



# TOGETHER AHEAD.

MAGAZINE  
2021

# 25 TOGETHER AHEAD FOR THE NEXT 25 YEARS.

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**HAPPY ANNIVERSARY, FRESENIUS MEDICAL CARE!**

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## Our patients are our reason for being.

In 2021, we celebrated our 25th anniversary as the world's leading provider of products and services for people with renal diseases - a quarter century of creating a future worth living for our patients.

An anniversary is an occasion to look back and ahead to the future. Since Fresenius Medical Care was founded in 1996, our aim has been to improve our patients' quality of life by offering them high-quality products as well as innovative technologies and therapies. The aim of our Strategy 2025 is to make this vision reality and to continue being the care partner of choice for our patients in the future.

2021 and the COVID-19 pandemic reminded us once again of the vulnerable patient population we serve. This extraordinary situation also showed the commitment of our employees to our patients.

Not all products or services portrayed in this magazine are cleared or available for sale in all countries.

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# WHO WE ARE

As the world's leading provider of dialysis products and services, we aim to create a future worth living for chronically and critically ill patients - worldwide and every day. In 2021, Fresenius Medical Care celebrated its 25th anniversary. To mark this important milestone, we take a look back to 1996, the year in which Fresenius Medical Care was founded.

Our achievements since then speak for themselves: 25 years of steady growth lie behind us. In the past year alone, we cared for more than 345,000 dialysis patients. With around 123,000 employees today, we intend to grow further and continue to use our experience, innovative research and value-based care approach to provide the best possible care for our patients.



**COUNTRIES**  
WITH  
FRESENIUS MEDICAL CARE  
EMPLOYEES



**25**  
1996

**66**  
2021

## PATIENTS



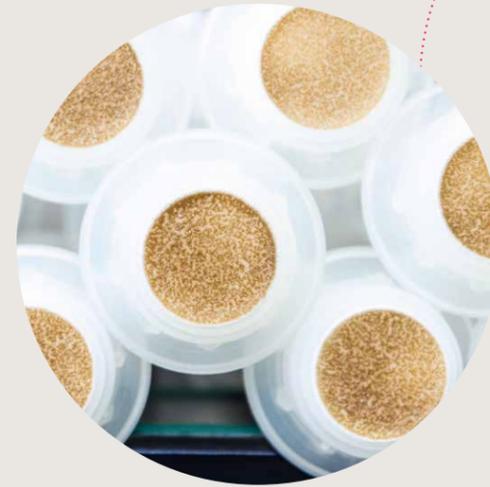
**>56,000**  
1996

**>345,000**  
2021

## TREATMENTS

**~8 M**  
1996

**~53 M**  
2021



## PRODUCED DIALYZERS

**~13 M**  
1996

**>161 M**  
2021



PRODUCED  
**HEMODIALYSIS  
MACHINES**  
**>11,000**  
1996  
**~49,000**  
2021

## DIALYSIS CENTERS



**>770**  
1996

**>4,100**  
2021

## REVENUE

**€2.35 BN**  
1996\*

**€17.62 BN**  
2021

## EMPLOYEES (FULL-TIME EQUIVALENTS)



**~26,000**  
1996

**~123,000**  
2021

\* U.S. GAAP, on a pro forma basis.



# TOGETHER AHEAD FOR THE NEXT 25 YEARS.

## Sharing one vision to improve patients' quality of life around the world.

We explore the past, present and future of renal care from three perspectives, and show how Fresenius Medical Care is positioning itself to continue shaping the future of health care.



We are at our best when we work as one company with our shared purpose to create a future worth living for our patients, worldwide, every day. Together, we can demonstrate what health care can accomplish."

RICE POWELL,  
CEO AND CHAIRMAN OF  
THE MANAGEMENT  
BOARD



Caring for dialysis patients and giving them a future worth living has always been at the heart of everything that Fresenius Medical Care does. This ranges from groundbreaking research and development efforts, to sustainable solutions with innovative products and services, right up to how caregivers and physicians serve patients in dialysis centers and at home.

Renal care has come a long way in the last 25 years. Its progress is marked by technical milestones and a growing number of saved lives. We asked three people - a long-time dialysis patient, a frontline employee, and the Company's CEO - to share their unique thoughts on our past accomplishments and future challenges. Their perspectives illustrate that Fresenius Medical Care has always embraced change and will use its Strategy 2025 and its FME25 program to make the Company even more agile, proactive and, at the same time, more sustainable. The overarching aim is to continue shaping the future of renal care with creativity, compassion, and integrity.



1996

Fresenius Medical Care is founded from a merger of Fresenius Worldwide Dialysis and National Medical Care. The Company's shares are listed at the stock exchanges in Frankfurt and New York.



1999

The 100,000th dialysis machine comes off the production line. Fresenius Medical Care's ordinary share is admitted to the DAX, Germany's blue-chip share index.



2003

The Advanced Renal Education Program (AREP) was launched in the U.S. to assist nephrologists and professional dialysis staff in improving clinical outcomes and standards of practice.



2005

The new dialysis therapy system 5008 is launched on the market and wins the "Innovationspreis der Deutschen Wirtschaft" award.



2012

Fresenius Medical Care produces the 500,000th dialysis machine.



2014

A new generation of home dialysis cyclers is launched - *sleep\*safe harmony* - enabling most individualized treatment options with adapted APD (aAPD) therapy.

**Susanne Williams** was just 14 years old when her kidneys started to fail. The Australian has lived with dialysis for more than 50 years now. "In the 1950s, dialysis was still in its infancy and we only had four machines in South Australia," Williams recalls. The Adelaide resident first visited a clinic before transitioning to home care and then returned to in-center treatment, taking advantage of every technological innovation available to lead her life to the fullest.

"Home dialysis was the best thing that could have happened to me, because I was able to live a proper life and even work, running my own business with my mother," Williams recalls her patient journey. She switched careers from being a party planner to becoming a radio host and producer, and along the way met Roger, her late husband.

If there are two things she would like to change about her well-honed dialysis routine, they are first, the flexibility to travel more and explore more places around the world, she admits. Second, she wishes for more person-to-person interaction while undergoing treatment, whether it is at home or at a clinic.



**Home dialysis was the best thing that could have happened to me, because I was able to live a proper life and even work, running my own business with my mother."**

SUSANNE WILLIAMS,  
DIALYSIS PATIENT



2016

Launch of the 6008 CAREsystem, a hemodialysis therapy system that delivers advanced dialysis therapy more easily, leaving more time for direct patient care.



2018

Fresenius Medical Care and Humacyte, Inc. - a medical research, discovery, and development company focused on regenerative medicine - announced a strategic global partnership.

"We rely on the staff's generosity and their ability to create a happy atmosphere. Perhaps there will be some technology in the future that can provide that experience at home, too. The brains at Fresenius Medical Care have to come up with that," Williams says with a smile that can only be an encouragement to those working on new ways to keep patients and caregivers connected.



**When I get up in the morning, I am aware that everything I do during the day has the objective of providing our patients with the best possible treatment."**

THOMAS TIEFENHOFF,  
SALES REPRESENTATIVE  
CRITICAL CARE



**Thomas Tiefenhoff**, a former nurse who joined Fresenius Medical Care as a junior product manager 25 years ago, can relate to the importance the Company attaches to making every patient feel welcome and cared for. "In everything we do, the focus is always on the patient. Even as a product manager, it's crucial to be aware of the bigger picture. When you're shipping an order, you always need to know that there's a person behind that order, somebody who relies on us," Tiefenhoff says. He now works as a sales representative for Critical Care Therapies at Fresenius Medical Care.

It is this type of personal commitment that has kept him going for 25 years, from working in patient care and dialysis to marketing and project management for single-use bloodline products. "I'm not in direct contact with patients anymore, but I always keep in mind that products are opened and used at their bedside. When I get up in the morning, I am aware that everything I do during the day has the objective of providing our patients with the best possible treatment," Tiefenhoff adds. "My customers are part of my daily life, and I truly want them to grow old with us. That's the promise that will drive this company forward into a successful future."

As CEO of Fresenius Medical Care, **Rice Powell** wants all employees to embrace this long-term vision. "We are at our best when we work as one company with our shared purpose to create a future worth living for our patients, worldwide, every day. Together, we can demonstrate what health care can accomplish," he says.

This is also reflected in the goals of the Company's Strategy 2025. The aim is to sustainably shape the rapidly unfolding transformation in health care, driven by technology, connected telemedicine and the advent of more personalized therapies that are tailored to each patient. This roadmap for the future is bolstered by the FME25 program, an all-out effort to take our value creation to the next level and make the Company fit for the future. "In the course of this program, I have already seen great commitment to making Fresenius Medical Care more agile by leveraging our expertise, accelerating innovation and further optimizing capital allocation," Powell explains.

The Company will consolidate its operations into two global segments structured along the relevant future value drivers - Care



2019

By acquiring NxStage Medical, Inc., Fresenius Medical Care expands its product portfolio with a technology for home hemodialysis offering patients greater flexibility.



2020

Launch of the Global Sustainability Program that will enable us to further drive the integration of sustainability into our business over the next years.

Production of the two-billionth dialyzer - just seven years after the production of the one-billionth.



2021

Fresenius Medical Care launches a new dialyzer FX CorAL that combines clinical performance with hemocompatibility for patient-centered dialysis.

Enablement and Care Delivery. Care Enablement encompasses the health care products business, while Care Delivery comprises the global health care services business. "Our new global operating model is deeply rooted in our longstanding vision to improve the quality of outcomes for our patients," says Powell. It is designed to further leverage the advantages of the Company's vertical integration.

This transformation is about a fundamental change in thinking and doing business that will create a new culture and mindset to better seize future opportunities. "If we want to be in the best position to continue delivering on our purpose to create a future worth living for our patients, we need to start by being open-minded and willing to change, myself included," Powell explains. "It's about being open to learning not just from within our company, but also beyond."

Equally important on this journey to change is the Company's commitment to integrity in every aspect of day-to-day activities. Our culture of integrity is built on solid foundations. At Fresenius Medical Care, our global values and our Code of Ethics and Business Conduct provide the inspiration and guidance to make this possible.

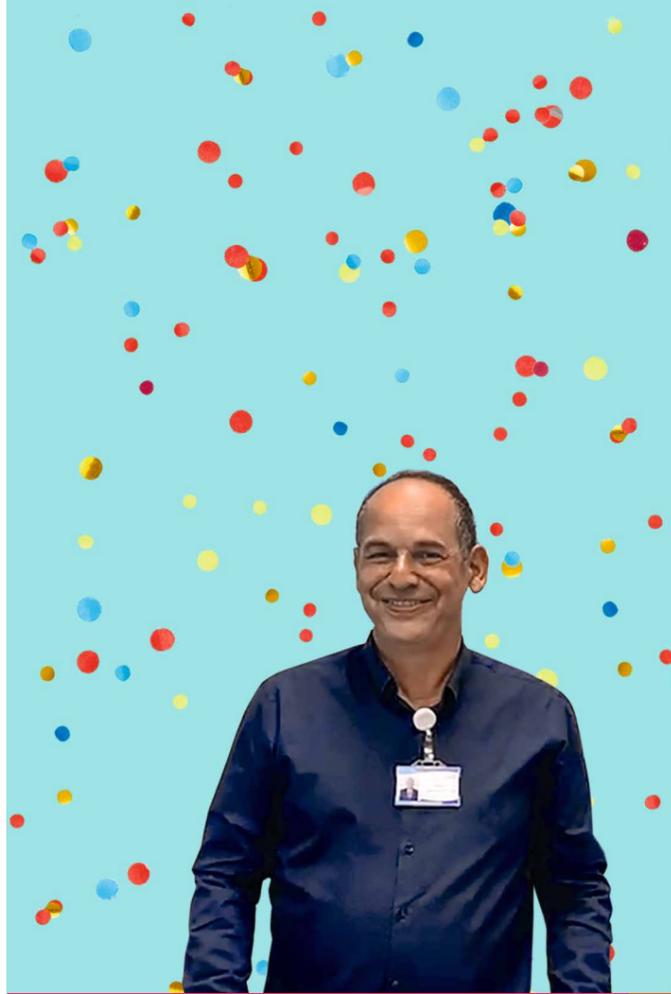
Powell considers integrity to be the key ingredient of trust: "Doing the right thing is at the core of why our patients, business partners and stakeholders, including our employees, trust in our company. However, trust does not come by itself: We have to keep working at it. Each and every day gives us an opportunity to be accountable and live our global values."



**Our new global operating model is deeply rooted in our longstanding vision to improve the quality of outcomes for our patients."**

RICE POWELL,  
CEO AND CHAIRMAN OF  
THE MANAGEMENT BOARD





Happy birthday, Fresenius Medical Care, on our 25th anniversary! It is a great privilege for me to be part of a company that not only cares for the quality of treatment we give our patients, but also for their quality of life. I hope that we will continue to give our patients a better future everywhere and every day."

ALON ANTEBI  
ISRAEL



Happy birthday, Fresenius Medical Care! Love from Fresenius Medical Care China. The signs on my left mean: Together Ahead!"

ALAN CHEN  
CHINA

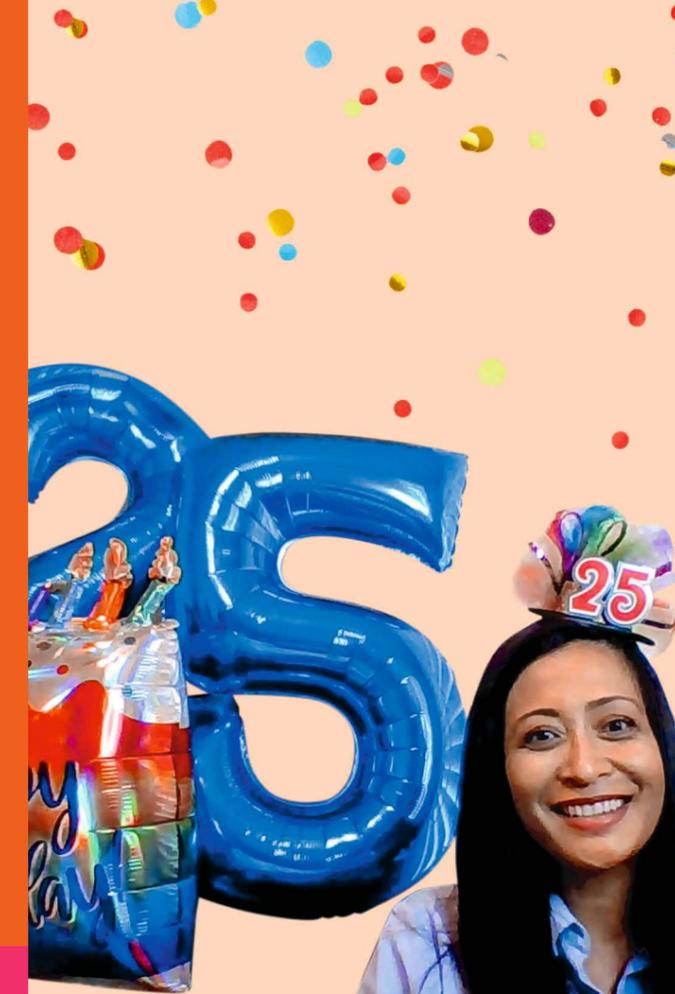


同成长 共费凡



A very happy birthday! I have been part of this organization for 16 years now, and I could not be more proud to be a part of this celebration. Here's to 25 years of great accomplishments and success in taking care of our patients, our staff, and our partners. My dad was one of our patients and I experienced first-hand how well we look after them. I am looking forward to seeing what we can accomplish together in the next 25 years. Together Ahead!"

VEDAMAY BRADFORD  
USA



Greetings from the Oral NephroCare clinic in Kazakhstan. On Fresenius Medical Care's 25th anniversary, we wish all the best for every single year: "Together Ahead"! We are grateful to be part of Fresenius Medical Care and wish us all another 25 years of success. Happy birthday!"

NURSULU BIZHANOVA,  
AINUR SARSENBAEVA,  
YERIK KARAULOV,  
VENERA UAHITOVA,  
LARISSA IBRASHEVA  
KAZAKHSTAN



I am proud to belong to a company that has been working for 25 years, every day, for a future worth living. Happy birthday, Fresenius Medical Care!”

VIVIANE LOSSO  
BRASIL



Happy birthday, Fresenius Medical Care! Here’s to the next 25. Together Ahead!”

PAULA HONNIBAL  
AUSTRALIA



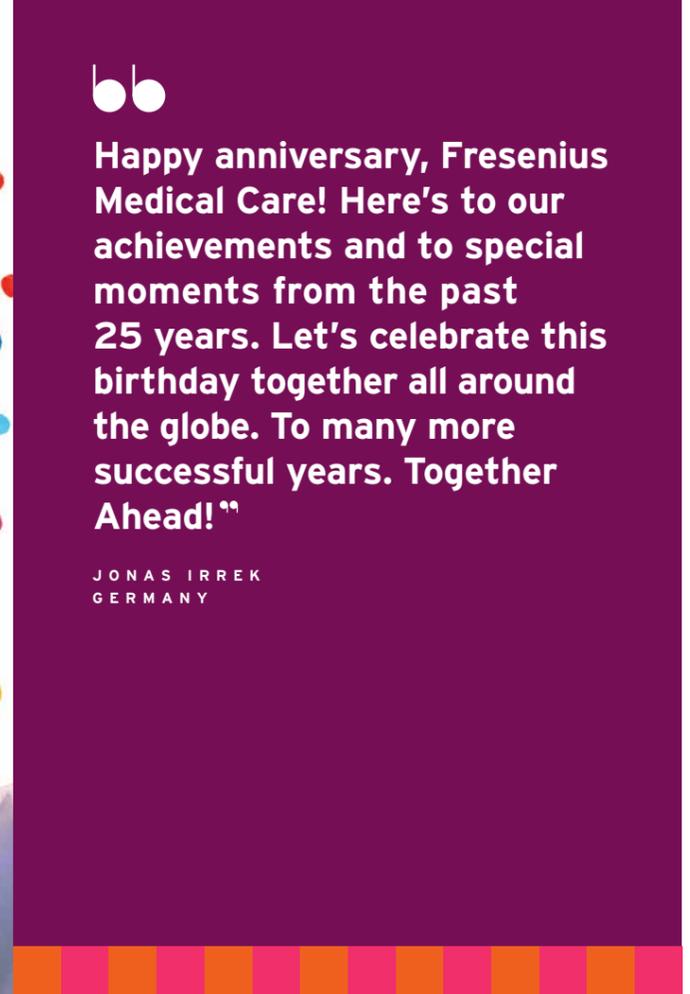
I am so happy to be celebrating our 25th anniversary. I have been working for this great company for almost two years, and I feel so happy and proud to be a part of this great family. Fresenius Medical Care has given me a lot of satisfaction and the opportunity to learn and meet great friends and colleagues. Let’s celebrate together!”

ANA MARIA TRUJILLO  
COLOMBIA



Happy anniversary, Fresenius Medical Care! Here’s to our achievements and to special moments from the past 25 years. Let’s celebrate this birthday together all around the globe. To many more successful years. Together Ahead!”

JONAS IRREK  
GERMANY



# 2021 IN A NUTSHELL

At Fresenius Medical Care, the year 2021 continued to be marked by the fight against the pandemic. Read here to find out what else the Company was involved in.

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## SUPPORTING EDUCATION FOR HEALTH CARE PROFESSIONALS IN KOREA

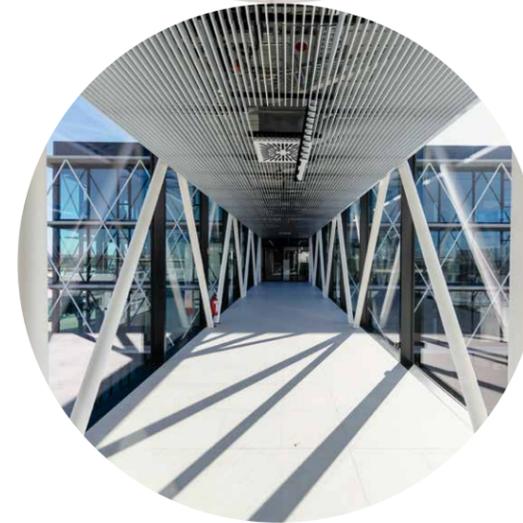
In June, Fresenius Medical Care announced the grand opening of its first training center in Korea, where the Company offers comprehensive education programs and shares its knowledge and experience in renal care, critical care, and treatment strategies with health care professionals. The training programs and other events held at the center help strengthen collective knowledge within the industry and unleash potential for improvements in patient care.



YEQUIDO,  
SEOUL

## CREATING AN INCLUSIVE AND DIVERSE WORKING ENVIRONMENT

To mark International Women's Day on March 8, Fresenius Medical Care Asia-Pacific hosted a region-wide virtual event to officially launch its Women's Leadership Initiative - a working group of 14 women leaders from across the Company's Asia-Pacific offices and business areas. The initiative is committed to creating an even more inclusive and diverse organization, where people's careers thrive and achievements are celebrated. Fresenius Medical Care wants to identify ways to further improve women's leadership development with a particular focus on building the pipeline of female talent and encouraging a culture of inclusion.



## NEW TECHNOLOGY CENTER IN SCHWEINFURT

In April, Fresenius Medical Care opened a new technology center for the development of dialysis machines at its Schweinfurt plant in Germany. In the building with approximately 7,500 square meters spread over five floors, some 220 employees from different departments will work together on projects. "With short, direct access ways and corridors and an open structure, the entire building is designed for networking and exchanges between different disciplines and teams," said Johann Brede, Project Director at the technology center.

## EXPANDING CRITICAL CARE SERVICES

Fresenius Medical Care started to offer the Seraph 100 Microbind Affinity Blood Filter by ExThera Medical Corporation in several European countries with the aim of expanding its range of services in the field of critical care solutions, one of the key areas of the Company's Strategy 2025. The Seraph 100 adsorber can be operated with Fresenius Medical Care acute dialysis machines. Similar to the dialysis process, the blood is purified by pumping it through the filter.



© UNICEFUN0463465  
Viet NamTruong Viet Hung

## DONATION OF 250,000 EUROS TO UNICEF

To mark its 25th anniversary, Fresenius Medical Care has donated 250,000 euros to UNICEF, the United Nations Children's Fund. The money went toward protecting the health of children in less developed and developing countries and supporting the COVAX vaccination initiative to ensure global equitable access to COVID-19 vaccines and fight the pandemic in more than 140 countries. Through COVAX, UNICEF is working with manufacturers and partners on the procurement of COVID-19 vaccine doses. Thanks to this donation, UNICEF is able, for example, to support the protection of almost 70,000 teachers or medical personnel against COVID-19, which also helps keep children healthy.



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## FRESENIUS MEDICAL CARE AT TIMES SQUARE

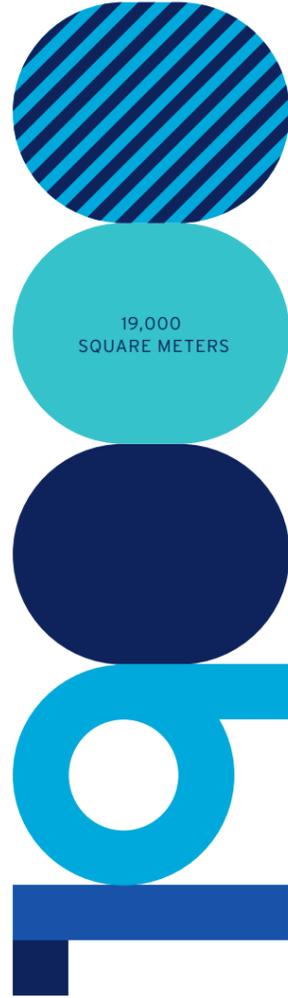
It is an image that will linger in the memory: On the occasion of its 25th anniversary, Fresenius Medical Care was showcased on the world-famous billboards in Times Square in New York City - one of the most visited tourist attractions in the world.



## TOGETHER AGAINST COVID-19

In 2021, the COVID-19 pandemic continued to take its toll on health care systems around the world. People with advanced kidney disease are recognized as one of the most vulnerable patient populations. Our priority was to ensure that our patients and caregivers were vaccinated as soon as possible.

As we routinely provide other vaccinations in our dialysis centers, we offered our infrastructure and medical expertise for COVID-19 vaccinations. This enabled us to make an important contribution to speeding up the vaccination campaign, for example in the U.S., Portugal and Germany. To date, more than 80 % of our patients have received at least one vaccination.



## NEW LABORATORY IN MISSISSIPPI

Fresenius Medical Care North America opened a new laboratory in Mississippi, USA. Covering an area of 19,000 square meters, it is the Company's largest facility of this kind. At the new building, employees can conduct comprehensive testing, analysis and reporting to guarantee the best possible outcomes for patients.



## MAKING TRANSPLANTS SAFER AND MORE WIDELY AVAILABLE



DR. BENJAMIN HIPPEN  
HEAD OF TRANSPLANTATION  
MEDICINE

As part of its holistic approach to renal care, Fresenius Medical Care wants to play an active role in the field of kidney transplantation. Dr. Benjamin Hippen is Head of Transplantation Medicine at Fresenius Medical Care. In this newly created role, the distinguished general and transplant nephrologist will lead and speed up global efforts to facilitate access to safe transplants.

### Dr. Hippen, how important is the issue of transplantation to Fresenius Medical Care?

DR. HIPPEN: In its Strategy 2025, Fresenius Medical Care has committed to providing comprehensive care for patient groups across the entire spectrum of kidney disease. This also includes transplantation, which is undoubtedly the best type of therapy for many patients.

### What can the Company do for these patients?

DR. HIPPEN: Fresenius Medical Care pursues a multi-faceted approach in this respect. This includes focusing on patient care in all phases of kidney disease, before and after transplantation, as well as developing strategies and technologies to make more kidneys available for transplants.

### So it is about new care approaches for transplant patients, for instance?

DR. HIPPEN: I would like to see patients receive continuous, multidisciplinary support regardless of whether they are on dialysis, have had a transplant or are in a transitional phase. We need to break down barriers and develop new services here to improve patients' quality of life.

### Do you see further potential for innovations in medical technology?

DR. HIPPEN: Absolutely! For instance, research into new technologies for organ preservation and regeneration is very promising. One of our clearly defined tasks is to make kidney transplants safer and more widely available, while also extending transplant survival and, by extension, the longevity of our patients.

FX CorAL's Helixone *hydro* membrane forms a hydrolayer on the inner membrane surface for reduced protein adsorption.

# NEW MEMBRANE

A dialysis membrane ideally offers both strong clinical performance and high tolerability, in order to contribute to achieving desired patient outcomes while reducing undesired side effects of dialysis.

The new FX CorAL dialyzer developed by Fresenius Medical Care combines clinical performance with hemocompatibility (blood compatibility), both important factors in patient-centered dialysis.

A membrane with a low immune response and high selective permeability

The efficient removal of uremic toxins and surplus water and a high degree of hemocompatibility should be taken into account in dialyzer selection.



The pores in the walls of fibers bundled in a dialyzer are microscopic. Yet something important happens here: During hemodialysis, the patient's blood flows through the hollow fibers, where it comes into contact with the semi-permeable dialysis membrane and counter-exchanges with a special solution called the dialysate. The properties of this semi-permeable dialysis membrane are highly critical because they allow toxins, urea, and other small particles to pass through. As a result, the body is partially cleansed from its toxic environment.

This process helps to keep people with chronic kidney failure alive. However, dialysis is not a therapy without problems and patients typically experience chronic inflammatory reactions due to the build-up of toxins and the contact between the blood and foreign materials. "The immune defense in the blood reacts to contact with foreign materials such as a membrane. There's nothing unusual about that," says James Kennedy, Director Dialyzer Product Development at Fresenius Medical Care. "That's why our work on enhancing the dialyzers is aimed at addressing their hemocompatibility as well as their clinical performance."

FX CorAL's Helixone *hydro* membrane forms a hydrolayer on the inner membrane surface. This reduces protein adsorption, resulting in a membrane with a low immune response and high selective permeability. "In building the

\*FX CorAL is cleared and available in selected EU countries only.

hydrolayer, the innovative Helixone *hydro* membrane aims at mimicking the blood's natural environment," says Kennedy.

The hydrolayer strives to reduce the accumulation of complement proteins on the inner surface of the membrane - a sign of improved hemocompatibility. "Certain complement proteins are part of the immune system, and they react to foreign surfaces, but not to water," adds Kennedy.

After receiving the CE mark, the FX CorAL was introduced in selected NephroCare clinics in Europe and has since been used in more than three million treatments. In developing FX CorAL, the focus was on clinical performance and hemocompatibility, because these two factors belong together in patient-centered dialysis. For Fresenius Medical Care, patient-centered dialysis means patient well-being and treatment outcomes on the dialysis day and over time.\*



The new FX CorAL dialyzer combines clinical performance with hemocompatibility, as these two factors are key to patient-centered dialysis.



The new membrane with the hydrolayer combines clinical performance with hemocompatibility."

JAMES KENNEDY,  
DIRECTOR DIALYZER  
PRODUCT DEVELOPMENT

# VIRTUAL.



# REALLY?

**Virtual reality (VR) has been used in training for doctors and nurses for a number of years now. Our VR-based training for Continuous Ambulatory Peritoneal Dialysis (CAPD) goes one step further: Not only is it suitable for clinical staff, it can also be used by clinics to educate their CAPD patients.**



In home dialysis, patients perform most of their own treatment at home, only going regularly to their dialysis center to check that things are as they should be. This means good training is especially important for home dialysis patients. As Continuous Ambulatory Peritoneal Dialysis (CAPD) uses the peritoneum as the dialysis membrane, patients can perform this form of treatment largely by themselves at home or at their workplace, allowing them to maintain a high quality of life in spite of chronic kidney failure. At the dialysis center or clinic, the patient and trainer spend several days practicing how to use the dialysis equipment, and the patient learns about hygiene measures and the steps to be taken before and after treatment.

This in-person CAPD training has now been supplemented by virtual training. It can simulate any environment, such as a living room. The patient uses a controller to interact with the virtual environment and perform tasks like preparing the simulated treatment room - including cleaning the table with a disinfectant wipe, picking up and putting down objects like the dialysis bag and disinfection cap, and adjusting the dialysis machine.

Images are combined with language and interactive elements to make VR training especially appealing and realistic. It guides patients through every step of peritoneal dialysis treatment using the *stay•safe* system, including changing the bag and using the *stay•safe* DISC.



1

The trainer explains the functions of the VR headset. There are four languages to choose from.



2

The VR headset can be adjusted in width for a comfortable and secure fit. The cushioned rim of the headset provides further wearing comfort.



3

The trainer explains the control buttons.

Patients can carry out the individual training modules at their own pace and repeat them as often as needed until they have mastered them to supplement the lessons learned with the trainer. The training is available in several languages so that more patients can learn in their native language. The aim of *stay•safe* MyTraining VR is to expand the range of training opportunities for home treatment and help patients enjoy a successful start to home dialysis. Currently, the *stay•safe* MyTraining VR is only available in Germany, but a rollout to other countries is planned for 2022.



4

The trainer helps the patient put on the VR headset and makes sure it is secure. An adjustable strap ensures a good fit.



5

A sturdy chair with space around it to move is important to perform the individual exercise steps correctly.



9

After a short briefing, the patient requires less close supervision. The trainer can follow the virtual training session on the computer.



7

An overview chart helps the patient to know what stage of the program they are currently at. The different sections can be repeated as often as needed.



8

The equipment for peritoneal dialysis treatment is ready - including disinfectant, dialysis bag and infusion stand.



10

It is important to communicate closely with the patient to ensure that they feel confident with this type of training and can put what they have learned into practice.

## CONVENTIONAL TRAINING



The patient wears an exercise backpack that mimics the abdomen.



A bag with dialysis fluid is prepared. The bag is suspended so that the fluid can run into the exercise backpack, before it is discharged again.



The trainer explains the tubing system and the *stay-safe* DISC, which regulates the inflow and outflow of dialysis fluid.

*stay-safe* MyTraining VR and the VR glasses themselves are not medical devices. They were created to supplement Continuous Ambulatory Peritoneal Dialysis (CAPD) training. This virtual training demonstrates the use of the *stay-safe* system. The *stay-safe* system for CAPD treatment contains the DISC and PIN safety features as well as the necessary peritoneal dialysis (PD) fluids.

# JOINING FORCES FOR A BETTER FUTURE

Over the past 25 years, not only has our company grown, but also our commitment to sustainability. It began as local initiatives and has evolved into a global program that promotes company-wide collaboration. Aligning global standards and embedding sustainable change across the Company requires teamwork. We are driven by our mission to provide the best possible care, while contributing positively to society and the environment.

78%

of our patients would highly recommend our services. Listening to and learning from our patients is key to providing high-quality care.

More than 2,000

improvements were made to our dialysis machines, dialyzers, and solution products in 2021. We constantly analyze and improve our product offerings with our patients in mind.

More than 100

environmental initiatives were reported at our production sites in 2021. We give priority to saving energy and water, recycling, and cutting emissions.



**JESSECA DAVIS**  
REGISTERED NURSE IN LEHIGH VALLEY,  
PENNSYLVANIA, USA

### What inspired you to suggest a waste reduction initiative at your dialysis clinic?

My parents raised me to be environmentally conscious, and I do my best to not generate unnecessary waste in my home. At work, I noticed that we were using 30 to 50 single-use plastic medicine cups every day to hand out capsules and gel caps - that added up to about 15,000 cups a year! I thought, 'This just doesn't make sense. We don't need plastic when paper would work just as well.'

### What did you do?

With support from my management team, I suggested we switch to paper cups. And we did! Other clinics followed our lead, and now, paper medicine cups are the new standard at all of our U.S. dialysis clinics. This is a really important change. It will help us save more than 31 million plastic cups from landfills every year.

### Do you have tips for other employees?

Don't be afraid to speak up! By working together, we can all contribute to reducing our environmental impact while continuing to provide stellar care to our patients.

## SMART STEPS - STEADY PROGRESS



When it comes to reducing our environmental footprint, every effort counts. At our production sites around the globe, our employees collaborate on initiatives like Green & Lean to analyze and minimize our impact on the environment. These joint efforts produce results: In 2021, we prevented around 5,500 tons of carbon emissions and recycled or reused roughly 700 tons of waste thanks to Green & Lean.

## PARTNERSHIPS FOR ACCESSIBLE HEALTH CARE

Improving access to high-quality health care and services for a greater number of patients also calls for collaboration. We have engaged in over 60 key partnerships with academia, research institutes, and other companies. They are committed to providing research and education about kidney disease and prevention, as well as to improving the choice of treatments and outcomes for patients.



# A SPACE FOR NEW IDEAS



Fostering creativity, developing new ideas, and bringing innovations to the market - that is what the new Innovation Lab at Fresenius Medical Care has been designed for. On 300 square meters of space, developers can take time out from their day-to-day activities, form working groups, or test out new technologies.

# Innovation Lab



STEFAN HERZ,  
DIRECTOR INNOVATION  
MANAGEMENT

bb  
The Innovation Lab is designed to reflect the prevailing spirit of optimism at Fresenius Medical Care: We have brilliant ideas and excellent products.



# D

Dialysis machines are complex and take years to develop and refine. Specialists from various disciplines come together to create the next generation of machines that will help to improve patients' health and quality of life even further. Plans need to be drawn up, specifications written, and all activities combined before a finished product can roll off the production line at a given date.

At the new Technology Center in Schweinfurt, more than 220 specialists work together to share their most important assets: their knowledge and creativity. To harness and incorporate this potential as well as possible, Fresenius Medical Care opened the first facility of its kind in October 2021: an Innovation Lab with space for developing, discussing, and testing ideas.

## Creativity space and test lab

Upholding its role as market leader and a technology and innovation pioneer is a challenge that Fresenius Medical Care embraces every day. However, as innovation manager Stefan Herz has learned, "Sometimes ideas fail because of mundane obstacles - like a lack of facilities for testing." Barriers like these will now be a thing of the past. The Innovation Lab is rolling out the red carpet for creative ideas.

It provides a large space away from day-to-day business for developing new concepts, forming temporary working groups, and discussing and trying out innovative approaches.

The Innovation Lab comprises four areas: the Creativity Space, the Digital Lab, the Machine Lab, and an office that accompanies and supports projects. The centerpiece is undoubtedly the Creativity Space - a place for new ideas, events, and workshops.

"We were fortunate enough to find room in a hall on the Company's premises for the Creativity Space," says Herz, who has been with Fresenius Medical Care for a year now and was put in charge of the Innovation Lab. The Innovation Lab is located outside the actual Technology Center building but right next to the Production & Service Equipment department, which boasts technologies such as 3D prototype printing. Both aspects are equally important. After all, being physically distanced from your own desk and day-to-day work with its schedules, routines, and administrative tasks promotes creativity. "It simply makes a difference whether you sit down together in the usual meeting room or in another, fresher environment," Herz adds.

And the latter is exactly what the Creativity Space is designed to be. Technical ideas that have been developed in the Creativity Space then go next door to the Digital Lab, where they are tested to see whether they have potential. The specialists here have all the possibilities of modern simulation software at their fingertips to evaluate concepts. Promising technical ideas are subsequently implemented and tried out in the Machine Lab. The office team not only coordinates the activities of the Innovation Lab, but also actively supports

**300 m<sup>2</sup>**  
open space



**220**  
specialists



ideas, for example by hosting workshops, through knowledge transfer with internal and external experts, stakeholder management, and budgeting.

**Organic design**

The Creativity Space is an open area with clean lines and bright colors that contrast with natural wood elements. "What we have created is a simple and organic working environment," Herz explains.

The Innovation Lab is designed to be an inspirational conceptual space, with few distractions. At the same time, it offers the necessary technical infrastructure as well as "working boxes" where small groups can work on their projects.

**High expectations**

Employees had high expectations of the Innovation Lab, even before it opened. "All of our developers love being creative and innovative and could not wait to work in the Innovation Lab," says Herz. He also has to deal with the question of how to take creatives away from their day-to-day responsibilities for a while.



**All of our developers love being creative and innovative and could not wait to work in the Innovation Lab.**



**STEFAN HERZ,  
DIRECTOR INNOVATION  
MANAGEMENT**

"We want to make sure that people are actually released from their duties when they are involved in a promising project."

The innovative facility comes at just the right time as Fresenius Medical Care has some exciting products in the pipeline that can benefit directly from creative new ideas. Identifying what potential can already be leveraged to develop products is essential for the success of innovative and sustainable products.

"Before we actually start developing a product, it is important that we discuss what ideas have been developed that might contribute to it, however unusual they may be," says Herz. In other words, this calls for a better overview, more transparency, and more courage to formulate ideas, even if they might sound crazy at first. And that is exactly what the Innovation Lab is for.

**What does innovation mean to you?**

**HERZ:**

Developing innovative technologies is indispensable if we want to help patients and offer them even better treatment in the future. But innovation is more than just good ideas. It is an extremely long and intensive process, from the very first flash of inspiration and the initial sketch to a product that is ready for series production.

Every idea has to overcome certain hurdles along the way. We have to demonstrate that the concept is technically feasible, that there is a market for it, and that it makes economic sense. The purpose of a facility like the Innovation Lab is to encourage creativity, which is why the Creativity Space is at its heart. But we also need to support implementation and accompany promising ideas throughout their journey.

As innovation managers, our responsibility is to put employees in the driver's seat and help them to actively realize their concepts - and ultimately to ensure that a promising idea becomes a product that represents genuine progress for us, for dialysis treatment, and for patients.



OVER  
0.5  
BILLION  
HEMODIALYSIS  
TREATMENTS

EFFECTIVE  
BLOOD  
FLOW

381<sup>ML/MIN</sup>

# A NEW ERA IN KIDNEY CARE IS ON THE HORIZON

140<sup>BPM</sup>



Creating a seamless connection  
powered by ever larger data sets  
between patients, caregivers  
and researchers will unlock the  
many benefits of personalized  
medicine.



TWO  
BILLION  
LABORATORY  
TESTS



ARTERIAL

44<sup>MMHG</sup>

VENOUS

161<sup>MMHG</sup>

TWO  
MILLION  
PATIENT  
DATA

## Using clinical data for better treatment

The vision that Fresenius Medical Care has laid out in its Strategy 2025 is to unlock the potential of digitalization by combining the power of patient data with its technological leadership in dialysis equipment and care.

The Company has built a large repository of clinical data on advanced kidney disease, encompassing information from more than two million patients, over half a billion hemodialysis treatments and almost two billion laboratory tests.

This abundant source of information is constantly expanding as devices collect more and more diagnostic, environmental and operational data to monitor each patient's condition and facilitate care.

G

Get ready for the healing power of data and algorithms. Fresenius Medical Care is on the verge of tapping a vast new resource that will produce novel insights and, in the process, change renal care as we know it. Connected care will make it possible to tailor therapies to individual patients, help academics decode the warning signs and underlying causes of renal disease, and empower pharmaceutical companies to speed up the development of new, life-saving drugs.

"We are at the beginning of a fundamental improvement in health and kidney care. Digital technologies bring rapid and major changes and hold great promise for patients, physicians and researchers," says Kirill Koulechov, Senior Vice President for Global Research and Development in the area of machines and digital solutions at Fresenius Medical Care.

"Consumers have become used to simple, intuitive tools and software that make their lives easier, and the same is happening in health care as digital solutions become an integral part of it." The overarching goal, according to Koulechov, is to better connect people at the point of care and in home care scenarios for improved outcomes and lower costs.



KIRILL KOULECHOV  
SENIOR VICE PRESIDENT  
GLOBAL RESEARCH AND  
DEVELOPMENT

bb

Digital technologies bring rapid  
and major changes and hold great  
promise for patients, physicians,  
and researchers.

pp

## HOW "MY REASON" WORKS



Participants donate a blood or saliva sample



DNA is extracted and sequenced by a third-party provider on behalf of Frenova Renal Research



The genomic data is paired with the world's largest clinical database on advanced kidney disease



The data is securely stored by Frenova Renal Research in its cloud-based Genomics Registry Engine



External researchers can license access to de-identified data sets



Searches can be run across both data sets to identify even small patient subpopulations

"We are sitting on a treasure trove, because we are able to connect the dots. It's not just the sheer number but also the quality of the data," explains Koulechov. "Since many patients stay with us for years, we can see the changes in one person over time and compare deviations with historical values. We can incorporate this information into important medical decisions for the benefit of patients." He points to modality management as one example, where a predictive model can forecast when a home dialysis patient is at risk of dropping out and make proactive recommendations to ensure continued access to care.

### New opportunities for early detection and support

Engineers on his team are building advanced tools that mine and refine this information with the help of artificial intelligence. These insights are incorporated into services, such as a digital hub for care teams, apps for physicians to customize treatment or companion apps for use on patients' smartphones. "It opens up new opportunities for early detection and support, particularly in home care," says Koulechov.

In addition to using the database as a tool for better patient care, the Company will also establish the largest genomic registry with a focus on kidney disease. Frenova Renal Research, Fresenius Medical Care's contract clinical research arm which is part of the Global Medical Office, has started signing up patients, initially in the U.S., who want to provide their genetic data.

"Nephrology has been underrepresented in clinical research compared to fields like oncology or cardiology. Now, we want to bring personalized medicine to renal care," says Kurt Mussina, President of Frenova, pointing to the recently launched "My Reason" campaign.



KURT MUSSINA  
PRESIDENT OF  
FRENOVA



### "My Reason" collects data as a gift to future generations

Mussina adds, "Patients who donate a blood or saliva sample for DNA sequencing are doing their part to advance the science of renal therapies. Their reason to participate is to help others down the road, perhaps even their own family members, as kidney disease is sometimes hereditary. By doing so, they are making a gift to future generations."

Augmenting the genomic registry with clinical data will make it even more effective in improving care. Mussina sees pairing genetic data with the mountain of clinical data as the secret to catalyzing research into novel drug targets and therapies. As a result, the registry that Frenova plans to license to academics as well as pharmaceutical and biotech companies, will become a living engine.

Researchers will be able to examine the de-identified data to look for biomarkers that can tell them how susceptible individuals are to kidney disease and how they might respond to interventions. The goal is to reduce the cost and risk associated with clinical trials, bringing new therapies to market faster. Additionally, the data can be used to run virtual clinical trials in which patients are represented by mathematical models. The findings from these can help to improve the algorithms used in everyday clinical care.

### Connected kidney care means involving patients much earlier

Leaving behind the disruptions caused by the pandemic, Frenova hopes to sign up enough patients over the coming year and possibly see the first insights published within two years. The goal is to combine the genetic data of 100,000 patients or more. "We have taken great care to put the right privacy and data security measures in place to safeguard the genetic data as well as all other data we collect from patients," says Mussina.

While those academic endeavors will take some time to bear fruit, both Koulechov and Mussina see a more immediate payoff from digitalization over the entire renal care continuum. Connected kidney care means getting patients involved much earlier and improving their quality of life with the help of digital care models that cover all stages of treatment, from education to transplantation. Capturing key metrics such as heart rhythms, fluid volumes and stress on the muscles and blood vessels that supply the kidneys can be included in a feedback loop that automatically adjusts treatment for the right patient at the right time.

Sometimes, meaningful digital innovation comes in even smaller doses. "Patients don't want to face their journey alone. Depression is

an all-too-common problem," Koulechov explains. "It can help to have an app with underlying algorithms that ask you how you feel and rate your treatment, or to have friends and family do it if you aren't digitally savvy." It is another aspect of connected care worth exploring and can be an important part of assessing quality of life.



There are many reasons to donate health data to science. The "My Reason" campaign appeals to the most powerful of all: altruism, or doing something for future generations.

Kidney patients who sign up for the new genetic registry by Frenova Renal Research will be safely sharing their DNA sequence so researchers can better understand kidney disease and develop innovative therapies.

"This genomic registry can grow into a comprehensive tool for renal research and provide a new business line by licensing access to the research community," says Frenova president Mussina. "It brings together patients, their families, patient advocacy groups, physicians and researchers for a common cause: to introduce personalized medicine to the field of nephrology."

## POSSIBLE APPLICATIONS



Identify biomarkers of kidney disease, for diagnosis and potential interventions



Drive personalized therapies to improve patient outcomes



Reduce cost and risk in pharma trials to bring drugs to market faster

# MAKING A DIFFERENCE - EVERY DAY



**Patients living with kidney disease face unique challenges that require the support of expert caregivers. Our nurses provide individual, compassionate care that is hard to beat - and has never made a bigger difference than in the past year. We would like to thank our care teams from the bottom of our hearts for their commitment to standing by our patients and making a difference - every day.**

Our 'Care goes both ways' campaign in the Asia-Pacific and Europe, Middle East and Africa (EMEA) regions has been initiated to raise collective awareness of the daily care provided by nurses and clinical teams. The work they do is so important, and is appreciated, too - because care goes both ways. Small gestures of gratitude, like a smile or a thank-you note, have great meaning. The healing power of the bond uniting patients and nurses through their emotional connection is captured in a digital collage composed of photos and videos, demonstrating to nurses that their work is recognized and appreciated by all.

To help nurses thrive in their profession, the Company has created new educational opportunities to help them build their skills, develop as leaders and advance their careers. At the same time, confidential counseling and support services in individual countries will provide practical and emotional support.

## RECOGNIZING UNWAVERING DEDICATION

Collaborative, proactive, reliable, excellent - our global Fresenius Medical Care values reflect our DNA and define who we are. This applies in particular to providing daily care to our patients. At the beginning of 2021, EMEA encouraged all clinic staff to nominate one of their colleagues for the newly introduced Global Value Awards. These awards recognize the tireless work and unwavering dedication of our nurses in the NephroCare network.



**LUCIJA RAZBORŠEK**  
GOLD PRIZE FOR  
THE GLOBAL VALUE  
'COLLABORATIVE'



**LARISA SIRAR**  
GOLD PRIZE FOR  
THE GLOBAL VALUE  
'EXCELLENT'



## A BIG ROUND OF APPLAUSE

Latin America started a campaign to praise nurses for their commitment under the hashtag #TodosLosAplausos - "everyone applauds". The region has launched a special website to honor and thank all nursing heroes at Fresenius Medical Care throughout Latin America. Employees can post pictures or submit a thank-you message to a special nurse, creating a virtual wall of gratitude and appreciation.

## KEEPING RECOGNITION TOP OF MIND

During National Nurses Week in May, North America acknowledges nurses who go above and beyond to provide the highest quality care. An online spotlight was created especially for nephrology nurses, in which they gave insights about why they love their job.

In addition, Fresenius Medical Care celebrated Nephrology Nurses Week in September, with the aim of furthering and growing the nephrology nurse profession by investing in employees' and future nurses' growth, professional development, and career advancement. Through the partnership with the American Nephrology Nurses Association (ANNA), the Company funds an ongoing membership program and provides scholarships to offer continuing educational support to nurses dedicated to caring for people living with chronic kidney disease.



WE WOULD LIKE  
TO THANK  
OUR PATIENTS AND  
PARTNERS  
FOR THEIR CONFIDENCE  
IN US AND ALL  
EMPLOYEES FOR  
THEIR DEDICATION AND  
COMMITMENT.



Thank  
you!

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