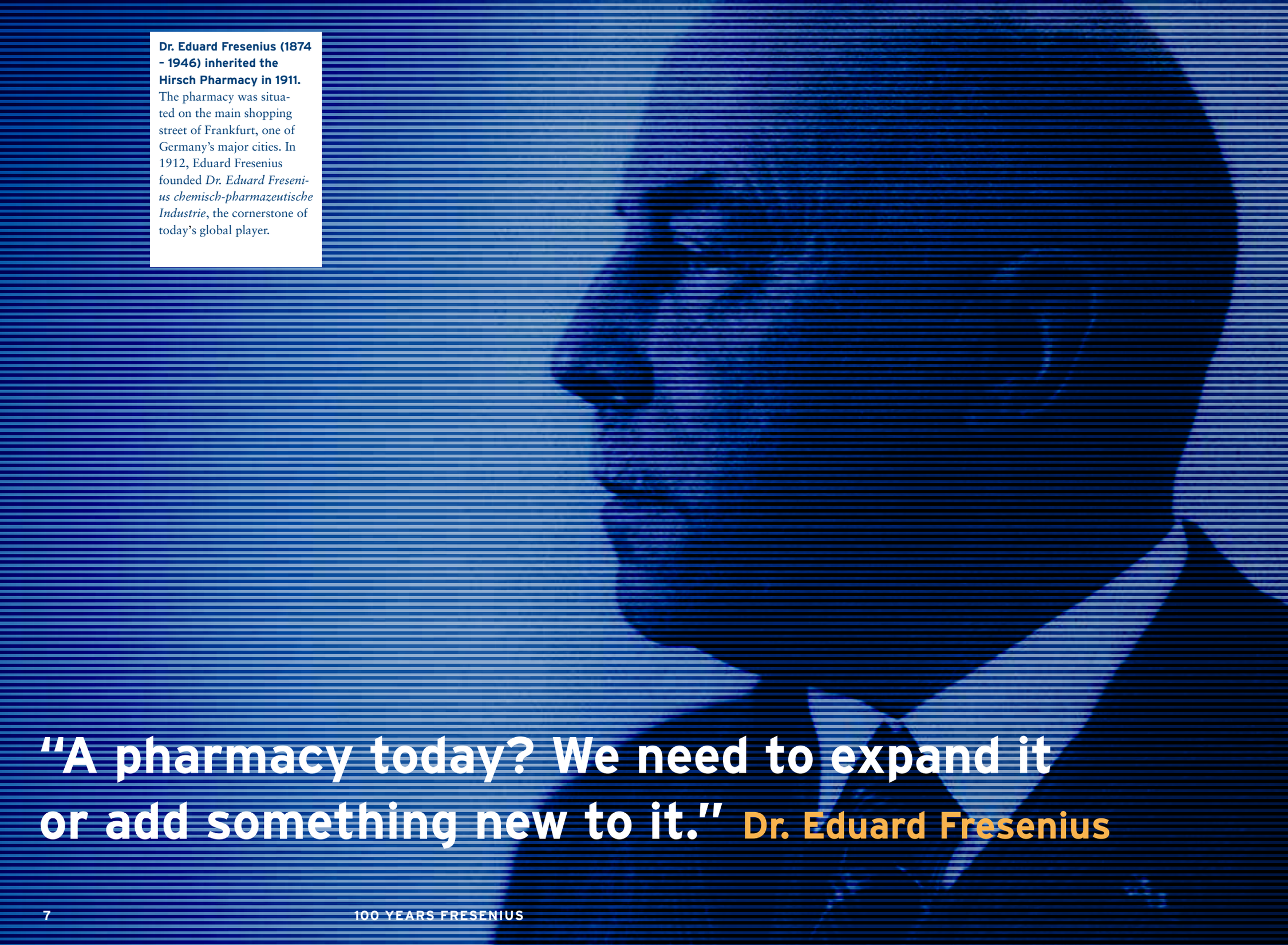
Through its planning and construction of facilities for the production of infusion solutions, Fresenius gained experience in production technology, and later the planning, construction and management of hospitals and health care facilities was added. Finally, Fresenius also entered the private hospital operating sector.

Still, there are continuities regarding values that would have also been important to Dr. Fresenius: The company and its employees are still guided by the old, proven ideals of Dr. Fresenius in everything they do – striving to offer the best quality in all fields of activity, the aim of keeping medical services affordable, making one's products available to medical staff and patients as quickly as possible, and making a contribution to advances in medicine thanks to inspired and motivated employees.

And that is how Fresenius will continue to meet the standards that the company has been meeting for the first 100 years of its existence: Providing the best possible medical care for seriously ill people around the world.

Fresenius 1912 to 1962

FROM A PHARMACY TO A PHARMACEUTICALS BUSINESS



Dr. Eduard Fresenius (1874 – 1946) inherited the Hirsch Pharmacy in 1911. The pharmacy was situated on the main shopping street of Frankfurt, one of Germany's major cities. In 1912, Eduard Fresenius founded *Dr. Eduard Fresenius chemisch-pharmazeutische Industrie*, the cornerstone of today's global player.

"A pharmacy today? We need to expand it or add something new to it." **Dr. Eduard Fresenius**

Founding Document. Dr. Eduard Fresenius informs the commercial registry office of the city of Frankfurt that he will establish a company, effective as of October 1, 1912. Two weeks later, this company was entered in the commercial register under the name of *Dr. Eduard Fresenius chemisch-pharmazeutische Industrie*.

The Zeil in Frankfurt. The Hirsch Pharmacy, where the Fresenius company was also located until 1934, can be seen on the right margin of this picture. The Zeil was and still is Frankfurt's main shopping street, running from east to west in the northern part of the city center.

View into the Hirsch Pharmacy in the early years of the company. The pharmacy's laboratory was the nucleus of today's global player. In the first few years, the pharmacy and the company combined had seven employees, three of them pharmacists.

The Hirsch Pharmacy had its own delivery service from a very early stage, which was also used by its affiliated pharmaceutical wholesale business. Among its customers were the health spas in the vicinity of Frankfurt, and supplies were taken there by car.

As was common among German entrepreneurs at the time, the owner of the Hirsch Pharmacy had labels printed in order to promote his pharmacy. The illustrations show details of the premises as they were in that era.

A specialty of Eduard Fresenius, which was instrumental in the company's success, were solutions made with pure, sterile water. It was thanks to these solutions that the company built a reputation in the scientific world. And so, Fresenius collaborated with the Nobel-Prize winning physician Paul Ehrlich, who needed sterile water for the intravenous injection of Salvarsan, a remedy for syphilis that Ehrlich had developed. The water was first sold under the name "Injectio Fresenius," but the name was later changed to Ampuwa, short for the German word *Ampullenwasser*, which translates as ampule water. An early advertisement for Ampuwa claims: "Chemical-therapeutic and chemical-bacteriological purity is guaranteed. Its long storage life has been clinically tested for years. Impurities are strictly avoided." This refers to the fact that distilled water that was contaminated with germs could harm patients if it was used for Salvarsan injections.

Hirsch Pharmacy's bicycle couriers supplied the pharmacy's customers in Frankfurt with pharmaceuticals until into the 1940s. The number of staff proves that the pharmacy and the company were doing good business.

Fresenius – From Early Days to the Postwar Economic Boom

The Fresenius company, like many pharmaceutical businesses, evolved from a pharmacy's laboratory. Frankfurt pharmacist Dr. Eduard Fresenius had ambitious aims, which he consistently realized with his "chemical-pharmaceutical" company founded in 1912 – to the benefit of many ill people.

A Prominent Family

The name "Fresenius" has a positive reputation in Germany, with a large family tree that includes a number of renowned scholars. For instance, there was Remigius Fresenius, who established a laboratory for chemical analysis (now known as the Institut Fresenius) in Wiesbaden in the middle of the 19th century and was one of the pioneers of chemistry in Germany. Another branch of the family specialized in pharmacy in Frankfurt. In the 1870s, Johann Philipp Fresenius took over the Hirsch Pharmacy on the Zeil, Frankfurt's main shopping street. The Hirsch Pharmacy is one of Frankfurt's oldest apothecary shops, with a history that can be traced back to 1462. In 1905, Johann Philipp Fresenius handed over the pharmacy's management to his son Eduard, who had big plans for the Hirsch Pharmacy.

A Pharmacy with Potential

Eduard Fresenius realized that the market would become more demanding for pharmacies. The number of remedies that pharmacists had previously manufactured themselves, but that pharmaceutical companies were now producing on an industrial scale, kept increasing. Furthermore, drugstores were expanding their range of medical products and competing with the pharmacies. Eduard Fresenius had a double strategy to cope with these intrusions on his pharmacy's traditional business activity: He added a pharmaceutical wholesale business with delivery service to his pharmacy, and he developed the Hirsch Pharmacy's laboratory into a pharmaceuticals company, *Dr. E. Fresenius chemisch-pharmazeutische Industrie*. On October 1, 1912 he filed a request to have his company entered into Frankfurt's commercial register. The business operated from the rear building of the pharmacy in Frankfurt until 1934, when Eduard Fresenius relocated the headquarters to nearby Bad Homburg.

Important Contacts

The company's rapid success was based on numerous collaborations with important medical figures entered into by Eduard Fresenius and his employees. For instance, Fresenius supported Nobel laureate Paul Ehrlich's work as early as 1912. The company produced the sterile water ("Injectio Fresenius") that was used to intravenously administer Salvarsan, with which Ehrlich had achieved the first successful treatment of syphilis. Another physician for whom Fresenius worked was Karl Herxheimer, a famous dermatologist at the time. For him, Fresenius produced various compounds for the treatment of rashes, lichen and eczema. Another of Fresenius' cooperation partners was Carl von Noorden, who, in his function as a dietary researcher, ran Europe's first specialized clinic for diabetes in Frankfurt.

In addition to these commitments in chemical pharmacy and infusion solution production, Eduard Fresenius also focused on natural remedies, of which he manufactured a wide range. The plants required for this were grown by his employees in a large herb garden on the outskirts of Frankfurt.

Brilliant Ideas

Eduard Fresenius had numerous ideas about how to make his pharmacy and business better known and more popular, and often he was well ahead of his time with his concepts. For example, he launched the *Unterhaltungsblatt der Hirsch-Apotheke* (Hirsch Pharmacy's amusement paper) in the 1930s. With this periodical, which presented the more than 450 years of the Frankfurt pharmacy's history, he tried to win his customers' loyalty and to promote his company's products – a marketing tool not widely in use at the time.

Another example of Eduard Fresenius' ingenuity was the diet pavilion that he first opened in Bad Homburg in 1937. There, Fresenius employees offered visitors to the famous spa town freshly made fruit and vegetable juices during the summer months and prepared special drinks for dieting patients according to doctors' prescriptions.

Milk mix drinks, an early form of milkshakes, were particularly popular.

Difficult Years

Realizing these big plans, however, came at a price. The advertising efforts proved to be quite expensive; the diet pavilion, for instance, was good for Fresenius' reputation, but the accounting records show it operated at a loss: Storing fresh fruit and vegetables for extended periods was difficult at the time, and they often went bad before they could be sold. Eduard Fresenius generally did not have the Midas touch with financial matters, resulting in the pharmacy, the wholesale business and the chemical-pharmaceutical company encountering financial difficulties. In addition, Germany's political situation also had an impact on the Fresenius enterprise. The National Socialists – the Nazis – came to power in 1933 and Eduard Fresenius, who did not join the party, lost his contacts with many important business partners who had to leave Germany or give up their work because of their Jewish descent. Due to its supplying the German military with drugs, as for example the Freka frost-protection cream produced by Fresenius, the company's output increased temporarily, and Eduard Fresenius hired female workers, who were paid less, to cope. He did not employ any forced laborers, who were frequently used in German industry to replace the men who had been drafted for military service at that time.

A New Start in 1945

After the war, Eduard Fresenius was faced with the fact that his life's work was in ruins: The Hirsch Pharmacy in Frankfurt had been destroyed during the air raids by the Allies in March 1944. While the business premises in Bad Homburg had not been hit by any bombs, a shortage of raw materials made production impossible. Eduard Fresenius had only just started reorganizing his business activities when he died in February 1946. Since Eduard Fresenius did not have any children of his own, he bequeathed his possessions to a community of heirs, among them his foster daughter Else Fernau. The community of heirs decided that Else Fernau, who was just under 21, should receive training as a pharmacist and then take over the management of the pharmacy and company. Her time came when she finished her studies in pharmacy in 1951: Else Fernau took over the Hirsch Pharmacy and the management of the pharmaceuticals company at the age of only 26. She acquired the necessary business administration skills in an evening course at a private commercial school in Frankfurt.

Else Fernau rebuilt the Hirsch Pharmacy salesroom at its former location on the Zeil in the 1950s and later left its management to a fellow pharmacist. She herself then concentrated on relaunching the production at the company in Bad Homburg and looked to employ specialist staff and assistants. It was the economist and jurist Hans Kröner who offered particularly helpful expert advice. In his capacity as an economic consultant for the chemical-pharmaceutical industry, Hans Kröner had outstanding experience in this area, and Else Fernau, who had first consulted him on legal questions, soon enlisted his help in developing business strategies for the company. At the beginning, the Bad Homburg plant produced mainly infusion solutions, for which Fresenius had been well known since the 1920s. Following first successes, Else Fernau and Hans Kröner extended the product range to make it a comprehensive portfolio including high-quality special solutions. This was how the company, which was named *Dr. Eduard Fresenius chemisch-pharmazeutische Industrie KG*, was among the leading hospital supply businesses only a few years later. And that was only the beginning of a great success story.

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Pictures to the preceding page: [01, 02] Ampuwa (short for the German *Ampullenwasser*, or ampule water) is pure sterile water in ampules to be used for solutions for intravenous injections. Ampuwa is still part of Fresenius' product range today. [03] Carboneol, which was developed in collaboration with the dermatologist Karl Herxheimer, proved to be a very useful addition to the range of skin care remedies. It is applied in cases of psoriasis and eczema. [04, 05] Bormelin-Adrenalin for the treatment of swollen nasal mucosa, e.g. as a result of colds, hay fever or rhinitis. [06] In 1907, Fresenius started producing Terpinol pastilles against colds. Their main ingredient is a distillate of the alcohol terpineol, which occurs in essential oils and smells like lilacs. In some versions, Fresenius added the opiate codeine, which serves as a painkiller and cough suppressant.

Pictures to the left: [07] Noorden's nutrient cream serves for skin treatment in cases of dry eczema, bee and hornet stings, frostbite and open wounds. The cream was developed in collaboration with Prof. Carl von Noorden in the 1920s. [08] Dr. Fresenius' pharmacy laboratory was located on the back side of the Zeil and the Hirsch Pharmacy and its address was Holzgraben 16. The sketch is from the year 1934. [09] Hasengasse in Frankfurt in 1931. On the right, there is a passage to Holzgraben, where Dr. Fresenius' manufacturing site was located until 1934. [10] In 1934, Dr. Fresenius relocated his chemical-pharmaceutical business to Bad Homburg. Seen in the photograph is Louisenstraße at the height of the old *Kurhaus*, which was later destroyed in Allied bombing raids.

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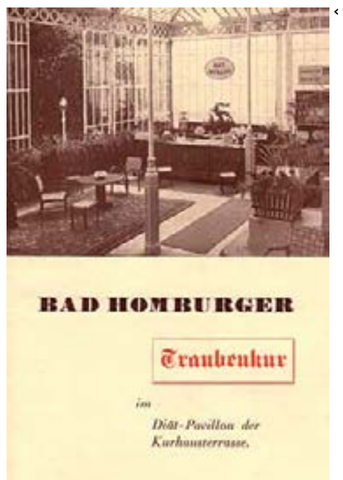

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Pictures to the left: [11] View into the Fresenius business premises at Gluckensteinweg 5 in Bad Homburg in the 1930s. [12] Nigraphan, produced by Fresenius, is a remedy made from black Spanish radish and has beneficial effects on patients suffering from diseases of the liver and biliary tract. [13] In 1937, Dr. E. Fresenius opened a diet pavilion on the terrace of the *Kurhaus* in Bad Homburg. This spa town near Frankfurt was a popular resort for the entire European aristocracy. [14] Grape juice production for the "grape cure" that Fresenius introduced in the late 1930s. [15] May 18, 1938: Opening of the grape cure season under the colonnades in Bad Homburg's well area. [16] A shop window displaying products for the diet cure. [17] A brochure from 1937 says about the grape cure in Bad Homburg: "To the triad of water, air and beautifully curved, wooded hills, another charming note is now added – the grape cure. Certainly, it is just one component of the many-faceted image of the complete health cure in Bad Homburg, but it has become indispensable and the exhilarating process of convalescence can no longer be imagined without it." [18] Dr. Eduard Fresenius was thinking ahead of his time. His employees prepared freshly squeezed fruit and vegetable juices according to doctors' prescriptions in the diet pavilion. In addition to that, pasta and baked goods that were suitable for dieting patients and milk mix drinks, which are now known as milkshakes, were also sold at the pavilion.

Pictures to the right: [19] The diet pavilion on the terrace of the *Kurhaus* in Bad Homburg in 1937. [20] Herbs and medicinal plants that were needed in the production of Fresenius compounds were cultivated in the garden of the property at Gluckensteinweg 5 in Bad Homburg until the 1950s. Seen in this picture are Fresenius employees picking mulleins in 1939. [21] Logo used on the occasion of the triple anniversary of the Hirsch Pharmacy, chemical-pharmaceutical company and wholesale business in 1937. [22] At the anniversary celebration of Fresenius in 1937.

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FRESENIUS 1935 - 1937

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1937

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FRESENIUS 1938 – 1945

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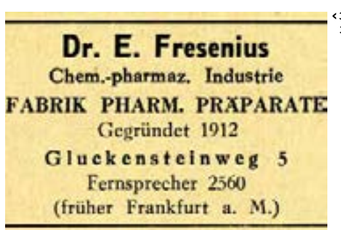
1941



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Pictures to the far left: [23] Another offspring of the collaboration with the expert in nutritional medicine Prof. Carl von Noorden was the so-called Vier Winde Tee (four winds tea). It was included in Fresenius' product portfolio in the mid-1930s. This infusion provides relief from heartburn, bloating, flatulence and indigestion. It consists of a special blend of caraway, aniseed, fennel, peppermint and chamomile. [24] Treunodin by Fresenius is a painkiller that also has an antipyretic effect and helps patients' general recovery. Fresenius also launched Treunodin in the form of suppositories. [25] Special medical strip for diagnostic tuberculin samples by Fresenius used to detect tubercular processes in the body. To do this, percutaneous tuberculin ointment is placed on the strip, which is then applied to the patient's skin. Judging by the reaction of the patient's skin, the physician in charge can tell whether or not the patient is latently infected with tuberculosis. [26] Glass ampules for standard infusion solutions, here physiological saline solution, around 1960.

Pictures to the left: [27] Olsan Hautöl skin oil was used, among other things, for wound treatment in World War II. [28] A poem about Fresenius products written on the occasion of a company party in the year 1941. [29] The staff of *Dr. Eduard Fresenius chemisch-pharmazeutische Industrie* around 1941. Sitting at the front wearing a hat: Eduard Fresenius. [30] An advertisement for the Fresenius company from the 1940 Bad Homburg directory. [31] Draft for a logo for the Hirsch Pharmacy from the wake of World War II, during which the pharmacy's salesroom was destroyed. For a short while the pharmacy, which had had its rooms in the building Zeil 111, had to be relocated to Zeil 105. [32] Company signet from the mid-1940s. [33] Bad Homburg was the target of four bomb raids during the war, the last of which was the heaviest and took place on March 8, 1945. During these bombings the *Kurhaus* and the theater were so severely hit that they burnt out completely.

1945

FRESENIUS 1938 - 1945

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“Straight ahead with great plans, wishes and hopes for the near future.”
Else Kröner, 1946


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Pictures to the preceding page: [34] A sterile, pyrogen-free injection solution of chemically pure, crystallized, synthetic vitamin B1. [35] The Hirsch Pharmacy was destroyed during bombing raids in 1944. Seen here is the makeshift building of 1946. [36] A group of Fresenius employees in 1953. [37] Selection of Fresenius’ postwar product line: sterile and free of pyrogenics in the “Fresenius-bottle.”

Pictures to the left: [38, 39, 40] Else Kröner, née Fernau (1925–1988). She finished her school-leaving examinations in Frankfurt in 1943, and, after completing her compulsory year with the Reich Labor Service, she took up her studies in pharmacy. In 1951, she took over the company’s management. Else Kröner managed to consolidate the company during the difficult years of reconstruction. She laid the foundations for Fresenius’ expansion beginning in the 1970s. The photographs were taken at the topping out ceremony for the new premises at Gluckensteinweg 5 in 1955 and show Else Kröner among her colleagues and construction workers. [41] Else Fernau, Eduard Fresenius’ foster daughter, helped out at Hirsch Pharmacy in Frankfurt while she was still studying. The photograph was taken in 1950. Else Fernau took over the management of both pharmacy and company the following year.

Pictures to the right: [42] The entrance to Fresenius’ production facilities at Gluckensteinweg 5 in Bad Homburg in 1955. [43] Fresenius KG’s business premises in the same year. [44] In front of the new building, which had been constructed to make more room for infusion solution production. [45] In the early 1960s: Seen on the far right is Mr. Bates from the English company Burroughs Wellcome & Co., with which Fresenius entered into collaboration. [46] Glass ampules served as containers for injection solutions. [47] The company was a member of the German pharmaceuticals organization. Seen here is a membership card from 1951.

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FRESENIUS 1946 - 1955

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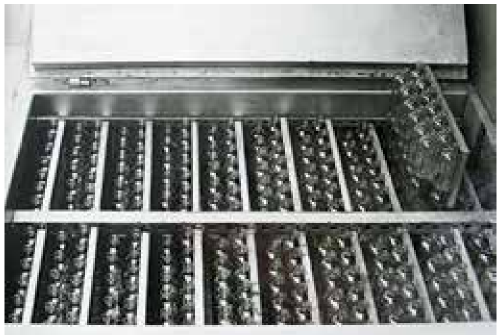

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MITGLIEDSAUSWEIS 19 57

Die

Deutsche Pharmazeutische Gesellschaft Rhein Main

Sitz Frankfurt am Main

bestätigt Sie hiermit als ihr Mitglied und bittet Sie, die Gesellschaft in ihren wissenschaftlichen Bestrebungen nach Kräften zu unterstützen.

Frankfurt am Main, den 16. 5. 1957

Vorsitzender

Schriftführer

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FRESENIUS 1956 – 1962

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Pictures to the left: [48] Fresenius stand at a conference for internists in Wiesbaden in 1956. [49] Machines in the new building from 1955: At the front, there are three tablet presses, whose flywheels provide for the required centrifugal mass. In the area at the back, there are two coaters, which served to sprinkle the cores, which are meant to become sugar-coated pills, with sugar solution, and keep them moving until they have reached their specified weight. [50] Sketch of the ampule filling station of the Dr. E. Fresenius company in Bad Homburg.

Pictures to the right: [51] Part of Fresenius' product range in the early 1960s: Among the successful products which had been developed in the days of Dr. Eduard Fresenius were Bormelin balm, Ampuwa, Noordens nutrient cream, Perkutan Hamburger forte, which was used to diagnose tuberculosis, and several vitamin compounds. [52] A machine for filling and sealing glass ampules in the Fresenius premises in the 1950s. At this time, Fresenius' production line had already been automated to a large extent. The increased demand for medical products during the years of Germany's postwar "economic miracle" had resulted in a rationalization and automation of processes in the company. [53] Infusion solutions made by Fresenius, around 1960. [54] Drawing of a building in the business premises in Bad Homburg from 1962. [55] Else Fernau, around 1960, among her employees (from the left): the sales representatives Huygen, Borchers and Mann, Boysen (office worker), manager and pharmacist Hawickenbrauck, sales representative Grau, Dr. Müller and Hans Kröner (management). On the far right, Mr. Bates from the English company Burroughs Wellcome & Co. Else Fernau and Hans Kröner got married in 1964. From then on they acted as joint managers of the company.

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FRESENIUS 1956 – 1962

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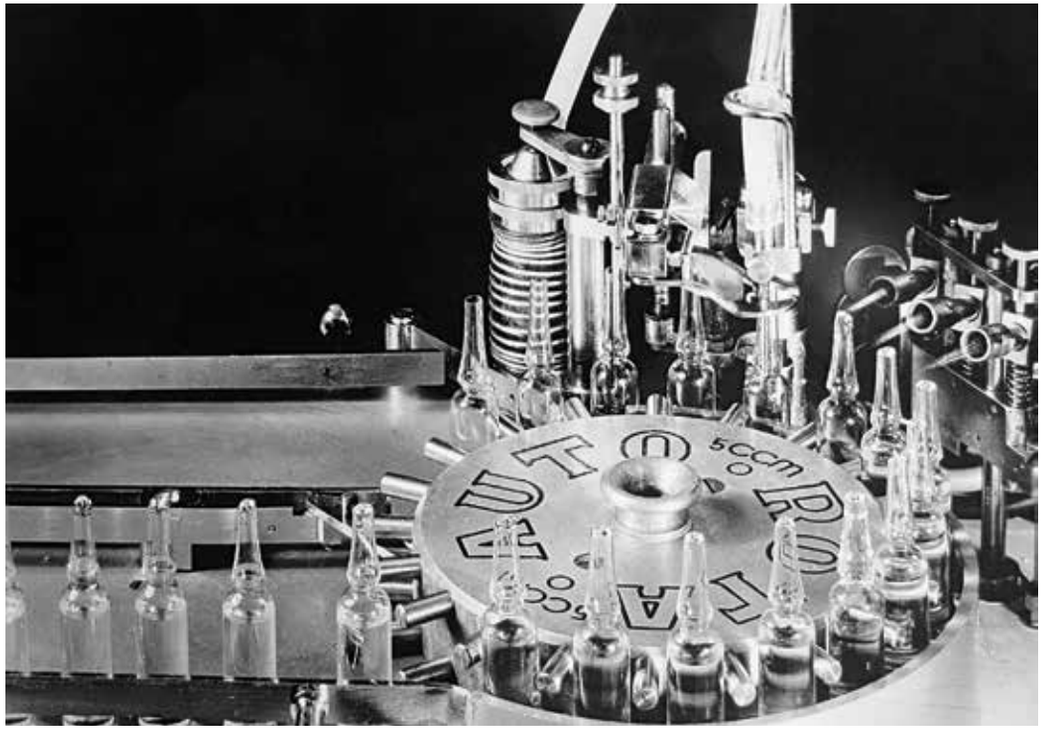

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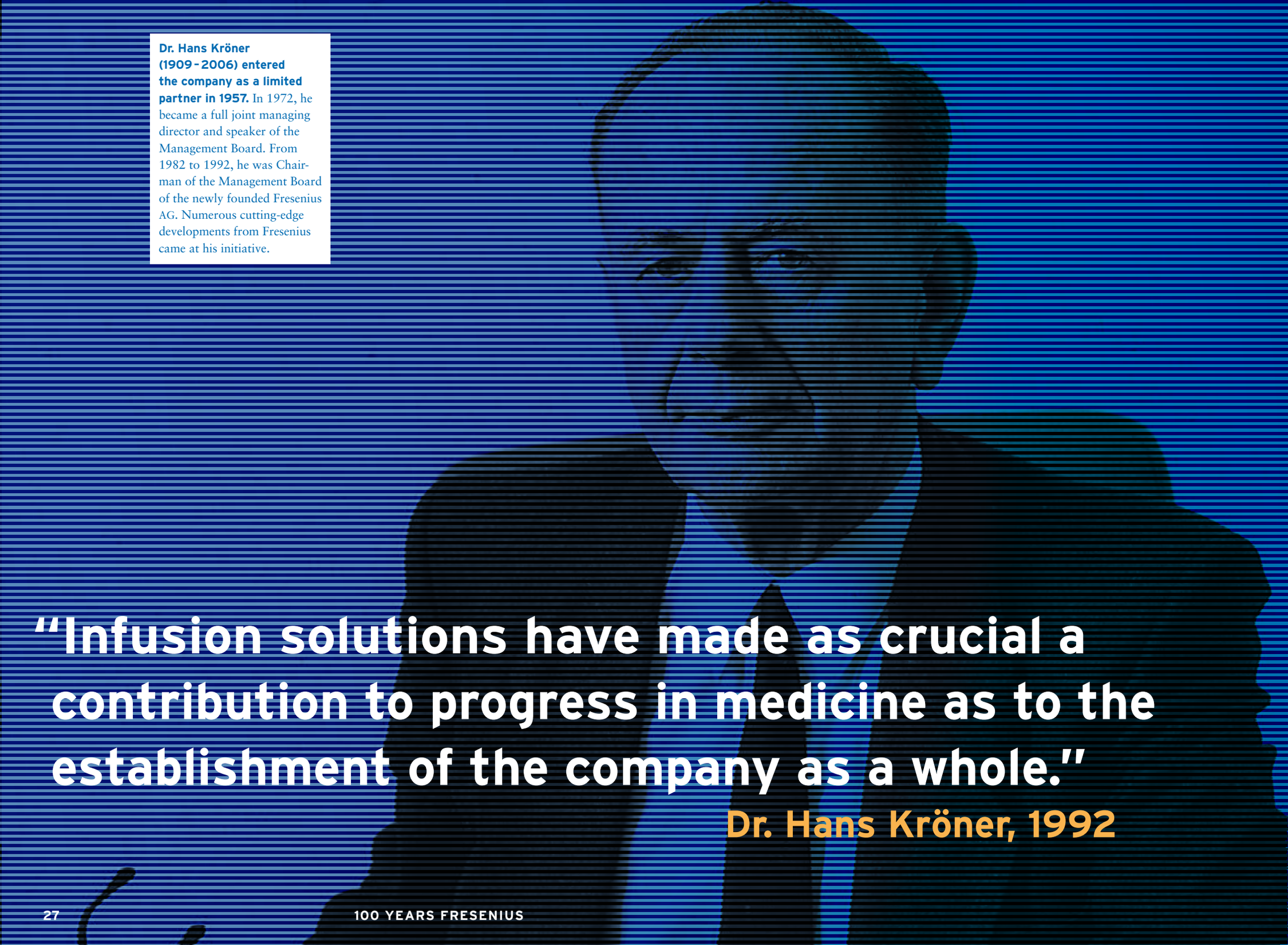
1962

Fresenius Kabi

EXPANDING THE PHARMACEUTICALS BUSINESS

Infusion solutions marked the beginning of the company, and in the 1960s a continuous expansion of this field began. This included the development of new nutrition and volume replacement solutions as well as intravenously administered generic drugs.

Dr. Hans Kröner (1909 – 2006) entered the company as a limited partner in 1957. In 1972, he became a full joint managing director and speaker of the Management Board. From 1982 to 1992, he was Chairman of the Management Board of the newly founded Fresenius AG. Numerous cutting-edge developments from Fresenius came at his initiative.



"Infusion solutions have made as crucial a contribution to progress in medicine as to the establishment of the company as a whole."

Dr. Hans Kröner, 1992

Preparation of an Aminosteril KE infusion. With the introduction of a composition of amino acids according to the natural amino acid pattern of the potato and the egg, Fresenius laid the foundations for the new product group clinical nutrition.

FRESENIUS KABI

Infusion solutions were distributed in glass bottles until the early 1960s, when Fresenius developed suitable plastic bottles and used them instead. Later still, plastic bags came into widespread use and their quality has been continuously improved over time.

FRESENIUS KABI

The ability to supply products quickly is a key to Fresenius' success. Inside this Fresenius Kabi plant in Friedberg, Germany, which opened in 1997, there is also a distribution center that includes a fully automated high-rack warehouse. With the help of modern software, around 2,000 orders are processed here every day. The facility now has more than 600 employees.

The production of infusion solutions at Fresenius Kabi. The growth of Fresenius' pharmaceuticals business, today's Fresenius Kabi, can be seen in the production figures: In 1965 the company produced 4 million bottles of infusion, special and nutrition solutions, a figure that rose to 13 million a decade later and to about 24 million in 1985. In 2006, production by Fresenius Kabi had risen to about 850 million bottles.

From Fresenius Pharma to Fresenius Kabi

Fresenius Kabi is currently the European market leader in infusion therapy and clinical nutrition. In addition, the company offers a wide portfolio of medical devices, and is among the leading suppliers of intravenously administered generic drugs in the United States. All these successes have their beginnings in a history that started in the 1960s.

Great Challenges

In the early 1960s the company *Dr. E. Fresenius chemisch-pharmazeutische Industrie KG* was a small owner-operated business with a familial atmosphere, but this soon changed. Else Fernau and Hans Kröner, who were married in 1964, made the company's expansion the task of their lives. They knew they could only keep the company alive if they managed to gain greater market share and to grow through innovations. So, together with their employees, they started looking for new ideas – and they soon met with success.

Packaging as a Way to Success

At the time, it was a groundbreaking idea: Make bottles for infusion solutions out of plastic. Glass ampules were still being exclusively used for this product group during the 1960s, but they had two significant disadvantages: Glass is relatively heavy, and it breaks easily during transport. Since the late 1950s, a Fresenius employee had been busy experimenting with special receptacles made of synthetic materials, which were already in use for medical solutions in industrial pharmacy. Yet putting this idea into practice was more difficult than initially thought, because a way first had to be found to sterilize plastic ampules. After numerous elaborate tests, a solution to this problem was found, and in 1963 the Management Board decided that the plastic bottles for infusion solutions should be produced by Fresenius itself. These bottles were made of granulated plastic and then blow-molded with the help of sterile air, before being filled with the solutions and hermetically sealed. Easy to handle and break-resistant, they were an immediate, huge success, for both Fresenius and patients.

A Question of Nutrition

As Fresenius' expertise had been in infusion solutions since the company's beginning, management decided that its know-how in this field, centered in the *Fresenius Pharma* division, should be expanded. A newly established research department opened up new areas of activity in nutritional medicine for the company in the early 1970s. Fresenius began developing products for the nutrition of patients, to be administered both enterally (i.e. through the stomach or the intestine, or through a stomach tube) or parenterally (through a vein, i.e. intravenously). Amino acid solutions were added to the product lineup alongside traditional solutions like saline and carbohydrate, and this meant a significant expansion of the range of products.

The Potato-Egg Pattern

When it was discovered that by administering amino acids the body could be enabled to produce essential protein components, thereby improving many vital functions, the company's researchers strove to adjust treatments accordingly. Because proteins consist of a large number of different amino acids, and patients, depending on their clinical profile, have different protein deficiencies, specialized combinations were required. Consequently, Fresenius employees, in collaboration with research institutes and clinics, developed an effective composition corresponding to the natural amino acid pattern of the potato and the egg. This concept, henceforth closely linked with the name Fresenius, became known in infusion therapy as the "potato-egg pattern." The first solution that was produced using this pattern and launched by Fresenius was named Aminosteril KE, "KE" being short for *Kartoffel-Ei*, the German words for potato and egg.

Medicine for the Entire World

Oralpädon was one of the most successful pharmaceutical products developed by Fresenius in the early 1970s. This glucose-electrolyte mixture, in the form of a powder to be dissolved in water, compensated for the loss of fluid and minerals that occurs during diarrheal illnesses. In 1973, Fresenius was among the first manufacturers of this kind of product in Europe. Oralpädon,

with a taste specially developed to appeal to children, was mainly used in developing countries, where millions of children were suffering from and dying of diarrhea every year. Five years later, Fresenius launched Elotrans, which was designed for adults, and Fresenius supplied UNICEF with both drugs, bringing them into use worldwide.

A Time for Expansion

Management continued to strengthen Fresenius' pharmaceuticals branch, aiming not only to produce the highest quality infusion solutions and clinical nutrition products but also to ensure they could be supplied quickly. To achieve this, Fresenius began the mass production of infusion solutions in St. Wendel, Germany, in 1974, and expanded its storage capacity. Because this required specialized production facilities, Fresenius established Pharmaplan, a company specializing in the setting up of plants for manufacturing infusion solutions.

Fresenius Pharma's first foreign ventures – for example, the acquisition of Hiplex S.A. in Brazil in 1977 – were in the field of infusion solution production. In the 1980s, Fresenius worked steadily on extending this field of expertise. The company soon covered the entire range of infusions and both enteral and parenteral nutrition, also producing infusion and nutrition pumps as well as the disposable products required for this type of treatment.

Fresenius Kabi

A further step in the expansion of Fresenius' international market position was the acquisition of the international infusions business of the American-Swedish company Pharmacia & Upjohn. Merging its operative area with Fresenius Pharma resulted in the creation of Fresenius Kabi in 1999. This new company offered a broad range of products for parenteral and enteral nutrition therapy and infusion solutions in various countries. In Germany, the area of ambulatory care for the treatment of patients in their homes was further developed.

Following numerous additional acquisitions worldwide, Fresenius Kabi strengthened its intravenously administered generic drugs product portfolio in 2008, when it acquired the U.S. company APP (American Pharmaceutical Partners). This took Fresenius Kabi into the North American pharmaceuticals market and made it one of the world's leading suppliers of I.V. generic drugs.

Thanks to the acquisition of the Indian company Dabur Pharma, which also took place in 2008, Fresenius Kabi further expanded its generic pharmaceuticals and cancer treatment drugs business.

Today, Fresenius Kabi covers a wide range of treatments and therapies for chronically and critically ill patients with a portfolio that includes I.V. pharmaceuticals, infusion therapy and clinical nutrition products as well as the medical devices needed to administer them, and products for making the blood products used by blood banks and blood donation units. Fresenius Kabi thus makes important contributions to the medical care of chronically and critically ill patients in emergency medicine, during surgery, in intensive care and other hospital wards, and in outpatient treatment.

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FRESENIUS KABI 1963 – 1970

Pictures to the left: [01] Through the 1960s and 1970s, Fresenius continually extended its portfolio of infusion solution products, as it did with Jonosteril, an electrolyte solution used as a primary replacement fluid in patients suffering from vomiting, poisoning, dehydration and other disorders affecting the water and electrolyte balance. It is also used for rehydrating infants and children. [02] Jonosteril is part of the first aid kit aboard Lufthansa commercial aircraft. [03] Hepasteril is used in the treatment of liver diseases. Along with the amino acid solutions, Hepasteril – at the time the first liver solution on the market – was among the new infusion solutions that had a major impact on the company's development in the early 1960s.

Pictures to the right: [04] Amino acid-carbohydrate-electrolyte solutions (or AKE, the German acronym) are used for the hypocaloric parenteral nutrition of patients in satisfactory to good dietary condition. Fresenius set a new standard in parenteral nutrition with AKE. [05] With the introduction of the AKV powder mix (AKV being the acronym for the German terms for amino acids, carbohydrates and vitamin mix) corresponding to the potato-egg pattern, Fresenius laid the basis for the field of clinical nutrition. [06] Patient information leaflet for AKV. [07] Longasteril is used to stabilize circulation when patients are in a state of shock or collapse, but also for blood replacement. [08] A preparation that made Fresenius known worldwide was Oralpädon. It is given to patients who have lost water and minerals as a result of diarrhea. [09] As a symptom or consequence of certain diseases and surgeries, patients' salivation can be interrupted, in which case the Fresenius product Glandosane can help. It is primarily used as artificial saliva in intensive care.

1963

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FRESENIUS KABI 1963 – 1970

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AKV AMINOSÄUREN KOHLENHYDRATE VITAMIN - GEMISCH

mit essentiellen Fettsäuren im DUPLEX-Beutel

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1970

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FRESENIUS KABI 1971 – 1974

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1974

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Pictures to the left: [10, 11] A new production facility was opened in St. Wendel, Germany, in 1974. Initially, it was exclusively used for the production of infusion solutions on an industrial scale, and had 100 employees. Pictured here are Hans and Else Kröner visiting the plant and at the press conference held on the occasion of its opening. [12] Infusion bottles being visually inspected for particles in the fluid and for damages. [13] Bottles filled with infusion solution being transported into an autoclave, where they will be sterilized. [14] A bottle wash system in the St. Wendel plant. [15] Visual inspection for particles and damages. [16] Plant for the production of infusion solutions. [17] Infusion solutions being sterilized by means of hot air in an autoclave.

Pictures to the right: [18] During the visual inspection of infusion bottles for particles and damages. [19] View into the St. Wendel production plant. The bottles are filled under “cleanroom” conditions.

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FRESENIUS KABI 1974 - 1975

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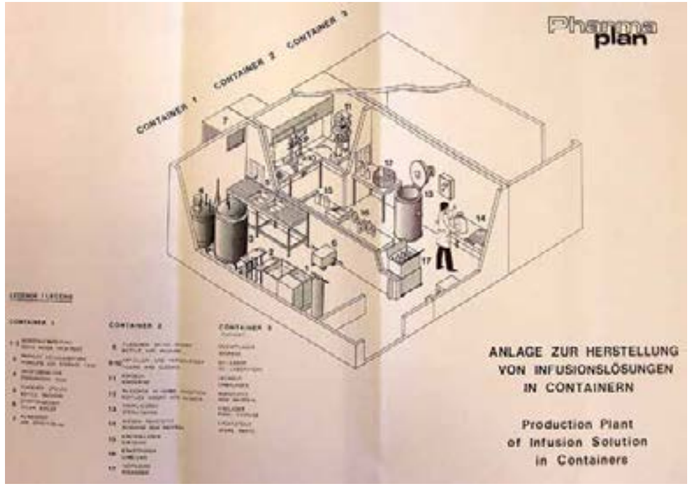
1975



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Pictures to the left: [20] In 1974, the year in which production started in the St. Wendel plant, Fresenius founded the Pharmaplan company. The new subsidiary sets up production facilities for infusion solutions. Establishing Pharmaplan was the idea of Hans Kröner, who had worked for the ceramics supplier AGROB, which had withdrawn step by step from ceramics production in order to specialize in setting up ceramics production facilities. Shown here is the plan for an infusion solutions plant. [21] Pharmaplan's first contracts came from Portugal, Greece and Kenya. In Kenya, facilities for the production of infusion solutions in glass bottles were set up inside newly built factory buildings. [22, 23] In addition to the infusion solution production facilities, the plant in Kenya also houses laboratories for chemical and biological/microbiological controls.

Pictures to the right: [24, 25] A look into the Fresenius warehouse in Bad Homburg, Germany. The performance of a pharmaceuticals business is also measured by whether sufficient amounts of all its products are available at any given time and how quickly they can be delivered. With the establishment of a new warehouse in Bad Homburg in the mid-1970s, Fresenius created the basis for delivery capacity and fast order processing. [26] A polarography being conducted in the laboratory. Polarography is an electrochemical method for the qualitative and quantitative analysis of chemical elements and compounds, especially of ions and molecules in a solution. [27] The autoclave station at the Gluckensteinweg site in Bad Homburg, Germany. Autoclaves are sealable pressure vessels that are used for the thermic treatment of substances at overpressure levels for sterilization, among other purposes. [28] Solution production stations I and II in Bad Homburg in the 1970s.

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1977

FRESENIUS KABI 1975 - 1980

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Pictures to the left: [29] Welding machine for making plastic bottles for infusion solutions. [30] In 1977, Fresenius took over the Brazilian pharmaceuticals manufacturer *Hiplex S.A. Laboratório de Hipodermia*, maker of infusion solutions for the South American market. [31] View into the production facilities of Hiplex in Brazil.

Pictures to the right: [32] HAES-steril infusion solution as a remedy for low blood volume. Thanks to its products Plasmasteril and HAES-steril, Fresenius quickly became the leading supplier in the field of blood volume replacement. [33] FREKA-CID contains PVP-iodine as an active ingredient and has proven its worth in skin and wound disinfection. The biting pain that usually occurs due to treatment with iodine is prevented here through an innovative combination of ingredients. The ointment version is primarily used by surgeons and dermatologists and is also part of Fresenius' aid supplies to the developing world. [34] In 1978, the production of ATG-Fresenius – an immunosuppressive agent which is still in use today – began. It is now part of the portfolio of Fresenius Biotech, a business segment founded in 2003.

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FRESENIUS KABI 1975 - 1980

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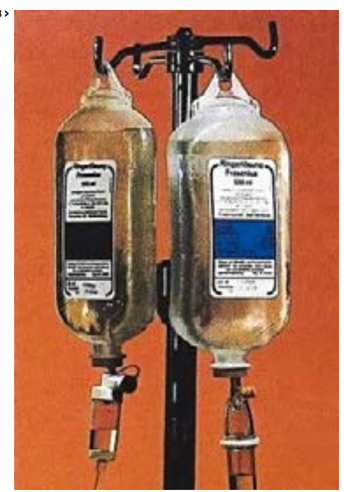

Pictures to the left: [35] Technological innovations were also part of Fresenius' product range in the fields of infusions and nutrition. One example of this was the FRENTA pump, a compact and user-friendly device for enteral nutrition. Seen here: the FRENTA-Duo-Set. [36] The Injectomat syringe pump from 1979 made it possible to dispense pharmaceuticals very precisely: Even the smallest amounts of highly effective drugs can thus be injected without risk. In 1984, its successor, the Injectomat S, the first mass-produced infusion syringe pump developed by Fresenius, was launched. [37] An Ionometer developed by Fresenius. This is an ion-selective measuring instrument, introduced in 1985, which enables the electrolyte levels of a patient's whole blood or serum to be determined at bedside. [38] In 1985, Fresenius launched the infusion solution bag MEDIPUR, which was free from plasticizers.

Pictures to the right: [39] Fresenius at MEDICA in Düsseldorf, Germany. Established in 1968, MEDICA, a medical trade fair with an accompanying conference, takes place in mid-November every year. Medical, laboratory and physiotherapy/orthopedic technology, diagnostic instruments, as well as commodities and disposable products for doctors' offices and hospitals are the main product areas exhibited at MEDICA. [40] In 1983, Fresenius developed the fat emulsion Lipovenös, making the company one of the very few manufacturers with a fat emulsion in its product portfolio in the 1980s. [41] Hans and Else Kröner saw themselves as entrepreneurs with a responsibility to help, and Fresenius made emergency aid donations, for example to the Bush Hospital in Mbata Mbenge, Congo in 1986, and two years later to Niger. [42] In 1988, Fresenius also sent pharmaceuticals and food donations to Gambia. [43, 44, 45] Infusion solution production at Medipak LTD in Lahore, Pakistan, where infusion solutions have been made with Fresenius know-how since 1986. The plant was designed, set up and initially started by Pharmaplan. As the first major manufacturer of infusion solutions there, Medipak soon became the market leader in Pakistan.

FRESENIUS KABI 1981 – 1986

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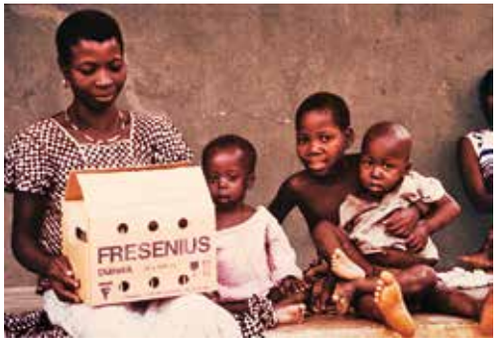
1986



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FRESENIUS KABI 1987 - 1998

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1990

Pictures to the left: [46, 47] Impressions from Fresenius' pharmaceutical production around 1990. [48] A selection of Fresenius' nutrition and infusion products in the 1990s. Among the products are various solutions, nutritional drinks and tube feeding formulas, glass and plastic bottles, and plastic bags and ampules for storing and administering liquids. [49] Fresenius was able to present a system for parenteral nutrition with Aminomix in 1988: amino acids, carbohydrates and electrolytes in dual-chamber, multilayer plastic bags. [50] Fresubin liquid was the first ready-made drinking and tube feeding formula – liquid nutrition that contained all the important nutritive substances, had a long storage life, and was easily administered. Fresubin liquid was expanded to a complete product line, the development of which helped make Fresenius one of the most important suppliers of enteral nutrition products during the 1990s.

Pictures to the right: [51] After 18 months of construction, the topping-out ceremony for what was then Europe's most modern infusion solutions production plant was held in Friedberg, Germany, in December 1996. [52] The production of infusion solutions in Friedberg started in 1997. [53, 54, 55] The expansion of Fresenius' pharmaceuticals division was boosted by the purchase of Kabi, the international infusions business of the American-Swedish company Pharmacia & Upjohn, in 1998. The Swedish pharmaceuticals company Kabi originated from the Swedish subsidiary, established in 1931, of a Danish brewery. In 1934, the brewing company *Stockholms Bryggerier* purchased this subsidiary, which went by the name *Kärnbolaget*. Kärnbolaget, in English the Core Company, made binders for sand cores used in foundries and enzyme-based products for bakeries. Later, the company was renamed *Kärnbolaget Aktiebolaget Biokemisk Industri* and became *Aktiebolaget Kabi* in 1951. The acquisition of Kabi meant further internationalization for Fresenius. The photographs are from Fresenius Kabi production facilities in different countries.

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Pictures to the left: [56] The Kabiven triple-chamber bag, which has won awards for its innovative packaging technology. It is made for parenteral nutrition therapy purposes. [57] StructoKabiven contains medium-chain and long-chain fatty acids, glucose and amino acids. This preparation is used to supply critically ill patients with nutritive substances. [58] The Stemcare collection set by Fresenius Kabi is used for isolating stem cells from umbilical cord blood. [59] Composol PS, a replacement solution for making and storing platelet concentrates by Fresenius Kabi. [60] The tube feeding formula Fresubin is available in EasyBags (flexible plastic bags) of 500 ml, 1000 ml and partly in bags of 1500 ml; occasionally, it is distributed in 500 ml glass bottles.

Pictures to the right: [61, 62] Views of infusion solutions production in the recent past. [63, 64] In September 2011, Fresenius Kabi opened a new production site for infusion solutions and liquid pharmaceuticals in Quy Nhon, Vietnam. Pictured during the opening ceremony: Le Huu Loc, President of the People's Committee of Bình Dinh province; Dr. Ulf M. Schneider, CEO of Fresenius, and Cornelia Pieper, Minister of State at the German Foreign Office. In the Asian region, Fresenius Kabi also maintains two production facilities in the important Chinese market. Fresenius Kabi has 2,000 employees at these two sites alone. Other important international company sites are in Port Elizabeth, South Africa, with 520 employees, and in Uppsala, Sweden, with 900.

FRESENIUS KABI 1999 – 2012

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Fresenius Medical Care

PROSPECTS OF LIFE FOR KIDNEY PATIENTS

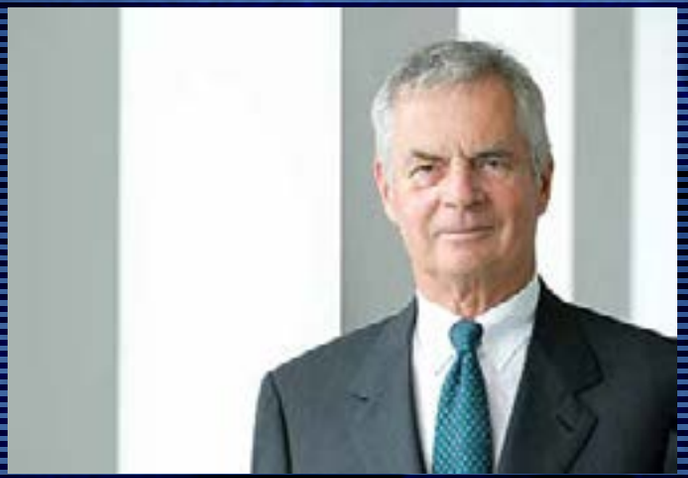
“Almost like a human kidney: Our dialysis machine and our dialyzer have made Fresenius what it is today.” **Dr. Gerd Krick**

It all depends on the filter. Without a blood filter, known as a dialyzer, there is no dialysis. The idea is simple: The patient's blood runs over a membrane with pores that are permeable to toxins and excess water in the blood. The blood filter is the central component in a dialysis machine, which in turn has two functions: It pumps the blood out of the body and through the filter via tubes, and it makes a cleansing solution run through the dialyzer in the opposite direction of the blood flow. This solution carries away the toxins that are filtered out of the blood through the membrane.

Fresenius' formula for success:

$$(C_{27}H_{22}O_4S)_n$$

or Polysulfone



Dr. Gerd Krick, who has been with Fresenius since 1975, advocated the use of polysulfone for making membranes for standard dialysis treatment. In 1992, he became Chairman of Fresenius AG's Management Board. It was under his aegis that Fresenius acquired the American company National Medical Care, which operated numerous dialysis centers. It was then merged with Fresenius' international dialysis business: the beginning of Fresenius Medical Care.

Metabolic toxins and excess water are filtered from the blood through pores in the capillaries and then removed with the help of the dialysis solution that also runs through the dialyzer. Fresenius engineers have further developed the synthetic material polysulfone, and today, all capillaries produced by Fresenius Medical Care for use in dialysis are made of Polysulfone Fresenius. The fine tubes through which a kidney patient's blood is pumped are bunched together in a plastic cylinder 25 centimeters (10 inches) in length, the dialyzer.

The capillary dialyzer is now the standard in dialysis. As many as 10,000 hollow fibers, each about 20 to 25 centimeters in length, are situated in parallel inside a cylinder, and the blood that is to be cleansed is pumped through them. The dialysis solution runs past the capillaries, whose walls are designed as membranes, in the opposite direction.

Dialyzer production at Fresenius Medical Care: Fresenius continues to make significant contributions to the development of capillary dialyzers. The business segment Fresenius Medical Care currently produces some 93 million dialyzers annually worldwide.

Prospects of Life for Kidney Patients

A half-century ago, when a person was diagnosed with a serious renal disease it usually meant death was imminent. Today, however, many patients can be saved and are able to live with their disease. Dialysis engineers at Fresenius Medical Care have played a major role in making this possible.

The Principle of Dialysis

They have diabetes, suffer from high blood pressure or the effects of nephritis; excessive use of pharmaceuticals or congenital diseases can also damage the kidneys. Kidney disorders constitute a permanent danger to affected patients because the function performed by the kidneys is essential to life: The kidneys remove the waste products of the body's metabolism from the blood, and if they fail to do so the person in question is poisoned. That is why, in cases of acute renal failure or chronic renal diseases, the kidneys' functions must be replaced, the only two possible treatments being transplantation or an artificial replacement for the kidneys. But while the idea behind a dialysis filter is simple, its technical realization is not. The patient's blood is pumped over a membrane, whose pores are permeable to toxins and excess water. On the other side of the membrane flows a solution that, through a physical reaction, removes the harmful substances from the blood and carries them away. This form of blood cleansing, known as hemodialysis, takes place in a blood filter outside the body. There is also a process in which the blood is cleansed inside the patient's body. With this method, sterile dialysis fluid is introduced into the abdominal cavity and the peritoneum serves as dialysis membrane, a fact from which the name for this type of blood cleansing – peritoneal dialysis – is derived.

Fresenius and Dialysis

In the 1960s, the Fresenius Company, based in Bad Homburg, Germany, and still a medium-sized business, first came into contact with blood filters as a producer of dialysis solutions. At the time, dialysis was highly complex and expensive, so that very few patients were able to receive this treatment. When the company's management learned from the newspapers about the desperate situation of most kidney patients in Germany, they decided action was needed, and in the mid-1960s Fresenius started to import and distribute dialysis machines from the United States. Through the maintenance of these machines and their constant, ongoing exchange of ideas with the medical staff who operated them, Fresenius employees developed increasing technical know-how about dialysis technology. When the manufacturers decided to take over distribution themselves, and withdrew from their contracts, Fresenius was prepared. A medical technology task force was set up and was involved in establishing more than 100 dialysis treatment units in medical facilities across Germany, and then, in the 1970s, Fresenius started developing its own dialysis machine. In a plant in Schweinfurt, Germany, that was opened for precisely this purpose, the serial production of the first Fresenius dialysis machine, the A 2008, started in 1979.

A First Milestone – Shorter Dialysis Times

A revolutionary innovation was necessary for Fresenius to become competitive in the market, and it came in the form of the so-called volumetrically-controlled ultrafiltration process. An innovation: Whereas the velocity of the blood flow through the filter had so far been the same as the body's normal blood flow, it could now be increased in a controlled manner. Consequently, to the great good of patients, dialysis times were cut to less than half of the 14 hours needed previously.

The Second Milestone: Polysulfone

Inspired by this success, Fresenius technicians sought further potential improvements in dialysis technology. Dr. Gerd Krick, then head of the research and development department, assigned his staff to optimize the quality of the blood filters. While looking for a better material than Cuprophan, made of cellulose, Gerd Krick came across polysulfone and reasoned that, thanks to its porous structure and the specific chemical properties of polysulfone membranes, capillaries made of this synthetic material might be particularly suitable for cleaning blood by means of dialysis. He then found a like-minded colleague in the person of Klaus Heilmann. An engineer, Klaus Heilmann literally worked

day and night trying to find the best formula for polysulfone and to develop nozzles that could be used to make fibers of this substance. In 1982, Klaus Heilmann was able to present a suitable fiber, his efforts paying off when first trials with the new material proved the filtering quality had dramatically improved. Dialyzers made with polysulfone are almost as effective as human kidneys, and blood filters containing polysulfone fibers are the standard in dialysis today.

The Third Milestone: Helixone

And the evolution continued. The research department soon started working on the development of another material for blood filters, and Fresenius introduced helixone, also made of the synthetic polysulfone, in 2000. Membranes made of this material are produced by spinning, using a special type of nanotechnology that makes it possible to make alterations in the structure and distribution of pores in the material's surface very accurately. This allows the production of blood filter membranes for special dialysis requirements and further improvements in filtering capacity.

"Herring Eats Shark"

The improvements in dialysis technology made by employees helped Fresenius gain a strong market position in Germany, but management was again thinking one step ahead and wanted to strengthen the company's market position internationally. The opportunity arose in the 1990s, when National Medical Care (NMC) came up for sale. This American company was especially interesting for Fresenius because it not only manufactured dialysis products, but operated more than 500 dialysis centers in the United States, where some 40,000 patients were receiving treatment. This acquisition was audacious: NMC was three times as big as Fresenius. "Herring eats shark," was one press comment. And yet the coup was successful and, in 1996, NMC was merged with Fresenius' international dialysis business to form the new company, Fresenius Medical Care. The strategically important entry into the dialysis services market worked out well, as Fresenius Medical Care's stock was listed in Frankfurt and New York the year the company was founded. The stock has been a component of Germany's benchmark DAX stock index since 1999. That year, Dr. Ben Lipps became Chairman of the Management Board of Fresenius Medical Care. He had been with Fresenius USA Inc. since 1985 and had been involved in the acquisition of NMC. Ben Lipps had made his mark in the development of the first capillary dialyzers.

The following years were also to be marked by growth and success. By 2003 production had risen to 50 million dialyzers per year, in 2005 the company won *Innovationspreis der Deutschen Wirtschaft* prize for its innovative development of the 5008 dialysis system, and then in 2006 a crucial step toward strengthening Fresenius Medical Care's market-leading position was taken with the purchase of its U.S. rival, Renal Care Group. Fresenius Medical Care is now the international market leader in dialysis treatment and dialysis products. The company treats 256,000 patients in more than 3,100 dialysis facilities of its own in North America, Europe, Asia, Latin America and Africa, with more than 34 million vital dialysis treatments being carried out every year. In 2011, its 79,000 employees worldwide generated a turnover of more than $12.8 billion.

A Focus on Patients: Research Continues

Thanks to their daily communication and work with patients in the company's dialysis centers, Fresenius Medical Care's employees know what a burden dialysis is for many kidney patients. That is why the company continues developing new ideas for making this life-saving therapy as bearable as possible and further improving patients' quality of life. To name just one example, a special physical training regimen was developed that patients can do to improve their fitness while connected to the dialysis machine. It's an example of how Fresenius Medical Care, in addition to the renal dialysis being performed, always keeps in mind patients' overall state of health and strives to improve it with "integrated care" programs. One future step would be to make the heavy dialysis equipment and everything needed to carry out dialysis small and light enough to be portable, so patients could move freely. This is still a distant goal, as 120 to 200 liters (32 to 53 gallons) of water are necessary for a dialysis, a load that patients cannot simply carry around, and yet there is hope: with the help of new cleansing technology, it may be possible to reduce the amount of water needed to six to ten liters. Portable "artificial kidneys" are, therefore, conceivable – and Fresenius Medical Care is on the right track toward turning this dream into reality.

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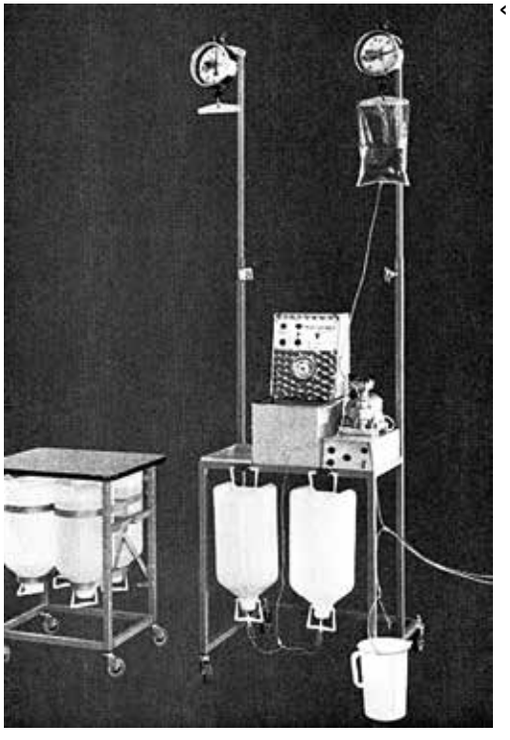
1966

FRESENIUS MEDICAL CARE
1966 – 1977



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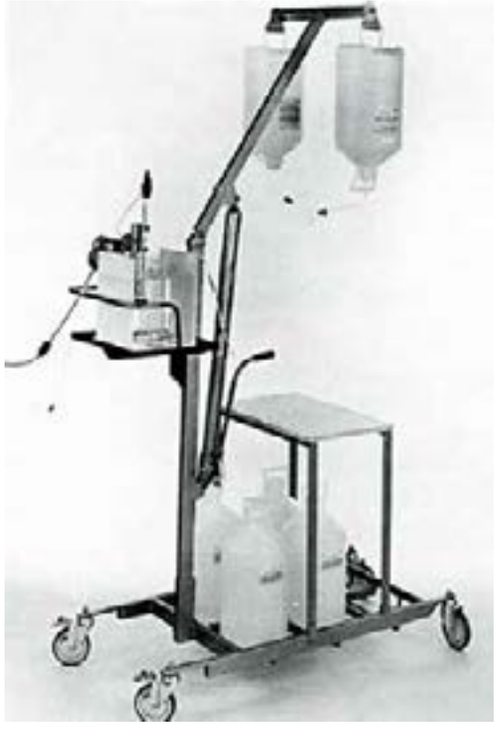

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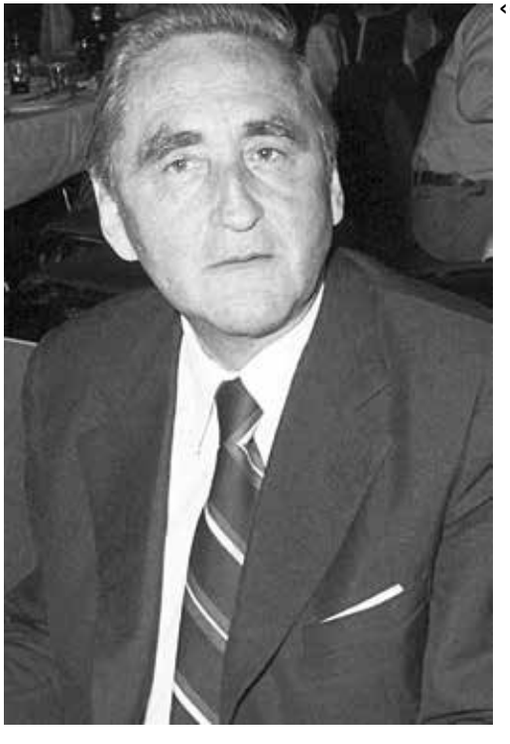

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P R E I S L I S T E

Best.Nr.	10.00	Peritonstativ f. 1 Dialyse	DM
"	10.01	Erweiterungssatz f. 2 Dialysen	DM
"	10.10	Vonstativ f. 1 Dialyse	DM
"	10.11	Erweiterungssatz f. 2 Dialysen	DM
"	11.00	Peritoknob I f. 1 Dialyse	DM 2.725,--
"	11.20	Erweiterungssatz f. 2 Dialysen	DM 1.350,--
"	12.00	Peritoknob II f. 1 Dialyse	DM 4.260,--
"	12.20	Erweiterungssatz f. 2 Dialysen	DM 2.560,--
"	19.01	Schlauchsystem f. Peritostativ	DM 8,50
"	19.02	Schlauchsystem f. Peritoknob	DM 17,50
"	19.03	Stylettkatheter	DM 9,50
"	19.04	Kinder-Katheter	DM 9,50
"	19.05	Dauer-Katheter	DM 274,--
"	19.07	Pleurachenliftungskanüle	DM entfällt
"	19.08	Ersatzspritzen 1 St	DM 1,--
"	19.09	Anschlußstück f. Dauer-Katheter	DM -,95
Best.Nr.	20.00	Plattendialysator "Fanomat" steril	DM 1.175,--
"	20.01	Durchlaufverwärmer	DM 1.900,--
"	20.02	Blutdrucküberwachungsgerät	DM 850,--
"	20.03	Abfüllgerät	DM 930,--
"	20.04	Blutpumpe	DM 1.445,--
"	20.05	Heparinpumpe	DM 1.105,--
"	20.06	Niere "Typ 2000" o. Tank	DM 5.745,--
"	20.07	Niere "Typ 2007" o. Tank	DM 4.945,--
"	20.10	Zirkulationsgerät (ZUP)	DM 950,--
Best.Nr.	21.00	Tankanlage kpl.	auf Anfrage
"	21.04	Polyäthylentank 420 l	DM 990,--
"	21.05	Polyäthylentank 560 l	DM 985,--
"	21.06	Polyäthylentank 1020 l	DM 1.470,--
"	21.10	Dialysattank 180 l Fabrikat	DM 1.150,--
"	21.20	Leitfähigkeitsmeß- und Überwachungseinrichtung	DM 2.500,--
"	21.30	Tankkontrollgerät, elektronisch	DM 1.200,--
"	21.45	Umwerdeizerzähler	DM 1.350,--
"	21.50	Rohrleitungssystem	auf Anfrage
"	21.51	Druckerhöhungspumpe	DM 780,--
"	21.52	Umwälz- und Zirkulationspumpe	DM 1.280,--
"	21.60	Reinwassertank 50 l	DM 530,--
"	22.00	Künstliche Niere "Stuttgart" o.Tank	DM 11.100,--
Best.Nr.	38.00	Halter-Set	DM 44,--
"	39.01	[illegible]-Spule	DM 95,--
"	39.02		
"	39.10	Schlauchsystem kpl. f. [illegible]	DM 16,--
"	39.11		
"	39.12	Schlauchsystem kpl. f. "Dawos"	DM 20,--
Best.Nr.	40.00	Stativ f. Blasenspülung m. Fahrgest.	DM 1.185,--
"	40.01	Stativ f. Blasenspülung o. Fahrgest.	DM 980,--

+ 11 % Mehrwertsteuer

Pictures to the left: [01] A newspaper article set things in motion: In the mid-1960s, Fresenius' Management Board learned from the press about the desperate situation of kidney patients, many of whom were dying because their kidneys could no longer clear their blood of metabolic waste products – they were being poisoned. Artificial blood cleansing was still not common in Germany, but Fresenius started importing American dialysis machines, and employees' technical knowledge grew through their maintenance work and contact with the medical professionals using the machines. By the end of the 1970s, they had developed the first devices of their own. [02] The Peritostativ was the first medical device developed by Fresenius. With its hydraulic lifter, it facilitates the handling of heavy infusion solutions containers. [03] The peritoneal dialysis machine Peritokomb I was one result of Fresenius' close collaboration with the Katharinenhospital in Stuttgart. [04] In 1966, Hans G. Rudolph joined Fresenius, and went on to lay the commercial foundations for the medical technology section. At the time, the company distributed dialysis solutions to university hospitals, and through its cooperation with clinical users perceived the demand for medical devices. A medical technology task force and the *Dr. E. Fresenius KG, Apparatebau KG* were established. [05] A price list from 1968 lists part of the portfolio of the early years.

Pictures to the right: [06] Fresenius began setting up its own department for the development and production of hemodialysis devices. While the company achieved a surprisingly high turnover in Germany up until 1975 with dialysis machines made by foreign manufacturers, the Leuven L III D was a Fresenius-made machine distributed exclusively in Eastern Europe. When the foreign manufacturers withdrew from their contracts, developing the company's own dialysis machines and dialyzers became the focus of the Fresenius Management Board's strategic planning. [07, 08] Once the decision to develop their own dialysis products had been taken, a first step led to the creation of a production segment for dialysis tubing systems. [09] In 1977, a first dialyzer with a cuprophan membrane was ready for use. In 1979, 200,000 such dialyzers were produced in Fresenius' plant in St. Wendel, Germany.

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FRESENIUS MEDICAL CARE
1966 - 1977

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FRESENIUS MEDICAL CARE 1978 – 1984

Pictures to the left: [10] In 1979, Fresenius opened a plant in Schweinfurt, in northern Bavaria, for the serial production of dialysis machines, and in 1980 the first 150 type A 2008 C devices were made. [11] The A 2008 C dialysis machine was very successful, and was awarded a gold medal for technological innovation at the Leipzig Trade Fair in 1979. Its volume-controlled ultrafiltration was particularly innovative. Hemodialysis patients' ability to excrete water is limited and in some cases completely lacking, causing them to accumulate water in between treatments that must be removed during hemodialysis. The question is: how much? Based on clinical results, doctors determine a "dry weight," and the difference between a patient's weight before dialysis and his or her "dry weight" is then removed in water though ultrafiltration during treatment. However, clinical results can result in false dry weight assessments that lead to side effects during dialysis such as cramps, vomiting and dangerous drops in blood pressure. For this reason, with the devices available until then, constant surveillance of patient and machine by medical staff were required, but with the A 2008 all that was needed was to set the machine to the required volume. [12] The A 2008 C dialysis machine at work. [13] The A 2008, version E, which was primarily intended for export.

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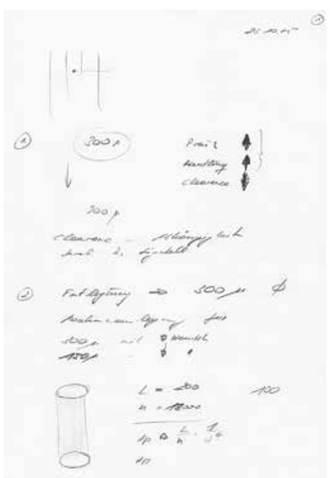

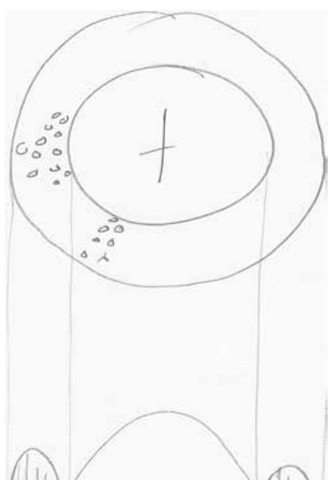

Pictures to the left: [14] [15] The first Fresenius dialysis machines used dialyzers with Cuprophan membranes. The novel material for a new, more efficient dialyzer was polysulfone, and it was mainly thanks to the mechanical engineer Dr. Gerd Krick, who joined Fresenius in 1975, that polysulfone became the new standard for dialysis at Fresenius. He furthered polysulfone research. Seen here: drafts for a new dialyzer.

Pictures to the right: [16] "I went to my limit. And sometimes even further. That is the only way that technical progress is possible," said Klaus Heilmann (pictured), one of the enthusiastic engineers who worked on the development of polysulfone fibers. In order to push ahead with the development of nozzles for making polysulfone fibers and avoid disrupting the processes required to do this, he sometimes slept only every other night. In 1981, Klaus Heilmann worked on the fibers' membrane structure, making about 600 spinning attempts with various formulas and nozzle settings. His efforts paid off, and in early 1982 he was able to present the first useful fiber. [17] Capillaries of the Hemoflow F60 in 2,000-times magnification. The spongy wall structure indicates an anisotropic membrane: It is only the innermost layer, directly in touch with the blood, that functions as the actual exchange barrier in the sense of a semipermeable membrane. The structure, which becomes steadily looser toward the outside, has a supporting function. [18] Cross-section of a capillary of the Hemoflow F60 in 300-times magnification. [19] A view of the membrane's inner surface, enlarged by a factor of 10,000. The even distribution of pores and the homogeneous pore size are requirements for good dialysis results. [20] In a view enlarged by the same factor for comparison, the looser structure of the outer membrane can be seen.

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FRESENIUS MEDICAL CARE 1978 – 1984

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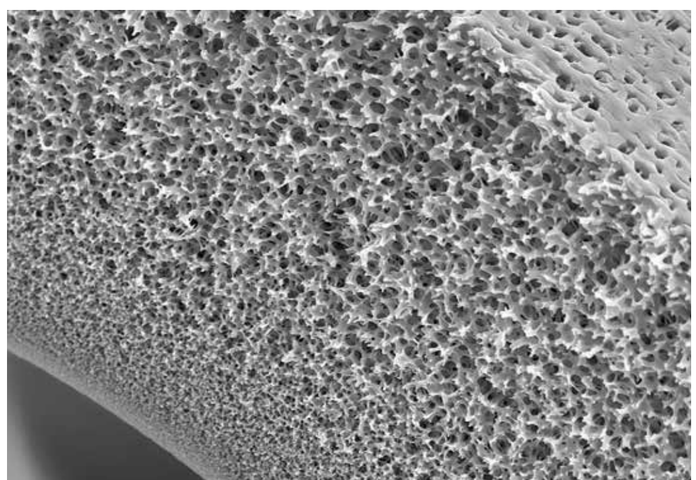

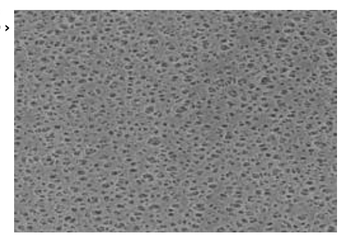

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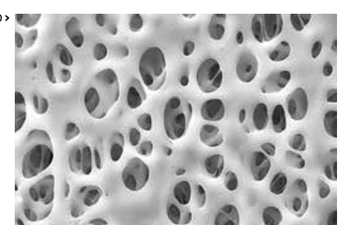

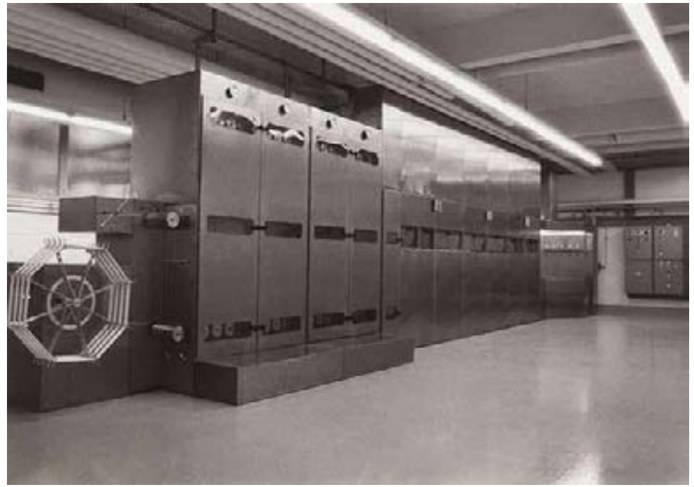

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FRESENIUS MEDICAL CARE 1985 - 1995

Pictures to the left: [21, 22, 23] Early spinning machines for the production of dialyzers in St. Wendel. [24] The mass production of polysulfone dialyzers in Fresenius' St. Wendel plant began in 1985. The factory has existed since 1974, and at first produced infusion solutions.

Pictures to the right: [25] Dialyzer production in the St. Wendel plant. [26] Blood tubings are still produced in St. Wendel. [27] Another image of dialyzer production. [28] Production of dialysis machines in Schweinfurt. [29] In the field of dialysis, Fresenius closely collaborated with doctors and clinics from the very start. Pictured here is Else Kröner together with the medical director of the Bad Homburg, Germany, hospital, Dr. Rossenbeck, and the district administrator, Dr. Jürgens, in front of the clinic's first A 2008 C. The hospitals in the Hochtaunuskreis district near Frankfurt first used Fresenius devices for hemodialysis in 1985/86. [30] As good as the A 2008 C dialysis machine was, customers were at first quite skeptical toward it: As an industry newcomer, Fresenius still had to earn a reputation, and for this reason among others the company established a new department for "Technical Training and Documentation" in Schweinfurt.

Pictures to the far right: [31] In May 1992, a plant for the production of dialyzers, tubes and cannulas started up in Barysaw, Belarus, ensuring a supply of dialysis material for areas of the Commonwealth of Independent States. [32, 33] The Barysaw plant was the largest project its Pharmaplan subsidiary organized on behalf of Fresenius. It marked the first time that Fresenius provided a foreign company with the technology for the production of polysulfone membranes.

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FRESENIUS MEDICAL CARE
1985 - 1995

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FRESENIUS MEDICAL CARE
1996 - 2001

Pictures to the left: [34, 35, 36] Fresenius acquired National Medical Care in 1996: The American company was especially attractive not just because of its dialyzer and dialysis machine production, but especially due to the numerous dialysis centers it was running. [37] Dr. Gerd Krick and Dr. Ben Lipps (left). Ben Lipps was actively involved in the acquisition of National Medical Care and the resulting establishment of Fresenius Medical Care. He was born in the Midwest of the United States in 1940 and did his PhD at the Massachusetts Institute of Technology. In 1966, Ben Lipps joined Dow Chemical Inc., where he was head of a research group that developed the first artificial hollow fiber membrane. In 1985, he joined Fresenius USA, Inc, and in 1999 he became Chairman of the Management Board of Fresenius Medical Care. [38] Dialysis machine production in the USA. [39] A dialysis center in the USA not long ago.

Pictures to the right: [40] The DALI system, the first method worldwide for removing LDL cholesterol from whole blood. Adsorbers, including the DALI 750, are the centerpieces of the DALI system. [41] The liver-support system Prometheus combines a typical dialysis procedure with an adsorber treatment.

Pictures to the far right: [42] Dialysis machine 2008K@home for home dialysis. [43] The sleep.safe dialysis machine is used for Automatic Peritoneal Dialysis (APD), which can be performed at home and overnight. [44] The tried and tested 4008S home hemodialysis machine with an integrated blood pressure monitor, and user-friendly programming and software, is customized for the requirements of home hemodialysis. [45] In January 2006, the 5008 dialysis therapy system won the *Innovationspreis der deutschen Wirtschaft* innovation prize after Fresenius Medical Care technicians succeeded in optimizing all aspects of dialysis treatment with the System 5008. It is easier to handle and needed significantly less energy and water than conventional devices, but best of all, it produced fewer side effects for patients than competitors' products.

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FRESENIUS MEDICAL CARE
1996 – 2001

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FRESENIUS MEDICAL CARE
2002 - 2009

Pictures to the left: [46] The production of dialysis machines worldwide. Fresenius Medical Care produces dialysis machines in Schweinfurt, as well as in Walnut Creek in the USA and Jaguariúna, Brazil. Seen here is the Brazilian plant. [47, 48] Today, every second dialysis machine used around the world comes from the plant in Schweinfurt.

Pictures to the right: [49] The Genius 90 hemodialysis therapy system is based on a thermally insulated glass tank system. The entire amount of dialysis solution is produced before the treatment and can be adapted to the patient's individual needs. [50] Completed dialysis machines at the Schweinfurt plant. [51] Employees assembling machines in Schweinfurt.

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FRESENIUS MEDICAL CARE
2002 - 2009

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FRESENIUS MEDICAL CARE 2009 – 2012

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Pictures to the left: [52, 53, 54] Production of dialyzers worldwide. Fresenius Medical Care manufactures dialyzers in St. Wendel; Ogden, USA; L'Arbresle, France, and Inukai, Japan. More than 40 percent of the dialyzers sold internationally every year are made in these plants, with additional production sites in Barysaw, Belarus, as well as Vrsac, Serbia, and Buzen, Japan. [55] The Ogden site.

Pictures to the right: [56] Ben Lipps. During his tenure, the company was able to significantly extend its market leading position in the field of dialysis. At the end of 2012, Ben Lipps retires from the Fresenius and Fresenius Medical Care Management Board. In recognition of his achievements for the company, Ben Lipps has been appointed honorary Chairman of the Supervisory Boards of Fresenius Medical Care AG & Co. KGaA and Fresenius Medical Care Management AG. [57] Dialyzer production plant in Inukai. [58, 59, 60] Fresenius Medical Care is the world market leader in dialysis therapy and dialysis products. The company operates in different regional segments – North America, Asia-Pacific, and Europe/Middle East/Africa/Latin America. In 2011, the company's more than 79,000 employees achieved a turnover exceeding $12.8 billion. Fresenius Medical Care offers products and services for hemodialysis, acute dialysis, peritoneal dialysis, liver support therapy and therapeutic apheresis. The company provides treatment to some 256,000 patients in its more than 3,100 dialysis clinics in North America, Europe, Asia, Latin America and Africa. This adds up to more than 34 million life-saving dialysis treatments every year.

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FRESENIUS MEDICAL CARE 2009 - 2012

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Fresenius Vamed

PLANNING, CONSTRUCTION AND MANAGEMENT OF HEALTH CARE FACILITIES

“It is extremely fulfilling to construct and run a health care facility. The focus of our work is human health.”

A VAMED employee

Fresenius has been active in the development, planning, construction and management of health care facilities since 1994. That year, the Bad Homburg-based health care group took over hospitalia international GmbH, which had been equipping clinics for 30 years. Two years later, Fresenius gained the majority of the shares in Austria's VAMED AG. Since then, VAMED's activities have formed the core of Fresenius' involvement in the planning, construction and management of health care facilities. VAMED's importance became clear during the reorganization of Fresenius' Group structure in 2008: The business segment responsible for the aforementioned activities is named "Fresenius Vamed."

FRESENIUS VAMED

The welfare of the patient is always the main concern. Fresenius Vamed's goal is to plan and erect health facilities in accordance with the latest medical requirements. A fundamental aspect of this is the close contact to doctors and nursing staff that VAMED has been providing with great commitment since its establishment in 1982. The activities of Fresenius Vamed can be best described in the form of a matrix: The company supplies everything from one source, from project planning through to operating the facility. The Fresenius Vamed project teams begin with the project development, planning and construction of a health care facility before they start working on plans for the technical and medical operations. Often, the company then takes on the overall management of the completed facility. The company's portfolio covers all fields of medical care — prevention, acute care and rehabilitation.

Benefiting the Patients – Optimal Medical Infrastructures

Hospitals are complex entities. In order to be able to guarantee an optimal level of care for patients, processes must be accurately synchronized. This can only be achieved if the hospitals are planned with great medical and architectural expertise. Fresenius Vamed provides the corresponding specialized knowledge worldwide, with great success.

Bundled Competence

"Fresenius Vamed" is a name that stands for competence in hospital planning, construction, equipping and management, public-private partnerships in the health care sector, and the planning, construction and operation of health tourism facilities. The comprehensive know-how has been built up since 1982 when the VAMED company was founded in Austria. Fresenius started supplying hospitals with technical equipment and also providing assembly and maintenance services in 1994, and in 1996 Fresenius acquired the majority interest in VAMED.

Expanding the Portfolio

During the 1990s at Fresenius, all signals were go for expansion. The company had already accomplished a great deal in the medical-technical area, with medical-technical products – especially for dialysis and nutritional medicine – as well as the large-scale production of infusion and special solutions. All this would have been unthinkable without machines and devices developed specifically for these purposes, so in 1974 Fresenius had founded the company Pharmaplan. Here, the experience gained from the production processes during the production of infusion solutions was gathered and used as input in the planning and construction of infusion production plants.

During the 1990s, the interest of the Management Board of Fresenius AG was directed toward another area that was both technical and medical in nature: The construction and equipping of hospitals. Since the company did not have any experience in this field, the board decided to acquire the necessary expertise and, in 1994, Fresenius took over hospitalia international GmbH, which at that point had already been active in the field of hospital equipment for 30 years. Moreover, hospitalia had successfully completed more than 500 hospital projects in more than 40 countries.

Two years later the Austrian company VAMED was added. It was considerably younger than hospitalia but was also a global player in hospital construction. Acquiring the majority of VAMED's shares benefited both parties: Fresenius was able to expand its expertise in the planning and construction of hospitals, and VAMED stayed intact in its entirety. Despite its successful track record, VAMED was up for sale in 1996 due to a political decision by the Austrian government to sell a number of state-owned enterprises. Many prospective buyers immediately signaled an interest in taking over parts of VAMED, with Fresenius standing out from this group because its Management Board guaranteed it would preserve the entire company in its existing form. Fresenius was awarded the contract, and the majority of VAMED was transferred to Fresenius, with more than 20 percent staying in Austrian hands.

VAMED: From Austria into the World

VAMED had been created in 1982 in connection with the construction of Vienna General Hospital (AKH, for *Allgemeines Krankenhaus*). A new project organization was needed to continue the construction of this huge clinical center, and then-Austrian Chancellor Bruno Kreisky turned to the Voest-Alpine company, knowing the project would be in good hands. The steel group in turn founded VAMED – short for *Voest-Alpine Medizintechnik*. In order to successfully conclude the Vienna AKH project, VAMED carried out hundreds of interviews with doctors and nursing staff. The knowledge and experience gained from this formed an essential basis for the success of VAMED and the Vienna AKH project, which was completed in 1994.

The Vienna AKH is among the largest hospitals in the world. Its equipment is optimally adjusted to the diverse requirements of a central, maximum care clinic in a large metropolitan area, and all the medical technology is state of the art.

At the time of the Vienna AKH project, VAMED was already active internationally. For example, in different regions of Iraq during the mid-1980s the company had realized six mother/child clinics, a children's hospital, and a rehabilitation center. After initial smaller-scale projects in Asia, VAMED built a cardiology center in Malaysia's capital Kuala Lumpur, completing it in 1992.

Management

In addition to the project development, planning and construction of health care facilities, which were integrated at VAMED as "project business," a new field of activity was soon added: hospital management. Here, in 1985, the Vienna AKH once again formed the starting point. This new "services business" by VAMED covered all fields of technical, financial and infrastructure management, and offered an all-inclusive service which also handled waste and energy management as well as security. Often, a project business activity becomes a service business project, as was the case, for example, for several years with the emergency hospital in Linz.

Fresenius Vamed: Not Only Hospitals

When Fresenius took over the majority of VAMED in 1996, the company acquired a team of qualified experts whose expertise was not confined to hospital planning, construction and management. VAMED was already active in another growing field, that of health and "wellness" tourism. At first, VAMED took over the general management of spa facilities, with the construction of health tourism facilities following. The first thermal spring facility planned and built by VAMED was completed in 1998 in Geinberg, Austria.

More thermal springs, health and wellness centers arose in the following years, for example in Vienna and Kaprun, Austria.

VAMED is the market leader in Austria with eight thermal spas and health resorts, 2.4 million guests per year, and a 29 percent market share. VAMED is also the largest private provider of rehabilitation services in Austria, with a 15 percent market share.

With its comprehensive services for health care facilities, the company operates in all fields of health care, from prevention to acute care and rehabilitation.

Public-Private Partnerships

In 1998, when the company received the project contract for the regional hospital in the Upper Austrian area of Vöcklabruck, VAMED realized its first public-private partnership (PPP) project. Under its patronage, a project company consisting of public and private partners was formed to plan, build, finance and operate the hospital. The idea behind PPPs is that cost-intensive projects such as hospitals and other health care facilities, which would normally be financed entirely from the public purse, can be built and maintained by mobilizing private capital and expertise. In part due to spending restraints in health care, PPP projects have become increasingly popular. VAMED, renamed "Fresenius Vamed" since the company's restructuring in 2008, is considered a pioneer in PPP models in the health care sector, and remains one of the leading global providers in the field. To date, Fresenius Vamed has realized 17 PPP projects, one of them in Berlin's renowned Charité hospital center. Here, the company manages a consortium of private partners that were bundled into Charité Facility Management GmbH in 2006.

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FRESENIUS VAMED 1982 – 1994

Pictures to the left: [01] In 1982, the steel group Voest-Alpine received the order to continue construction of Vienna General Hospital (Vienna AKH). The group then founded *Voest-Alpine Medizintechnik GmbH*, or VAMED for short. [02, 03, 04] Shortly after its founding, VAMED began offering customers outside Austria its know-how in hospital construction, medical technology and health care services. VAMED carried out its first international project in the Middle East. On behalf of the Iraqi Ministry of Health, VAMED erected six mother/child clinics, a children's clinic and a rehabilitation center in different regions of the country between 1984 and 1986. [05] At the end of 1985, VAMED received the order for the technical management of Vienna AKH. This was the beginning of the services business provided by VAMED, which was to become the company's second core business next to the planning and erection of clinics.

1982

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Pictures to the left: [06] The establishment of a cardiology clinic in the Malaysian capital of Kuala Lumpur in 1992 was a key project for further large projects realized by VAMED in Southeast Asia. [07, 08, 09] Vienna AKH opened in 1994. Some 2,230 Austrian and 170 foreign companies were involved in realizing the project at that time. Everything merged at VAMED, which was responsible for the project management, personnel training and technical management.

Pictures to the right: [10, 11, 12, 13] The Vienna AKH neurosurgery was finished in 1984, followed by the food preparation facilities in 1986, the medical-technical schools in 1987, and the fire department building in 1988. After the opening of the reception and administration wing in 1989 the treatment of patients began in 1991. The Gamma-Knife, a state-of-the-art radiotherapy device, was ready for use in 1992. The photographs give a look into the working world of Vienna AKH. [14] Fresenius entered the hospital equipment and management business in 1994 with the takeover of hospitalia international GmbH, which was primarily involved in the construction and equipping of hospitals: Between its establishment in 1964 and 1994 the company completed more than 500 hospital projects in more than 40 countries. Seen in this picture: The Henry Dunant Hospital in the north of Athens, which was supplied with medical technology by Fresenius in 1998. A service and maintenance contract also followed. [15] Vienna AKH's 507-seat lecture hall (photo from 1994).

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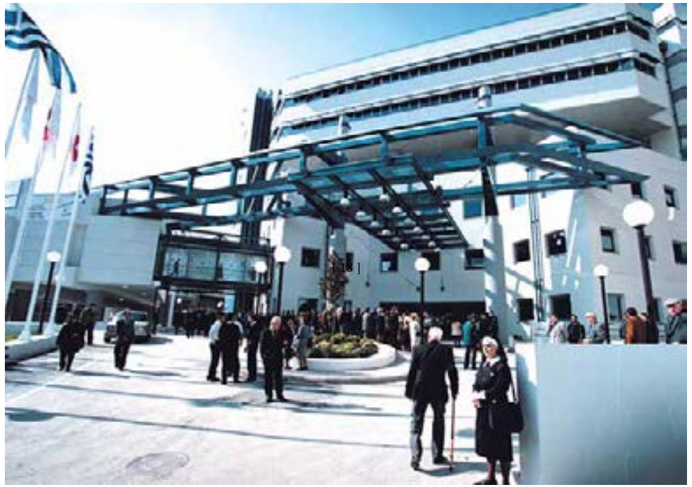

FRESENIUS VAMED 1982 – 1994

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FRESENIUS VAMED 1996 - 2007

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1996

Pictures to the left: [16, 17] VAMED began complete management of wellness and spa facilities in 1989. In 1995, with its project in Geinberg, Austria, the company also became a provider of planning and construction for entire thermal spas. Thus, VAMED is now also active in the field of preventive health care. The *Geinberg Therme* spa resort was completed in 1998, and VAMED also took over the management here. [18] Fresenius expanded the new branch of hospital equipment in 1996. VAMED was for sale because the Austrian government decided to privatize some of its state-owned industry. There were many prospective buyers, all of whom wanted to split VAMED up. Dr. Gerd Krick, who had been Chairman of the Management Board of Fresenius AG since 1992, recognized VAMED's potential and guaranteed to keep the company in its then current form, and Fresenius won the contract. Shown is one of the first projects for VAMED as part of Fresenius, the new Vöcklabruck Regional Hospital in Austria. [19] VAMED started construction of the Vöcklabruck Regional Hospital in 1998. It was the first public-private partnership project for the company. Fresenius VAMED is regarded as a pioneer for PPP models. Because VAMED covers the full range of services – from project development to complete management – and integrates management requirements into the planning and conception process, there are significant efficiency gains from a partnership with VAMED. That is one reason for VAMED's success in PPP projects.

Pictures to the right: [20, 21, 22, 23, 24] The newly constructed *Unfallkrankenhaus*, an emergency hospital in Linz (Linz UKH). This hospital was realized on a PPP model: All services – from project development to construction, financing, leasing and technical management – are carried out by a consortium under VAMED's leadership. The new building was formally opened in 2005. The hospital possesses a new intensive care and anesthesia documentation system; VAMED operates the system for the intensive care and burn units, intermediate care, and for the entire anesthesia department including two trauma care rooms.

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Pictures to the right: [25, 26] On behalf of the Berlin Charité, Fresenius Vamed has been in charge of the medical and operating technology of this health care facility with a long-standing tradition since 2005. To fulfill this task, the company manages a consortium of private partners which was comprised into the Charité Facility Management GmbH (CFM) in 2006. [27, 28] The *Gesundheitszentrum Bad Sauerbrunn* health center. Fresenius Vamed was responsible for the planning and realization of the reconstruction of this clinic. In 2007, Fresenius Vamed also took on its management. The sanatorium offers medical wellness, rehabilitation and therapy, primarily for oncology patients and patients suffering from metabolic diseases. [29] In 2002, Fresenius Vamed constructed a cardiology center in the Russian city of Krasnodar. [30, 31] In the second quarter of 2007, an order was placed for the establishment of another facility in Krasnodar: The Regional Hospital Nr. 1 was built. The project consisted in the planning and realization of the conversion and expansion of this site and also putting it into operation. The hospital in Krasnodar was among VAMED's largest construction projects beside the Vienna AKH and the Linz UKH.

2005

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FRESENIUS VAMED 1996 – 2007

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2007

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2009

FRESENIUS VAMED 2008 – 2012

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Pictures to the left: [32, 33, 34] A newly erected six-story building next to the hospital's existing main building in Köln-Merheim, Germany. Fresenius Vamed was the general contractor during the construction of the building.

Pictures to the right: [35, 36] Fresenius Vamed also takes on the technical management of hospitals. The company is also responsible for this in facilities in North Africa and the Middle East for example. [37, 38] After the earthquake in Haiti in early 2010 a new hospital was erected in a collaboration between Hilfswerk Austria, the Else Kröner-Fresenius Foundation and Fresenius Vamed in the city of St. Louis du Nord. The *Hôpital Communitaire Autrichien-Haïtien* was opened in St. Louis du Nord on February 7, 2011. [39, 40] The hospital offers treatment in the four core regions of internal medicine, gynecology/obstetrics, surgery, and pediatrics. In addition to outpatient care, there are also 20 beds available for inpatient care. Technical equipment includes X-ray and lab diagnostics equipment, respirators, a generator house and a water treatment system. [41, 42] Photos from *Therme Wien*, a thermal spa in Austria. This early VAMED project, like all of the other 600 projects, has contributed to Fresenius Vamed's good figures since 1982: In 2011, the company had 3,724 employees and sales of 737.4 million euros. A little more than half of this is generated abroad. Fresenius Vamed is active in 70 countries on four continents. Fresenius Vamed stands out due to the fact that it offers everything from a single source: from planning to constructing and equipping to managing health care facilities. Fresenius Vamed's approach is one for an entire "life cycle": health care facilities are operated and taken care of for the duration of their whole life cycle. This service is offered for all kinds of health care facilities, be they health tourism facilities, acute care hospitals or rehabilitation clinics.

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2011

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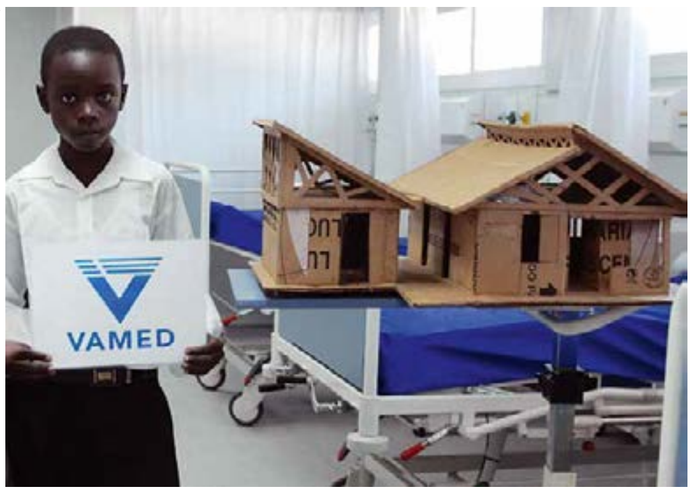

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FRESENIUS VAMED 2008 – 2012

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2012

Fresenius Helios

COMPREHENSIVE PATIENT CARE

“I was treated with great patience and friendliness by the doctors. Surgery was recommended, and good reasons were given for it. It was well performed, and there were no problems.“

Patient at a HELIOS hospital

Fresenius has been in close contact with hospitals and clinics ever since the start of the company: They are the company's most important clients. Thanks to this collaboration, Fresenius employees know how these facilities are organized, their workflows, and what is important in patient care, so the venture into the hospital operating business in 2001 was well prepared. In 2005, the HELIOS Kliniken Group was added, and gave its name to this new Fresenius business segment. With 72 hospitals and a total of 23,000 beds, HELIOS hospitals are an integral component of health care in Germany.

In acute care and in rehabilitation, in obstetrics as well as emergency medicine – HELIOS hospitals are there for comprehensive, high-quality medical care. Newborn, young and elderly people are among HELIOS patients, who numbered more than 2.7 million in 2011.

Highest Quality for Hospital Patients

Fresenius has been active in the private hospital-operating sector since 2001. The Group's business segment Fresenius Helios is now one of Germany's largest hospital operators, and among the most active: Fresenius Helios' health care facilities set standards in the quality of medical care. This is widely acknowledged even outside of Germany.

First Steps With Rehabilitation

It was a logical move for Fresenius to enter the hospital operation business at the beginning of this century: The Group had proved itself successful as a close business partner for clinical users, been active in the fields of planning, constructing, equipping and managing health care facilities since the acquisition of hospitalia and Vamed, and operated numerous dialysis clinics through Fresenius Medical Care. For these reasons, the Management Board of Fresenius decided the company should get involved in clinical practice on a larger scale. An opportunity emerged in 2001 when Wittgensteiner Kliniken AG, one of the oldest German private hospital chains, was up for sale. Fresenius acquired this company's 22 hospitals, which had gained an especially strong reputation in the area of medical rehabilitation. But this was only the first step. The focus then turned toward purchasing acute care hospitals, and this goal was realized in 2005, when Fresenius acquired 94 percent of HELIOS Kliniken GmbH. The stake has since been raised to 100 percent. All of Fresenius' hospital operating activities are pooled under HELIOS, which became a new business segment, Fresenius Helios, in 2008.

HELIOS Quality Management

With HELIOS health care, Fresenius owns one of the most active initiators in the field of quality management for the hospital industry. HELIOS employees have always set high strategic goals, with a focus on benefiting patients and becoming the best in medical care quality among hospitals in Germany. The basis for such optimization measures is formed by a groundbreaking new system developed in collaboration with expert researchers and which analyzes routine data for all cases treated at Fresenius Helios hospitals. This made it possible – for the first time in Germany – to draw precise conclusions about the quality of treatments and about the potential for optimization, both at the hospital level and at the level of the individual departments. Furthermore, the gathered data is used to compile quality reports for HELIOS hospitals, which have been published regularly since 2007 and create more transparency. Since they provide information about the actual performance of Fresenius Helios' acute care wards, they are highly useful for medical experts and also provide a helpful guide for patients. The quality of treatment in Fresenius Helios hospitals has proved to be above average: In the areas of pneumonia, cardiac infarction and cardiac insufficiency the mortality rate, which is essential for the assessment, is at least 30 percent lower than the German average, and in cases of strokes it is lower by approximately 10 percent. The measures for quality improvement derived from the compiled figures contribute significantly to HELIOS hospitals' medical care services reaching top international levels in some areas, and not only at the company's large centers.

Expertise Through Knowledge

This record of quality care is also due to the various innovative concepts for improving both therapy and care that have been developed by HELIOS employees. One example is the New European Surgical Academy, which was established by HELIOS in 2004 for the purpose of analyzing, evaluating and optimizing surgical procedures from different areas of medicine. To do this, it collaborates internationally with numerous medical institutions and hospitals.

HELIOS also works within its own ranks to further its reputation as a company of great expertise. The HELIOS academy, for instance, serves to rapidly disseminate knowledge about innovations in the different working fields among employees, and to keep their qualifications at the highest possible level at all times.

This goal is also served by 24 specialty groups, in which all the chief

physicians of a particular specialty from across the company and the corresponding heads of nursing are organized. Important tasks of the heads of the respective specialty groups include formulating recommendations for action according to the company's standards, enabling an exchange about innovative therapies, and informing the members of the respective specialty group about recent scientific research findings. In addition, HELIOS health care has established an efficient structure for communication and knowledge transfer within the chain of hospitals through a company-wide intranet and the HELIOS central library. The central library has offered its services as a virtual library since 2001, providing direct access to the latest publications from the various areas of medicine and health care to all employees via the Internet.

All of these structures are used not only for knowledge transfer and exchange, but also to integrate new clinics and employees quickly into this dynamically growing company.

Patient-Oriented Clinical Research

HELIOS hospitals' knowledge initiatives follow from the insight that medical care needs science and research in order to meet the highest quality standards. Fresenius Helios therefore considers it important to promote medical research within the company. There are incentives for physicians and hospital wards to do research projects, and the company awards a prize, the HELIOS *Wissenschafts- und Innovationspreis*, for outstanding scientific achievements.

The promotion of research activities is anchored in the HELIOS Research Center, which also serves as a contact point for external partners, for example from the pharmaceuticals and medical products industry. It also helps coordinate clinical research in collaboration with different universities and research institutes, including the Max-Delbrück Center for Molecular Medicine in Berlin, the Charité University Hospital Berlin, and the Witten/Herdecke private university.

Networked in Order to Save Lives

Besides the implementation of scientific findings in the practice of medical treatment and care, Fresenius Helios puts an emphasis on making good use of state-of-the-art medical and communications technology. This is one reason why Fresenius Helios became the first German hospital group to introduce a nationwide "teleneurology network."

With this network, a video link to specialist physicians is possible via the Internet, enabling the optimized treatment of acute strokes: Doctors can contact a neurology hospital with an intensive-care stroke unit around the clock via the HELIOS Neuronet. Patients benefit from being examined by several physicians, connected via the Internet. The medical experts discuss the uploaded computer tomography or MRT images, agree upon possible therapies, and initiate them. This way, emergency patients can receive acute medical treatment faster and with even more expertise in any HELIOS hospital, even if it does not have a neurology ward of its own, thanks to teleneurology.

And even better: For the benefit of all stroke patients, HELIOS Neuronet can also be used by hospitals that do not belong to the Fresenius Helios group.

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FRESENIUS HELIOS 1994 – 2001

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Pictures to the left: [01] In 1994, Dr. med. Lutz Helmig established HELIOS Kliniken GmbH. The group started out with four hospital sites in Germany – Bad Schwartau, Bochum, Volkach and Bleicherode. Seen here is the HELIOS Hospital in Bochum-Linden. [02] The Klinikum Bleicherode was the first HELIOS hospital on the territory of the former East Germany. The hospital was built in the first decade of the 20th century, its construction being funded through donations from the people of Bleicherode, and went into operation in October 1908. In order to meet the performance standards of modern-day medicine, it has been further developed both with structural modifications and regarding medical matters. [03] Among the company's first hospitals were the facilities in Bad Schwartau and Bochum. The hospital in Bochum offers basic and regular care as well as specialty wards for surgery and internal, sleep and respiratory medicine, surgical ophthalmology, child and adolescent psychiatry, radiology, anesthesia, and pneumology. In addition to providing basic and regular medical care for the inhabitants of the southwestern part of Bochum, the clinic has set up diagnostic and therapy centers, like the gastrointestinal and vascular centers. Seen in the photograph are employees of the hospital in Bochum. [04, 05, 06] At the HELIOS Agnes Karll hospital in Bad Schwartau, 38 physicians treat some 4,500 inpatients a year in departments for anesthesia and palliative care, surgery, gynecology, otolaryngology, internal medicine, oral and maxillofacial surgery, neurosurgery, orthopedics and casualty surgery, plastic surgery, urology and dentistry. Seen here are employees and patients of the hospital.

1994

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1999

Pictures to the left: [07, 08] HELIOS Hospital Erfurt is a maximum care hospital and academic teaching hospital for Jena University Hospital. More than 1,800 staff treat over 50,000 inpatients and more than 140,000 outpatients every year at HELIOS Hospital Erfurt. This clinic was taken over by HELIOS in 1999. In the same year, HELIOS took an important step towards quality improvement: HELIOSnet, a modern communication infrastructure for internal cooperation between HELIOS colleagues at all specialty levels, was introduced. [09] In 2001, Fresenius entered new territory when it took over one of Germany's oldest private hospital chains, the Wittgensteiner Kliniken AG, and consequently became a hospital operator. The point of origin for Wittgensteiner Kliniken AG was the hospital in Bad Berleburg. [10, 11] The hospital in Bad Berleburg in 1959 and in 2001.

Pictures to the right: [12] In 2001, the Municipal Hospital in Berlin-Buch was up for sale. The indebted maximum care hospital was in poor condition in many respects. Fresenius Helios committed to constructing a new building with room for 1,000 beds that would cost 200 million euros, without any subsidies until 2008. The bid was accepted. [13] The hospitals of the HELIOS Group do their invoicing according to the DRG system (diagnosis related groups system). With the help of this system, every treated case can be categorized according to medical criteria or with respect to cost. While the DRG system is a factor in ousting providers that work uneconomically, the business segment Fresenius Helios, with its efficient hospitals, can draw economic advantages from this accounting system. [14, 15, 16] HELIOS County Hospital Gotha/Ohrdruf is a tertiary care hospital in Central Thuringia and serves as a teaching hospital for Jena University Hospital. At the site in Gotha-Sundhausen, a newly built hospital wing came into operation in March 2002.

FRESENIUS HELIOS 1994 - 2001

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2001

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FRESENIUS HELIOS 2002 – 2007

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2003

Pictures to the left: [17] HELIOS Hospital Wuppertal, with its 967 beds the largest hospital in Germany's Bergisches Land region, was acquired in 2003 and is a maximum care clinic. Its various specialty departments cover almost the entire range of medical services. Every year, about 50,000 patients receive inpatient treatment and another 100,000 are treated as outpatients; a combined 2,500 employees work at two sites, Barmen and Elberfeld. HELIOS Hospital Wuppertal is also a hospital for the university in Witten/Herdecke. Nine chairs at this private university are occupied by staff of this HELIOS hospital. [18, 19] HELIOS Hospital Schwerin is another maximum care hospital, and is an academic teaching hospital for Rostock University. One of the largest hospitals in Mecklenburg-West Pomerania state, HELIOS Hospital Schwerin has 1,450 beds.

Pictures to the right: [20] A patient at the HELIOS Hospital Schkeuditz on the outskirts of Leipzig. This acute care hospital, providing basic and regular care, was opened in December 2004 and has 360 beds in total. [21] In 2005, Fresenius bought 94 percent of the shares in HELIOS Kliniken GmbH for 1.5 billion euros. HELIOS Kliniken was the perfect addition to Wittgensteiner Kliniken in terms of their medical orientation and geographic distribution. At the time of purchase, HELIOS kept about 9,300 patient beds available in 24 hospitals and employed about 18,000 staff. When the takeover took place, construction work on the new hospital building in Berlin-Buch was underway. The project, which cost 200 million euros, was the most state-of-the-art hospital building in Europe at the time. This 1,000-bed hospital, built without any public funding, provides inpatient treatment for 38,000 patients a year, while the affiliated polyclinic is used by another 120,000 patients. [22, 23] Klinikum Hagen is another member hospital of the Fresenius Helios group. The photographs depict staff and patients at this clinic.

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2005

Pictures to the right: [24, 25, 26, 27, 28]
When HELIOS acquired Klinikum Krefeld in late 2007, the company began the construction of a new complex of hospital buildings, and so one of the most modern hospitals in the country will open its doors in the German city in 2014. “When the decision came in favor of HELIOS, I knew for myself that the best of the private hospital operators had been chosen,” wrote a Klinikum Krefeld employees’ representative in a letter to the editor after the privatization process. [29, 30, 31] In order to ensure uninterrupted care before and after inpatient treatment, HELIOS runs medical care centers, or MVZs, to use the acronym for the German *Medizinische Versorgungszentren*. The MVZs are situated either directly at the hospital site or within easy reach of a HELIOS hospital. Especially in economically weak areas, the MVZs often guarantee outpatient care for local people. Today, 31 medical care centers belong to the HELIOS health care group. The photographs give insights into the work of these facilities.

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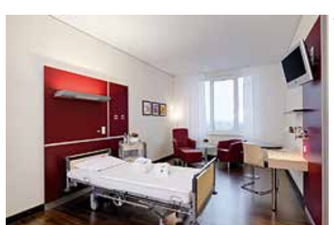

FRESENIUS HELIOS 2002 - 2007

2007

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2009

Pictures to the left: [32, 33] To improve patient care quality, HELIOS has conducted anonymous patient polls in all acute care clinics since July 1, 2009. For this purpose, inpatients are requested to fill out a standardized questionnaire. [34] HELIOS has been one of the initiators of the *Initiative Qualitätsmedizin*, the first and so far only cross-operator initiative for medical quality assurance in Germany. The aim of this voluntary effort is to offer patients the best possible medical quality, based on active error management and performance transparency.

Pictures to the right: [35] Operating room checklists are another element of quality management. HELIOS is actively involved in the compilation of the checklists initiated by the World Health Organization (WHO). These lists make it possible to optimize workflows in health care, recognize errors at an early stage and, ultimately, to prevent errors in treatment. [36, 37, 38] Surgeries and operating rooms at HELIOS hospitals are equipped with cutting-edge technology. HELIOS was the first German hospital operator to introduce a so-called nationwide teleneurology network, namely NEURONET, which enables the treatment of acute strokes via a video link. [39] To enable quick research, Fresenius Helios provides HELIOS booklets for its employees. They are one component of the company's comprehensive knowledge and quality initiative, and facilitate use of the large amount of information offered in electronic form by the HELIOS central library to all HELIOS employees. [40, 41] Today, the HELIOS Kliniken Group is a specialist for the running and operative management of hospitals and focuses on acute medical care, which is complemented by medical rehabilitation. Being one of the largest and most medically advanced hospital operators in Europe, Fresenius Helios employs more than 43,000 people and had sales of 2.7 billion euros in 2011. Seen in the photographs are physicians and their patients. [42] The HELIOS headquarters in Berlin-Mitte, by the Spree River. The number of patients receiving treatment from the company in 2011 was 2.7 million. [43] The employees' work is geared towards the welfare of patients.

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2011

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FRESENIUS HELIOS 2008 – 2012

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2012

Fresenius – The Healthcare Group

FORWARD THINKING HEALTHCARE

"We never get complacent about our successes. We are committed to getting even better day by day – for medical progress and improved patient care."

Dr. Ulf M. Schneider
Chairman of the Fresenius Management Board

The Healthcare Group

Helping seriously ill people and making their treatment affordable – these are the goals of all of Fresenius' business activities. To succeed in this effort, a stable economic basis and a suitable form of organization that can adapt to expansion are necessary. Since the 1960s, the structures of the company have continually been adjusted to meet these ever-changing demands.

Dynamics and Structure

In the beginning, there was a small family operation. In the early 1960s, Fresenius amounted to a mere 30 employees, but that was about to change. Within a decade, under the direction of Else and Hans Kröner, Fresenius developed into a company with several hundred employees. Turnover increased 13-fold during this period. In order to reduce the risk of liability for general partner Else Kröner, the *Chem. Pharmazeutische Verwaltungsgesellschaft mbH* was founded, which has been a personally liable shareholder of *Dr. E. Fresenius chemisch-pharmazeutische Industrie KG* since January 1, 1967. In order to facilitate a structured implementation of the various activities and the rapid growth of the company, four different business branches were created: pharmaceuticals, device construction, hospital equipment, and serology and diagnostics. In 1971, they were integrated into three limited partnerships: the *Chemisch-pharmazeutische Industrie KG (Pharma KG)*, the *Apparatebau KG*, and the *Klinikbedarf KG*. Under the umbrella *Dr. E. Fresenius chemisch-pharmazeutische Industrie KG*, the company's managers took first steps towards the internationalization of the company, at first with subsidiaries in France and Switzerland (1971), and then in Austria (1976). In 1977, Fresenius first risked stepping outside European borders with the takeover of the *Hiplex S.A. Laboratório de Hipodermia* in Campinas near São Paulo, Brazil. A company in Great Britain was added in 1979.

Joint Stock Company

Despite the growth and the diversification of the product portfolio, times became more difficult for the company. During the mid-1970s and in the wake of the first severe economic slowdown in postwar Germany, a result of the oil crisis, the purchasing behavior of hospitals changed. Competition with other suppliers led to significant decline in prices, and not only with the "classic" Fresenius product infusion solutions. The entire pharmaceuticals portfolio of Fresenius had to deal with losses of 25 percent. The situation was even worse for medical technology – here the prices dropped by more than half. In addition, competition had increased significantly, both nationally as well as internationally, and declining sales were accompanied by higher production costs. As a result, Fresenius encountered serious financial difficulties. Management therefore decided to establish a joint stock company, into which the three limited partnerships were transferred in 1981. Else Kröner took over 95 percent of the original stock and became Chairman of the Supervisory Board. Daily business was transferred to the Management Board, of which Hans Kröner was appointed Chairman. In 1986, the company went public, and the Fresenius preference share was introduced in Frankfurt.

Else Kröner's Legacy

At this time, Else and Hans Kröner had already made provisions in case of their deaths. Else Kröner was in her late 50s when she decided in 1983 to transfer her entire wealth to a charitable foundation, and in doing so she fulfilled one of her heart's desires: The purpose of the Else Kröner-Fresenius Foundation she founded is to help people suffering from diseases or in situations of need by financially promoting projects in medical research as well as humanitarian initiatives. In addition to this, the foundation serves to maintain the company in its entirety. When Else Kröner died unexpectedly in 1988, the foundation took over as main shareholder. Hans Kröner, who remained in his position of Chairman of the Management Board until 1992, provided stability beyond his wife's death, especially in the technical-pharmacological branch of the steadily growing company.

Expansion

In 1990, and with 5,200 employees, sales at Fresenius AG exceeded 1 billion German marks for the first time. And the company continued to grow. When Hans Kröner's longtime Management Board colleague, Dr. Gerd Krick, became Chairman of the Management Board in 1992, he continued to lead the company just as dynamically and maintained the same

successful course of expansion. However, whereas the company had been focusing its growth only on those opportunities offered by the market, under Gerd Krick's leadership the company started expanding in all areas according to a clear strategic concept, thereby opening new fields of business. Important milestones were the takeover of hospitalia and majority control of Vamed AG in 1994 and 1996, respectively. VAMED helped Fresenius to gain a position in hospital equipment as well as the planning, construction and management of hospitals. In 1996, the takeover of the American company National Medical Care followed, and it was merged with Fresenius' dialysis business. The pharmaceutical branch was considerably consolidated by the takeover of the international infusions business of Pharmacia & Upjohn in 1998, and finally, in 2001, Fresenius acquired the Wittgensteiner Kliniken and thus entered the sector of private hospital operation.

These takeovers continued the company's development into a growing, successful, worldwide health care group.

In 2003, Dr. Ulf M. Schneider became Chairman of the Management Board. Under his leadership the company continued to expand in business areas where it was already active and in those connected to them. With the acquisition of HELIOS Kliniken in 2005, Fresenius made a decisive step in strengthening its hospital operations business, and significantly expanded the market position of Fresenius Medical Care with the takeover of the Renal Care Group the following year. Buying the American company APP Pharmaceuticals marked Fresenius Kabi's entry into the North American market in 2008, a year that also saw the successful closing of the acquisition of Indian pharmaceuticals manufacturer Dabur Pharma, which served to strengthen Fresenius Kabi's efforts in the field of intravenously applied generic medication.

From AG to a Partnership Limited by Shares

An important move in setting the company's future course came with the 2007 decision to convert Fresenius AG into a European company. Among other advantages, status as a Societas Europaea (SE) allows a company to act as a legal entity anywhere in the European Union. Business carried out within the European Union is standardized and simplified, and establishing subsidiaries in other EU countries is made easier. In the meantime, the company had grown so much that in 2009 the Fresenius shares were integrated into Germany's benchmark stock index, the DAX, just as Fresenius Medical Care's had been previously.

In 2011, the legal form of the company was changed once again, and Fresenius SE became a partnership limited by shares in order to prepare it for further expansion over the long term.

Restructured into the Future

Faced with the enormous growth of Fresenius, the company needed to be restructured, a step taken in 2008. Since then, the company has been structured into four business segments, the boards of which work and act on their own initiative according to the "entrepreneurs within the enterprise" principle: Fresenius Medical Care, Fresenius Kabi, Fresenius Helios and Fresenius Vamed. In addition, Fresenius Biotech was positioned within the holding Fresenius SE & Co. KGaA. This biotechnology company focuses on the development of biopharmaceutical therapy solutions for important, unanswered medical questions in the field of transplantation and oncology. The focus is on innovative immunotherapeutic products.

Fresenius meets the highest quality standards in all fields while pursuing the goal of setting milestones in medical care – for the benefit of human health. This is what Fresenius has represented for the last 100 years: Forward Thinking Healthcare.

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1982

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STIFTUNGSURKUNDE

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Fresenius

Aktiengesellschaft Bad Homburg v.d.H.

Nr. 00000

FÜNFZIG VORZUGSAKTIEN
ZU JE
FÜNFZIG DEUTSCHE MARK

Der Inhaber dieser Sammelvorzugsaktie ist mit funfzig Vorzugsaktien zu je Fünfzig Deutsche Mark bei der Fresenius Aktiengesellschaft, Bad Homburg v.d.H., nach Maßgabe ihrer Satzung als Aktionär beteiligt.

Bad Homburg v.d.H., im November 1986

Fresenius Aktiengesellschaft

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Pictures to the left: [01, 02] Fresenius has operated as a joint stock company since the beginning of 1982. In 1986, Fresenius AG entered the stock exchange. The pictures are from the press conference which was held upon entry into the stock exchange in Frankfurt. [03, 04] 300,000 shares with a nominal amount of 50 German marks per share were distributed in 1986. [05] With the founding of the joint stock company, Else Kröner became Chairman of the Supervisory Board at Fresenius AG. In 1983, she founded the charitable Else Kröner-Fresenius Foundation. Seen here: the Foundation Deed, issued by the district president in Darmstadt. [06] When Fresenius AG was established in 1982, the head office was in Oberursel. By the mid-1970s new headquarters had been needed, and a highly suitable facility was found in Bad Homburg. But after talks with the city failed, the head office was moved in 1978 into the former Panorama Hotel at the Borkenberg in nearby Oberursel.

Pictures to the right: [07] Fresenius subsidiary's production plant in Switzerland. The internationalization of the company, beginning in 1971 with the founding of subsidiaries in Switzerland and France, progressed slowly at first. In 1985, however, Fresenius decided for a stronger commitment and turned to the North American market. [08] Else Kröner during a tour of the plant in Bad Homburg on Kirdorfer Straße. [09] At the 1987 general meeting of Fresenius AG, with Else Kröner at bottom left. On June 5, 1988, the company's main shareholder died unexpectedly. With her death, her property passed to the Else Kröner-Fresenius Foundation. Next to Else Kröner in the front row, Deputy Chairman of the Board Dr. Alfred Stiefenhofer; then Hans Kröner, Chairman of the Management Board at Fresenius AG starting in 1982, and Dr. Gerd Krick, who took over in that position in 1992. [10] Under Gerd Krick's management, Fresenius became a global player. The expansion also led to India. Here, the joint venture Fresenius Mafatlal Medicals Ltd. was founded in 1997. [11] Gerd Krick thought the company's head office should return to Bad Homburg, and in 1998 the new headquarters was opened there. Even now, the building in Oberursel still belongs to Fresenius and is used for offices.

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FRESENIUS 1999 – 2012

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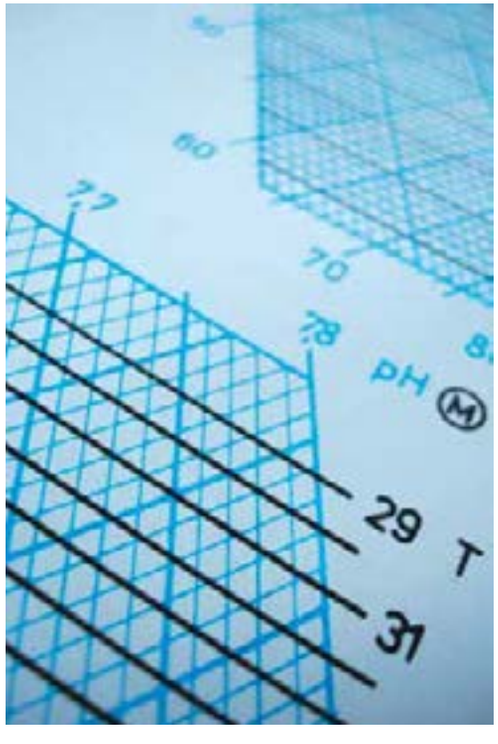

2003

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2008

FRESENIUS

100 Years

Forward
Thinking
Healthcare.

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Pictures to the left: [12, 13, 14] In 2003, Fresenius concentrated its biotechnology activities in its subsidiary Fresenius Biotech, founded especially for that purpose. Fresenius Biotech continued business with the immunosuppressive drug ATG-Fresenius, commercialized the trifunctional antibody Removab, and developed new therapy approaches in the fields of transplantation medicine and oncology based on innovative antibody technologies. In 2011, Fresenius Biotech employed approximately 170 employees. Locations include Munich and Gräfelfing, Germany. [15, 16] Fresenius ProServe GmbH, which had been responsible for Fresenius' activities in the field of hospital construction and management, was liquidated in 2008. Fresenius Vamed was set up for hospital planning, construction and management. [17, 18] Fresenius Helios was founded for operating hospitals. [19, 20, 21, 22, 23] In 2011, the company changed its legal form to a partnership limited by shares and began operating as Fresenius SE & Co. KGaA. In 2011, Fresenius posted sales of 16.5 billion euros, including sales by Fresenius Medical Care of US$ 12.8 billion. The pictures show sections from the production at Fresenius Medical Care.

Pictures to the right: [24] Everything started with Ampuwa in 1912 and it is still in Fresenius' product portfolio today. In 1912 the company had no more than 10 employees, in 1990 there were 5,200 and in 2012 more than 160.000 – in about 100 countries. [25, 26, 27, 28] Infusion solutions were the origin of Fresenius' success – today they are produced by the Fresenius Kabi division. With the takeover of APP Pharmaceuticals in 2008, Fresenius carried out a decisive step in developing the North American market for Fresenius Kabi. In the same year, the Indian company Dabur Pharma was acquired. This enabled Fresenius Kabi to produce on a large-scale generic drugs to be administered intravenously (I.V. generics) and to expand in the field of oncology drugs. Both acquisitions have made Fresenius Kabi a leading provider of I.V. generics worldwide. The pictures show some of the production at Fresenius Kabi.

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