WHICH TREATMENT FITS BEST FOR OUR PATIENTS

HOW OUR MARKETS WORK MAGAZINE 2015

HOW WE CAN IMPROVE THE QUALITY OF LIFE OF OUR PATIENTS

How our business works and how we can further shape the development of the industry

WHAT MATTERS
UNDERSTAND WHAT MATTERS
OUR GROWTH

... IS BUILT ON OUR IN-DEPTH UNDERSTANDING OF OUR MARKETS, BUSINESS AND OUR PATIENTS’ NEEDS.
Our markets are evolving, driven by global megatrends such as demographic change, the increase in lifestyle diseases, changes in the health care industry and improved access to medical care.

As well as impacting on the requirements of our business, these trends are also changing the needs of our patients.

For us, successful growth means understanding these changes and actively using them as an opportunity to keep on improving our patients’ quality of life. Because we understand what matters.
UNDERSTANDING MARKETS

OUR MARKETS ARE DIVERSE. WE UNDERSTAND THIS VARIETY AND ADDRESS IT DIRECTLY.
DIFFERENT CULTURES, RELIGIONS, LANGUAGES, INFRASTRUCTURES AND HEALTH CARE SYSTEMS MAKE OUR MARKETS AS UNIQUE AS THE PATIENTS WE LOOK AFTER.
UNITED STATES

BOUNDLESS OPPORTUNITIES

Most of our dialysis clinics are in the U.S. These clinics treat approximately 38% of all the country’s dialysis patients. We also provide non-dialysis medical services, for example, the coordination of hospitalist and intensivist services. This enables us to expand our business beyond dialysis.
MOROCCO

HOLY FRIDAY

Islam is the state religion in Morocco. Prayer is an important part of daily life for many Moroccans, and Friday prayers are especially significant. As in other Islamic countries, Friday is therefore regarded as a holy day in Morocco. At midday, the call to prayer summons people to the mosque. This has to be considered when coordinating dialysis appointments.
RUSSIA

SIZE IS RELATIVE

Russia is the biggest country in the world, extending across 11 time zones. However, it is also one of the most sparsely populated territorial states. This presents a challenge for adequate comprehensive health care.
Indonesia’s health care system is less developed than that of other emerging countries. This is about to change. The multiethnic state aims to set up a comprehensive health care system. This is a vast project, partly because of the country’s geography: The largest island nation in the world consists of 17,500 islands, more than 6,000 of which are inhabited. Many of them are remote and rarely populated.
Portugal was the first country in the world to introduce a reimbursement model for dialysis that collectively refunds all essential services and the use of dialysis products. The level of reimbursement is linked to specific treatment outcomes. There are indications that other health care systems are moving towards holistic, value-based remuneration.
HUNGARY

PREVENTION IS THE BEST TREATMENT

To draw attention to chronic kidney failure and focus physicians and patients more on early nephrological care, Fresenius Medical Care supports prevention programs such as the Hungarian National Kidney Program. This trains physicians and educates people in the risk groups on the topic. It is a valuable approach, as early treatment can help to stabilize the course of chronic kidney failure.
COLOMBIA

LITTLE STORIES – BIG IMPACT

“La lectura cura” (reading heals) is the name of a project in which volunteer helpers regularly read to patients at our Colombian dialysis clinics with the aim of putting them at ease and improving their well-being.
Fresenius Medical Care is present with its products in more than 120 countries around the world. The market conditions vary considerably. The Company successfully takes this into account with its differentiated product range.

Around

2.8 M

people worldwide received dialysis in 2015.

DIALYSIS MARKET VOLUME IN 2015:

$73 BN

One in two dialysis machines worldwide is made by Fresenius Medical Care.

CARE COORDINATION IS A GROWTH MARKET:
REVENUE INCREASED BY 81%

HEALTH CARE SPENDING AS A SHARE OF GROSS DOMESTIC PRODUCT:

17%

IN THE U.S.
(Germany: 11%, India: 4%)

More than 104,000 employees work for Fresenius Medical Care around the globe.

Growth in the number of dialysis patients worldwide in 2015:

~6%
THE DIVERSITY OF OUR REGIONS

IN A RECENT INTERVIEW, THE REGIONAL EXECUTIVES OF FRESENIUS MEDICAL CARE TALKED ABOUT THE COMPANY’S GROWTH STRATEGY AND EXPLAINED HOW IT MAPS TO LOCAL MARKET DYNAMICS.

Ron Kuerbitz
Chief Executive Officer for North America

“We have a tremendous opportunity to be at the forefront of a new direction of health care.”

Dominik Wehner
Chief Executive Officer for Europe, Middle East and Africa (EMEA)

“We are moving from standalone products towards value-based selling.”

Ron Kuerbitz
Chief Executive Officer for North America
**FRESENIUS MEDICAL CARE 2015**

**UNDERSTANDING MARKETS**

**FIRST OF ALL, GENTS, PERHAPS YOU COULD BRIEFLY DESCRIBE THE MARKETS YOU SERVE?**

**Dominik Wehner, Europe, Middle East and Africa (EMEA)**

As you can imagine, EMEA – spread over three continents – is a very diverse region. We have many different cultures, languages, religions and health care systems in countries that vary in size from the smallest in the world to the largest. So this is definitely a case of “one size does not fit all”.

**John Anderson, Latin America**

The same goes for me. Latin America, which includes Central America and the Caribbean, is a vast, extremely diverse region. The fact that most of the population speaks Spanish is deceptive – it is in fact very heterogeneous. Just to illustrate the gap in living standards, Latin America has the two poorest countries in the Western hemisphere – Haiti and Honduras – and two of the richest – Cayman Islands and the Dutch Antilles!

**Ron Kuerbitz, North America**

Actually, we have a very different story in my region with its three large countries. The biggest revenue driver for us is the U.S., with a largely established health care system where patients with chronic conditions such as renal disease are generally reimbursed. We have nothing like the diversity or variability you might see in Europe or Latin America, but competition is very stiff.

**Roberto Fusté, Asia-Pacific**

The two defining features of the Asia-Pacific market are its size and growth rate. Asia-Pacific is home to over 57% of the world’s population. Overall, we are seeing 8% annual patient growth in this region, with China, India, the Philippines, Vietnam and Pakistan even outpacing the 10% mark.

**WHAT OPPORTUNITIES IN PARTICULAR DID YOU HAVE IN MIND, RON?**

**Ron Kuerbitz, North America**

I am talking for instance about the transition from volume-based to value-based care. With the volume model, physicians are paid a fee for each service, so the more you do, the better. The value model, already a reality in the U.S., is all about outcomes and how a patient – and the payer – perceives the process. The U.S. government has announced that 30% of the public insurance payments will be value-based by 2016 and this figure should rise to 50% by 2018. So they’re going to measure quality, they’re going to measure customer service and then they’re going to reward efficiency.

**SO I SUPPOSE THE LOCAL MARKET CHALLENGES ALSO VARY FROM REGION TO REGION?**

**Dominik Wehner, EMEA**

For us, the challenge in expanding our business beyond dialysis lies in managing diversity by finding scalable, replicable business models – similar to the dialysis model – and transferring them to new market opportunities.

**John Anderson, Latin America**

The health care systems in Latin America are largely public and generally underfunded – ranging from a reasonably satisfactory service to very poor levels of care. Few in number, private systems are sophisticated and provide high-quality medical treatment. I would love to see local governments taking health care more seriously, providing adequate budgets and running their systems efficiently.

**Ron Kuerbitz, North America**

U.S. health care faces rising cost pressures. In recent years, we are seeing decreasing governmental reimbursement rates that do not adequately cover our costs. However, the country desperately needs to focus on the unique needs of the chronically ill, who currently account for 86% of total health care costs. We need to step back – and make sure we’re also seeing the opportunities that are embedded in every market challenge.

**SO WHY IS THAT AN OPPORTUNITY FOR FRESENIUS MEDICAL CARE?**

**Ron Kuerbitz, North America**

Value-based care also means managing costs. I believe that we are able to do this even better than other players because we see our patients on a regular
basis and understand their condition. We can combine medical management with really effective financial management. Currently, we are participating in some federal pilots, one focusing on dialysis patients and another one on hospitalization. The better we manage the processes, the lower the costs.

**ARE OTHER REGIONS ALSO LOOKING TO REACH BEYOND THE CORE DIALYSIS BUSINESS TO DRIVE GROWTH?**

Dominik Wehner, EMEA
Certainly in EMEA. Of course we will continue to grow with our core dialysis offerings in emerging markets. But we will complement this with new cross-regional Care Coordination business models in mature and saturated markets. In other words, health care services beyond our core business. I am thinking of health care services to manage the comorbidities that our patients face, for instance.

**SO YOU’RE ALSO SEEING A SHIFT TOWARDS VALUE RATHER THAN VOLUME IN THE PRODUCTS BUSINESS IN EMEA?**

Dominik Wehner, EMEA
Definitely. We are moving from stand-alone products towards value-based selling. The conventional expectation ‘I just need a good product’ is yesterday’s attitude. Think IT – consumers don’t want a computer and a monitor any more. They want a solution to their problem. Health care is no different. And that represents a change in mindset – and a massive shift for a sales organization.

**BUT YOU’RE CONFIDENT THE COMPANY CAN MASTER THIS CHANGE?**

Dominik Wehner, EMEA
Yes, thanks to our strong experience in the service business, we are better positioned than most competitors to drive this change and capitalize on it. At some point, we might even be selling medical outcomes – now that’s something to think about!

**WHAT ABOUT LATIN AMERICA JOHN? HOW ARE YOU TACKLING LOCAL MARKET CHALLENGES THERE?**

John Anderson, Latin America
Through a multi-faceted approach. On the one hand, we focus on quality and on cost-cutting solutions to be able to deliver affordable, high-quality dialysis. On the other, we are constantly negotiating with the authorities for better reimbursement rates. A key success factor here is our efforts to train and retain good and experienced employees in order to work efficiently and provide good quality dialysis treatments despite the other challenges.

**AND WHAT ABOUT YOU, ROBERTO?**

Roberto Fusté, Asia-Pacific
For us, it’s all about availability, accessibility and affordability. So availability means we participate in the market and ensure we are equipped with the necessary resources and skills to meet customers’ needs. Accessibility means we need to engage with decision-makers to ensure we have market access. Not forgetting of course the need to deliver affordable therapies tailored to local market needs.

“Asia-Pacific is home to over 57% of the world’s population with, overall, 8% annual patient growth.”
HOW DO YOU TRANSLATE THIS INTO GROWTH OPPORTUNITIES?

Roberto Fusté, Asia-Pacific
We have different go-to-market strategies. In the emerging markets, we will be looking to establish dialysis clinics, home therapy programs and professional education services. In the more mature markets, we will expand our comprehensive clinic infrastructure and – in selected markets – add Care Coordination services.

John Anderson
Executive Vice President
Latin America

“A key success factor here is our efforts to train and retain good and experienced employees.”

FINALLY, PERHAPS EACH OF YOU COULD NAME ONE OR TWO KEY MILESTONES OR SUCCESS FACTORS IN FRESENIUS MEDICAL CARE’S JOURNEY?

Dominik Wehner, EMEA
As a company, I think we can be proud of how we manage diversity. I do not know many companies with such a complex business model across such a global network. Looking beyond the challenges, diversity also presents enormous, long-term development potential – from several directions.

Roberto Fusté, Asia-Pacific
I think the hard work we are doing now will pave the way for our future success in Asia-Pacific. We are putting the resources, infrastructure and skills in place to meet all the renal and related care needs of patients in this region. More to the point, our work will support our positioning as the health care partner of choice.

Ron Kuerbitz, North America
At Fresenius Medical Care North America, we have a tremendous opportunity to be at the forefront of a new direction in health care and take a big stake in the discussion around the transition to value-based care.

John Anderson, Latin America
I’d like to add that, for me, success is a matter of perseverance. If at first you don’t succeed, try again. As anyone who knows the business in this challenging region will confirm, you have to be resilient, very patient and also have a sense of humor and a long-term view.

ANY PROMISING TRENDS IN LATIN AMERICA, JOHN?

John Anderson, Latin America
As health care systems mature and dialysis referral rates rise, we will be looking at a significant growth potential in Latin America – especially in our low-penetration markets. Also, the recent relaxation of laws in Brazil governing foreign investment in medical infrastructure has turned this massive country into a potential new window of opportunity for us. So now we need to focus on fine-tuning our negotiation skills with government stakeholders so we can present win-win business cases built on solid, proven health care economics.
OUR BUSINESS IS CONSTANTLY EVOLVING.

WE WANT TO CONTINUE TO ACTIVELY CONTRIBUTE TO THE DEVELOPMENT OF THE INDUSTRY WITH NEW IDEAS.

UNDERSTANDING OUR BUSINESS
AS THE GLOBAL MARKET LEADER IN DIALYSIS, WE OFFER PRODUCTS AND SERVICES FOR PEOPLE WITH CHRONIC KIDNEY FAILURE IN MORE THAN 120 COUNTRIES.

WE INTEND TO CONTINUE SETTING QUALITY STANDARDS, TAKING RESPONSIBILITY, AND NEVER STOP LEARNING IN THE FUTURE, TOO.
We aim to further optimize the success of dialysis treatment, minimize risk factors, and continuously improve our patients’ quality of life through innovative treatments and technologies. Our product range encompasses dialysis machines, dialyzers and other disposable products for chronic and acute dialysis and other blood cleansing procedures.
Every 0.7 seconds, our employees treat a dialysis patient at one of our dialysis clinics somewhere in the world. Our teams of physicians and dialysis experts are specialists when it comes to high-quality patient care.
CARE COORDINATION

We combine non-dialysis medical services under the term Care Coordination. They include vascular, cardiovascular, and endovascular specialty services, coordination of hospitalist and intensivist services by specialist physicians, and urgent care services. This enables us to expand our business beyond dialysis and thus continue to grow.
QUALIFIED MEDICAL STAFF

A combination of technical and medical expertise is essential in clinics. By providing training and ongoing qualifications for our staff, we have a direct influence on the quality of patient care. The human and emotional bond that our employees develop with our patients is also very important to our patients’ well-being. In addition, it helps them to stick more closely to the often challenging treatment plan.
As a life-sustaining treatment, dialysis is subject to the highest safety and quality requirements. Our external and internal quality standards are geared to providing our patients with the best possible treatment.
37
production sites worldwide

OUR CARE COORDINATION DIVISION COMPASSES AMONG OTHERS:
– VASCULAR SURGERY
– PHARMACEUTICALS DISTRIBUTION
– LABORATORY TESTING SERVICES
– URGENT CARE SERVICES
– HEALTH PLAN SERVICES
– HOSPITALIST AND INTENSIVIST SERVICES

WE PROVIDE:
– Dialysis products
– Dialysis services
– Additional medical services

REVENUE 2015 IN $ BN
16.74

With 294,381 patients treated in 2015 globally, Fresenius Medical Care is the leading provider of dialysis services.

WE OPERATE
3,418
DIALYSIS CENTERS IN MORE THAN 45 COUNTRIES WORLDWIDE.
DR. RANA TAN
is one of Sound Physicians chief hospitalists at Harrison Medical Center in Bremerton, Washington State.
HOSPITALISTS SERVE AS A CRUCIAL LINK BETWEEN PATIENTS, THE HOSPITAL AND THEIR PRIMARY CARE PHYSICIAN, ENSURING THAT CARE IS DELIVERED IN GOOD TIME, SAFELY, EFFICIENTLY — AND WITH THE PERSONAL TOUCH THAT IS SO IMPORTANT WHEN LIVES ARE AT STAKE.

SNAPSHOTS FROM A DAY IN THE LIFE OF DR. RANA TAN, ONE OF SOUND PHYSICIANS’ CHIEF HOSPITALISTS, AT HARRISON MEDICAL CENTER IN WASHINGTON STATE.

Dr. Tan routinely gets up early. By 5:00 a.m., two hours before her 12-hour shift at Bremerton’s Harrison Medical Center begins, the doctor is already on her computer and doing what she calls “pre-rounding”, or creating a mental map of who requires what attention this particular day.

Dr. Tan works fast and methodically, flagging the most critical cases for a closer look once she gets to work and preparing the files of others for discharge to make sure that patients leave the hospital on the same day. “Doing the paperwork and planning so early in the day gives me a plan for my day,” she says. “It translates into having more time with my patients, ideally half an hour at a time. That’s what I’m really here for.”

The day shift begins for Dr. Tan and the other hospitalists who are part of Sound Physicians and work at Harrison Medical Center, a squat beige building with close to 200 beds located a short ferry ride west of Seattle. The physicians gather in their meeting room on the third floor of the West Wing to map out the schedule, looking at new admissions that have arrived overnight and consulting on the status of their existing patients.

The doctors, who all work alternative one-week shifts before taking a week off, are responsible for the well-being of more than 100 patients that day. As chief hospitalist, Dr. Tan cares for around 15 patients personally, but she also keeps an eye on the progress of patients under the care of other doctors on.
A hospitalist is a relatively new medical specialty, dating back to the early 2000s. It refers to a physician whose practice is dedicated entirely to the care of hospitalized patients. Physicians like Dr. Tan have no practice outside the hospital itself but instead focus on providing the best possible care for patients in the hospital from admission to discharge.

Sound Physicians, based in nearby Tacoma, is one of the early leaders in the field. Since being launched in 2001, the physician-led organization has grown into a network of more than 2,000 doctors in nearly 300 hospitals and post-acute care facilities in 33 U.S. states. In 2014, Fresenius Medical Care acquired a majority stake in the nationwide practice that is focused on improving the acute episode of care and managing patients who are at high risk of readmission in the 90-day post-acute phase.

Dr. Tan, who trained as a pulmonary and critical care physician, checks her smartphone for new messages by the workstation at the second floor nursing station. A patient’s son has called, a colleague wants her advice regarding treatment of a heart attack, and several prescriptions await her approval. She returns some calls before continuing visits with the patients assigned to her care that day, who can range from stroke sufferers to patients with renal disease or cancer.

How to make the most of a physician’s time is an art that Dr. Tan has turned into a science since becoming a hospitalist in 2005. “Even in a small hospital, there’s a lot of unnecessary walking going on,” she says as she rushes down a hallway and steps into an elevator. To put numbers to that hunch, she equipped her colleagues with pedometers and measured their daily itineraries. They averaged 3 to 5 miles on foot—which equals lost face-time with patients and presents an opportunity to optimize hospital logistics. As a result, Dr. Tan introduced a system whereby each patient is assigned to one of six teams that correspond to a hospitalist on duty that week.

Each team’s patients are grouped in close geographical proximity, if possible on the same floor, to minimize travel time. Color codes are used to identify the teams. “The color codes make it easy to decide who looks after whom,” says Dr. Tan. She carries the color grid printed on a credit-card-sized badge with her at all times. The system ensures that her staff is never too far away from their patients, generating significant efficiency gains for the doctors at Harrison Medical Center and for the hospital. No wonder that Sound Physicians honored Dr. Tan with its 2013 Summit Award, which honors hospitalists who display exemplary all-round performance.
“If you plan for discharge the moment a patient comes in, you can care for more people more efficiently.”

At this time, Dr. Tan has already cleared seven patients for discharge, meaning they can either return home or move to a post-acute care facility such as a skilled nursing facility before noon. Ensuring safe and smooth transitions is part of a hospitalist’s job, making sure a social worker, nurse or primary care physician on the outside has a full and clear picture of a patient’s diagnosis, treatment, new medications and recovery plans to take over. “If you plan for discharge the moment a patient comes in, you can care for more people more efficiently,” explains Dr. Tan during a rare breather in her schedule. After all, raising the hospital’s acute care outcomes and economic performance is one of her other core competencies.

Since Dr. Tan and her colleagues have a 360-degree view of each patient in their care during his or her stay, they can help the hospital turn beds faster and free up staff because patients are not kept in unnecessarily. Otherwise, the hospital could rack up costly “avoidable days” that lengthen the stay for patients unnecessarily and can negatively affect the hospital’s bottom line.
The eyes and ears of Dr. Tan’s team is Catherine Druce-Smith, one of Sound’s hospitalist registered nurses. She is the central communication link between the hospitalist teams, patients and the hospital. This unique nursing role focuses on driving meaningful improvements in the care of patients and the hospital under the hospitalist service. Part of this work includes conducting a bedside patient feedback survey daily, inquiring about the patients’ condition, needs and worries. “We have a list of scripted questions, but the conversation is really driven by the patient,” says Druce-Smith. First, she inquires if the doctor has been in yet to see the patient. Then she digs deeper: “Do you know what we are doing for your health condition? Can you share your plan of care that the physician has explained to you?” Every survey ends with an open-ended invitation to provide feedback: “What can we do to take care of you better?”

Druce-Smith gathers and relays this input to the hospitalists, either by e-mail, text or in a quick conversation. The six hospitalist teams try to act on almost all requests, even if they sound far-fetched at first. “Feedback is extremely important to help us do our job better,” explains Dr. Tan.

Another innovation Dr. Tan has created to improve the workflow are several small, dedicated workspaces for hospitalists right around the corner from the nurses’ desk on each floor. They provide a quiet zone in the daily bustle of patient care and administrative tasks. She stops by one such room on the third floor to review the medical records, images and lab tests for a stroke patient with serious hemorrhaging. She discusses possible treatment approaches with the hospital staff. Each hospitalist works with a team comprising specialty physicians and other hospital staff, plus a case manager and social worker who help address issues that patients experience outside the hospital. Having reached a conclusion on the stroke patient, Dr. Tan consults her smartphone yet again for a quick snapshot of the patients on her schedule for the day.

“Our job is to make sure we accurately report the diagnosis and what care is provided for the patient throughout their stay.”
Sound Physicians has developed a proprietary software workflow and communications platform called SoundConnect that all of its hospitalist providers and hospitalist nurses can access whenever they need to, either on one of the workstations set up around the hospital or, since early 2016, on a companion mobile app called Brio. “No question, I couldn’t do my work without SoundConnect,” says Dr. Tan. “It’s the best way to get a high-level overview of our patients and what we are doing for them.” SoundConnect gathers all available information about each patient, from diagnosis to medications and up-to-date doctor’s notes, into a live dashboard. This keeps every provider in the loop, particularly during crunch times such as the handover to the hospitalist on duty during the night. “There is no other way we could bring a colleague up to speed about 100 or more patients.” SoundConnect gathers the team’s performance data on patient acuity, length of stay, discharge information and workflows to determine the quality of its outcomes.

5:45 p.m.

It’s just past peak time for admissions at the emergency department. Dr. Tan takes a trip to the ground floor to confer with the “admitter”, a hospitalist dedicated to evaluating every new patient coming in.

Harrison Medical Center which is part of the CHI Franciscan Health system has 33 beds in its emergency department and admits more than two dozen new patients a day on average. One of the key accomplishments of the hospitalist team, was to provide a smooth care pathway from the moment someone comes into the emergency department and is admitted, right through to discharge. But care management is also taking on a new meaning. As the population ages and chronic diseases become more common, planning for transitional care following discharge in the patient’s home or in a post-acute care facility has also started to play a larger role in managing a hospital’s operations and performance. It’s not unusual, reports Catherine Druce-Smith, to have five or more seniors of 90 years and older in her weekly patient census.

6:05 p.m.

The evening has snuck up on her, and Dr. Tan stops by a workstation to update her documentation, coding and billing records. As a physician who is not limited to one department, specialty or floor, she has a unique view of the entire workflow of a hospital, allowing her to drive changes in quality and performance. Keeping accurate notes and assigning diagnosis codes correctly helps hospitals perform better, since they are reimbursed depending on the proper diagnosis and performance metrics including readmission rates. More detailed and precise records mean that administrators can bill more accurately for the ailments diagnosed and care provided.

“Many outcomes look bad on paper simply because the hospital didn’t document how sick the patient really was when he or she arrived,” explains Dr. Tan. “Our job is to improve on that and make sure we accurately report the diagnosis and what care is provided for the patient throughout their stay.” The net effect, according to Sound Physicians’ founder and CEO, Dr. Robert Bessler, are shorter stays, better outcomes and optimized financial performance for Sound Physician’s hospital partners.

7:05 p.m.

Her day at Harrison Medical Center is officially over, but Dr. Tan has other duties awaiting her. She is actively involved in the local community and has for the past nine years been part of the Bremerton Community Theater. After performing as an amateur actor and designing sets, Dr. Tan is now directing plays such as “12 Angry Men”. Tonight, she has to direct the rehearsal of the annual children’s play. “Wrangling so kids to do a play together is quite some work,” she laughs as she leaves the hospital after one last look at her smartphone and a quick chat with the “swing doctor”, the hospitalist who ensures a smooth transition between the daytime team of six and the single night-shift hospitalist. But then again, Dr. Tan knows a thing or two about engaging with people and optimizing a challenging workflow.
UNDERSTANDING PATIENTS

EVERY PATIENT IS UNIQUE, WHICH IS WHY WE OFFER A RANGE OF CUSTOMIZABLE TREATMENTS.
IN ADDITION, WE TAKE ENOUGH TIME TO LISTEN TO OUR PATIENTS AND UNDERSTAND THEIR NEEDS, AS THAT IS THE ONLY WAY TO PROVIDE HIGH-QUALITY CARE.
Reyna Castro is a hemodialysis (HD) patient. The Argentinean started her first dialysis treatment back in 2000. Her blood is cleansed outside her body using a dialysis machine. It flows through a synthetic filter, the dialyzer ("artificial kidney"), and is fed back into the body after being cleansed. HD is generally performed three times a week for four hours, usually at a dialysis clinic.
PERITONEAL DIALYSIS

Pedro Monteiro has been a peritoneal dialysis (PD) patient since 2011. His life is not much different to how it was before he went on dialysis. PD takes place inside his body. Sterile dialysate is flushed through his abdominal cavity, with the peritoneum acting as the dialysis membrane. Patients mostly perform PD treatment themselves at home or at work several times a day or at night.
EXERCISE

Leonardo Berthelot had his first dialysis treatment over 15 years ago. He now does sports on a regular basis and feels the benefits: It improves his muscle strength, fitness, endurance, coordination and flexibility, while preventing imbalances in his bone metabolism and cardiovascular diseases.
enjoys cooking for her whole family. The dialysis patient knows that a healthy diet is an integral part of her treatment; the ingredients and meals have to be adapted to individual requirements. It is important that all dialysis patients get enough calories and protein, choose foods with a low phosphate, potassium and salt content and don’t drink too much.
Family Life

Gizella Laurencsik experienced her first dialysis treatment as a life-changing moment. However, she is glad to have the help and support of her husband and children. Family life often changes when a family member is chronically ill. But that doesn’t have to be a negative experience, and can actually bring the family closer together.
We treat a dialysis patient somewhere in the world every 0.7 seconds.

**Peritoneal Dialysis (PD)**

12% of dialysis patients are treated with peritoneal dialysis, which is usually performed several times a day at home or even at work.

**Hämodialyse (HD)**

88% of dialysis patients undergo hemodialysis mostly at specialized clinics. It is the most common procedure in renal replacement therapy.

**Regional Distribution of Our Dialysis Patients:**

- **North America**: 182,852
- **Europe/Middle East/Africa**: 54,857
- **Latin America**: 30,200
- **Asia-Pacific**: 26,472

**Development of the Number of Dialysis Patients Worldwide:**

- **2015**: ~2.8 M
- **2020**: ~3.8 M

**Transplantation**

In kidney transplantation, the patient is given a healthy kidney from a donor.
PREVENTION PROGRAMS CAN SLOW DOWN THE PROGRESSION OF KIDNEY DISEASE AND EASE THE TRANSITION TO DIALYSIS FOR PATIENTS.

“THERE’S NOT MUCH I CAN’T DO.”

GIZELLA LAURENCSIK
Gizella Laurencsik from Hungary has to go for dialysis three times a week. Between sessions, she relaxes surrounded by her pictures and figurines.
Dolls, figurines, portraits – Gizella Laurencsik’s living room is teeming with small artworks. The 65-year-old made them all herself. She discovered her passion for handicraft relatively late in life. “I was given a straw doll and thought, well, I could do that too,” Gizella Laurencsik recalls. She started making the small straw figurines. Once she had got the hang of it, she made dozens of them, one after another, and gave them to friends. “That was in winter 2001.”

Gizella Laurencsik is very good at remembering dates and years. After all, several of them changed her life. There was November 1970, a time of upheaval, when she and her husband moved into their small house in Karancsalja, a village in northern Hungary around an hour’s drive from Budapest. Another milestone was in 1996, when kidney disease forced her to give up work. And, of course, the dates when her two sons and four grandchildren were born.

THE JOURNEY TO DIALYSIS
The most recent date etched in Gizella Laurencsik’s memory is May 26, 2014, the day she first encountered a dialysis machine.

“I went to a part of the hospital I’d never been to before. A nurse came up to me and asked me what I was looking for. Anxiously, I told her I was a new patient. She took me to a room and showed me where to sit. Then another nurse came to explain to me what was going to happen. She was very nice, but it was strange to see my blood flowing through these lines. I could feel the heat of the blood.”

Making the decision to undergo dialysis is a life-changing moment. Like any other patient, Gizella Laurencsik was deeply apprehensive. But she was determined to be strong, and pulled herself together: “If others have managed to get through this treatment, so can I.” She had known for some time that the day was coming when her kidneys would no longer function adequately and dialysis would be inevitable. Fortunately, primary care physicians and specialists were on hand to help her and prepare her from an early stage.

“I had been going to kidney specialists for treatment for 17 years. Then I underwent a vascular access procedure to prepare me for dialysis. But I wanted to put off the treatment for as long as possible. I felt fine, and had no intoxication symptoms, until in May 2014 my blood values became increasingly critical.”

At her physician’s recommendation, Gizella Laurencsik switched to a low-protein diet before going on dialysis. However, since becoming a dialysis patient, she has to make sure she eats lots of ‘high-quality’ protein, such as that found in fish and poultry, for example.

RISK FACTORS
Various aspects are conducive to kidney disease:
– Diabetes
– Obesity
– High blood pressure
– Genetic predispositions

“A NURSE CAME UP TO ME. ANXIOUSLY, I TOLD HER I WAS A NEW PATIENT.”
A GENTLE START
Dr. Stefano Stuard believes that the transition to dialysis described by Gizella Laurenscik is ideal. The nephrologist is responsible for coordinating medical operations at Fresenius Medical Care’s dialysis clinics in Europe, the Middle East and Africa. He also oversees the programs for treatment of pre-dialysis patients. “Our aim is to ensure that patients are well prepared for a kidney transplant. This means that we need to keep them as physically stable as possible. Patients who are not sufficiently adjusted to dialysis beforehand often suffer cardiovascular complications such as congestive heart failure.” These complications are obstacles to a subsequent kidney transplant. According to Stuard, priority should be given to ensuring that patients start dialysis as late as possible, when symptoms cannot be more corrected by conservative therapy, and having a smooth transition.

To help physicians and patients focus more on this pre-dialysis period, Fresenius Medical Care also supports national programs in various countries, such as the Hungarian National Kidney Program, which has been training physicians and educating people in risk groups on the topic since 2011. Blood-testing days, health days and information events are aimed at raising awareness of the risk of kidney diseases. “It’s a wonderful program,” explains Stefano Stuard. Fresenius Medical Care supports similar activities in Poland and the Czech Republic.

EARLY DETECTION
People with the risk factors listed before should have their kidney function examined on a regular basis.

PRE-DIALYSIS
At an early stage of the disease, nephrologists can treat or prevent key complications, such as:
– Anemia
– High blood pressure
– Heart failure
LIVING WITH THE MACHINE
Gizella Laurencsik now has to undergo dialysis at the nearby clinic three times a week. She goes for treatment first thing in the morning at 6 a.m. so she can spend her afternoons walking with her husband in a nearby park and working on her handicraft.

“There’s not much I can’t do. I do the housework, water the flowers, tend the garden. It’s just that everything goes at a slower pace, everything takes longer.”

For Gizella Laurencsik, it is important to keep up her usual routine. “My life hasn’t actually changed at all,” she maintains. Her children and grandchildren don’t perceive her as being ill because she keeps so busy in the house, in the garden and in the art group that she joined ten years ago. Gizella Laurencsik obviously hopes it stays that way. “I’ve never really liked long trips,” she admits, which is partly why she finds it easy to stick to her dialysis regime. “At the moment, I’m coping well,” she says, looking around at all her small artworks.

“THERE’S NOT MUCH I CAN’T DO. IT’S JUST THAT EVERYTHING GOES AT A SLOWER PACE, EVERYTHING TAKES LONGER.”
OUR EMPLOYEES ARE OUR STRENGTH

UNDERSTANDING CONNECTIONS
OUR BUSINESS IS HIGHLY COMPLEX. WE POOL OUR EMPLOYEES’ EXPERTISE, DEDICATION, AND EXPERIENCE AND TAKE ADVANTAGE OF CROSS-CULTURAL COLLABORATION. IN OUR WORK, WE ASK THE QUESTIONS THAT ENABLE EVERYONE INVOLVED TO MOVE AHEAD.

**Physicians**
How can we ensure that therapy systems offer maximum safety and greater treatment success?

**Patients**
How can we further optimize treatment to improve our patients’ quality of life in the long-term?

**Research and Development**
Which innovations in materials and technology combined with medical advances promise the greatest benefit for patients?

**Nursing Staff**
How can we simplify the management of clinical practice to make more time for patients?

**Production and Quality Assurance**
How can we implement quality standards and design production to be as efficient as possible?

**Marketing and Sales**
How can we ensure that new therapy systems reach hospitals – and hence patients – as quickly as possible?
OUR RESEARCH AND DEVELOPMENT TEAM WORKS CLOSELY WITH EXPERTS FROM PRODUCTION—ALWAYS WITH THE SHARED GOAL OF ACHIEVING THE BEST POSSIBLE QUALITY.
GENERATING INTEREST, PROVIDING INFORMATION, PRESENTING INNOVATIONS, AND MAKING OUR PRODUCTS MORE TANGIBLE – THESE ARE THE FIRST STEPS ON THE WAY TO REACHING OUR PATIENTS.
VISIONS EVOLVE FROM KNOWLEDGE, AND FROM EXPERIENCE GATHERED CONTINUOUSLY OVER MANY YEARS. JUST AS THE INDIVIDUAL COMPONENTS OF A DIALYSIS MACHINE ARE PERFECTLY INTEGRATED, OUR 104,033 EMPLOYEES WORLDWIDE COLLABORATE CLOSELY IN ALL AREAS.

In 2015, we cared for more than 294,000 dialysis patients.

We performed around 45.1 M dialysis treatments in 2015.

Since the first series production run (in 1979), we have made more than 600,000 dialysis machines at our factories.

Since the first series production run (in 1979), we have made more than 600,000 dialysis machines at our factories.
Up to 50 employees are involved in producing a single machine.

Fresenius Medical Care accounts for more than one in every two dialysis machines.

A dialysis machine can offer up to 1.4 million different configuration options.

Dialysis machines are pre-programmed in up to 30 operating languages.

Creating a completely new therapy system requires the experience gained from millions of treatments combined with the cross-disciplinary expertise at our development and production sites.

Some 120 liters of blood flow through the tubing during treatment.

A dialysis machine consists of some 8,000 parts.

We have employees in more than 50 countries.

Our products and services are available in 120 countries.
STATE-OF-THE-ART TECHNOLOGIES ARE THE BASIS FOR OPTIMIZED, INTUITIVE WORKFLOWS AT THE HOSPITAL AND PROVIDE ADDED VALUE FOR PATIENTS.

SOFTWARE
Modern touch screens and easy-to-understand programs make it easier for medical staff to use the therapy system and minimize the risk of errors.

DATA MANAGEMENT
Digitization reduces the effort required to collect, analyze, and store treatment data and increases data quality. All treatment providers have access to historical data as well as to up-to-date patient data at any time.
Developing new products, improving dialysis treatments and hence increasing our patients’ quality of life are integral parts of our strategy.

15,350 employees worked in production and quality assurance in more than 20 countries in 2015.

$140M invested in Research and Development

649 highly qualified employees work in the area of Research and Development.

Our patent portfolio comprises 6,643 property rights in more than 1,000 patent families.

We aim: to offer our patients the best and safest dialysis products and health care services.
TURNING A VISION INTO A NEW THERAPY SYSTEM

IMPROVING QUALITY OF LIFE – THERE IS NO GREATER INCENTIVE. EXPERTS AT FRESENIUS MEDICAL CARE WORK IN INTERDISCIPLINARY TEAMS TO DEVELOP A NEW THERAPY SYSTEM FOR DIALYSIS.

STEP 1 – THE VISION
When maximum reliability is the basic requirement for a new development, progress can become a highly complex task. This applies particularly to medical products. How can we develop a therapy system that enables advanced treatment while further minimizing the risks involved, enhancing ease of use and increasing effectiveness – a system whose collective benefits constitute a major step forwards? By reducing the complexity of the system.

By working together to achieve the best possible solution, using an interdisciplinary approach, with theoretical and practical knowledge, and with experts from the areas of research, development and clinical practice. Product developers and managers, designers, process engineers and material scientists work closely with specialists from the sharp end of dialysis to advance the development of a system that improves treatment for patients – and makes the job of nursing staff and physicians considerably easier.

“The benefits for patients are always initially at the center of any new development.”

MARTIN LAUER
Product Developer in Research and Development
STEP 2 – DEVELOPMENT

Which advancements deliver what benefits? How can we achieve even greater treatment quality and safety for our patients? Are there other ways to improve treatment, for instance by making it easier for clinic staff to use the therapy system? At the start of the development phase, the team has to deal with a wide range of challenges and objectives. The priorities only become apparent later on: In what areas will the new system create the greatest impact? Where is there still scope for technical advances in a system that is already highly developed? Empirical values are used in Research and Development:

In most dialysis clinics, patients are treated from early in the morning until late at night, six days a week. Fresenius Medical Care experts responsible for training and for applying the Company’s therapy systems are in constant dialog with physicians, nursing staff, and patients. They pass on feedback from clinical practice to Research and Development. A vision for a new system gradually becomes reality.

“Faster, easier, safer: We have high expectations in terms of the intelligence of a new machine.”

DR. THEOHARIS TSOBANELIS
Medical Director of the Center for Renal Diseases and Hypertension (CfNH) in Frankfurt/Main, Germany
STEP 3 – OPTIMIZATION

The team pays attention to detail from the inner workings of the therapy system to the design of the interface: Greater flexibility in the day-to-day running of the clinic can only be achieved if dialysis treatment runs smoothly. That leaves more time for patients. “Maximum effective treatment time, intuitive handling, fewer components – these are just some of our main aims,” says Dr. Joachim Noack, Technical Project Manager at Fresenius Medical Care.

In the optimization phase, the last remaining weak points are identified, processes are finely honed, and feedback from users’ practical experience is implemented. It is a combination of planning at the desk, work in the research laboratory, the workshop and the clinic. Physicians and researchers meet application consultants, designers, material scientists, process developers, and experts for approval processes. During clinical testing, the system goes through several stages to verify aspects such as its performance. The product is only put into operation in selected clinics once the prototype is as safe as a standard product and has been officially approved.

“The greatest opportunities lie in optimizing the way the system is handled: Less complex operation means more time for patients.”

DR. JOACHIM NOACK
Technical Project Manager for Research and Development
STEP 4 – IMPLEMENTATION
The new therapy system is a major step forward: Fewer procedures, less preparation, easier operation and reduced risks. As a result, nursing staff spend less time on the machine and even more with patients. The self-contained complete system reduces manual contact with the components of the therapy system, thus minimizing the risk of infection. Treatment is simplified considerably. What’s more, this is measurable. Even before its official launch, more than 100,000 treatments were performed with the new system at selected clinics. The results were positive in several respects, both for patients and nursing staff: It simplifies handling, improves monitoring, and increases safety. Even during dialysis, different treatment methods and their associated requirements can be easily adapted to the patient’s changed needs via a touch screen. The system meets high ergonomic standards, enables intuitive operation and has a clear and modern design. “Innovations are extremely important from a clinical perspective,” says Dr. Theoharis Tsobanelis, Medical Director at the Center for Renal Diseases and Hypertension (CfNH) in Frankfurt/Main. “Even if there is little chance of shortening individual dialysis treatment, improvements in the range of treatments and handling of the equipment are essential. We welcome the extra safety, tranquility and effectiveness that the system grants our patients.” The vision has become reality – the new therapy system is ready to use.

“Our experience with the new therapy system has shown:
It grants our patients extra safety, tranquility and effectiveness.”

DR. THEOHARIS TSOBANELIS
Medical Director of the Center for Renal Diseases and Hypertension (CfNH) in Frankfurt/Main
WE WOULDN’T LIKE TO THANK OUR PATIENTS AND PARTNERS FOR THEIR CONFIDENCE IN OUR COMPANY AND OUR EMPLOYEES FOR THEIR DEDICATION AND COMMITMENTS IN THE PAST YEAR.

THANK YOU
The paper used for the Annual Report 2015 has been produced in accordance with the international FSC® standard, meaning, the pulp has been produced from sustainably managed forests. Furthermore, the Annual Report has been produced in a carbon-neutral manner. The CO₂ emissions caused by its production were compensated for by certified climate protection projects.