

**PATH TO HOME**  
MAY 20, 2019

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CEO

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Global Chief Medical Officer

**CARE**  
AND **LIVE**



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If not mentioned differently the term net income after minorities refers to the net income attributable to the shareholders of Fresenius Medical Care AG Co. KGaA. The term EMEA refers to the region Europe, Middle East and Africa. Amounts are in Euro if not mentioned otherwise.



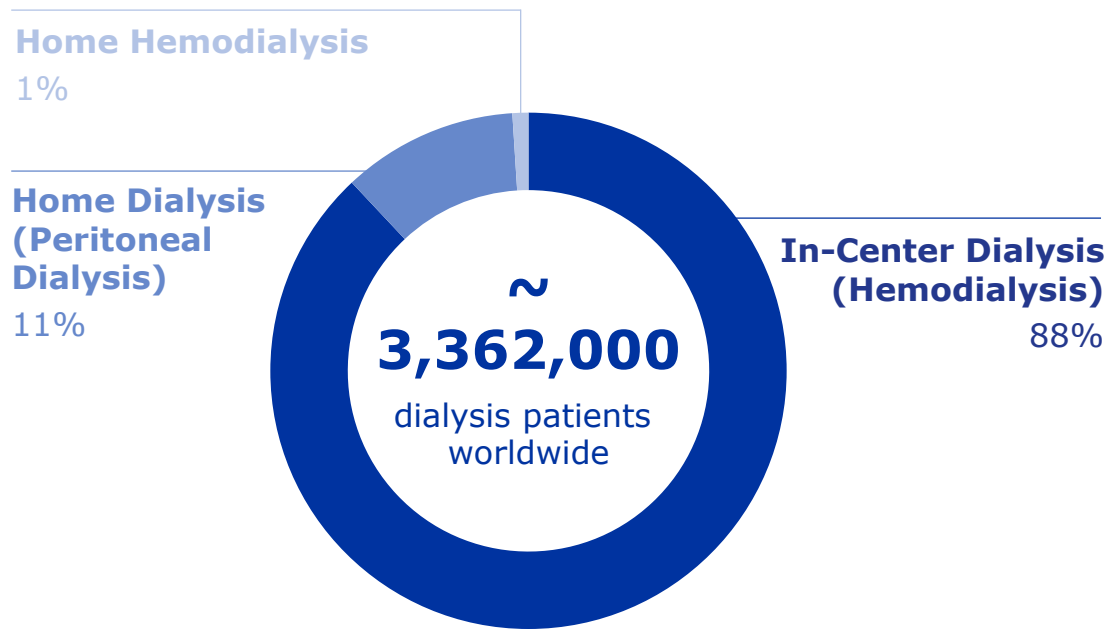


# AGENDA

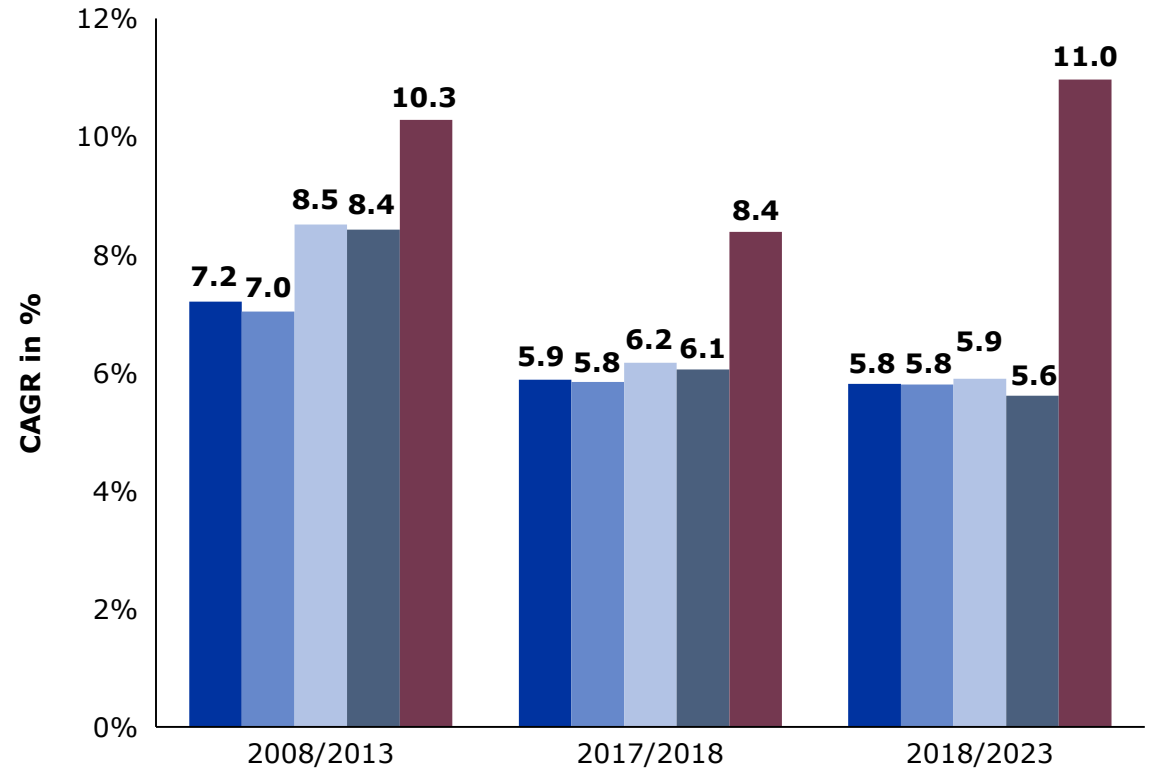
- 1 REASONS FOR HOME**
- 2 MEDICAL PERSPECTIVE
- 3 OUTLOOK
- 4 Q & A

# GLOBAL TREATMENTS OVERVIEW

## IN-CENTER VS. HOME DIALYSIS SPLIT



## PATIENT GROWTH BY MODALITY



■ ~ 2,974,000 patients   ■ ~ 369,000 patients   ■ ~ 19,000 patients

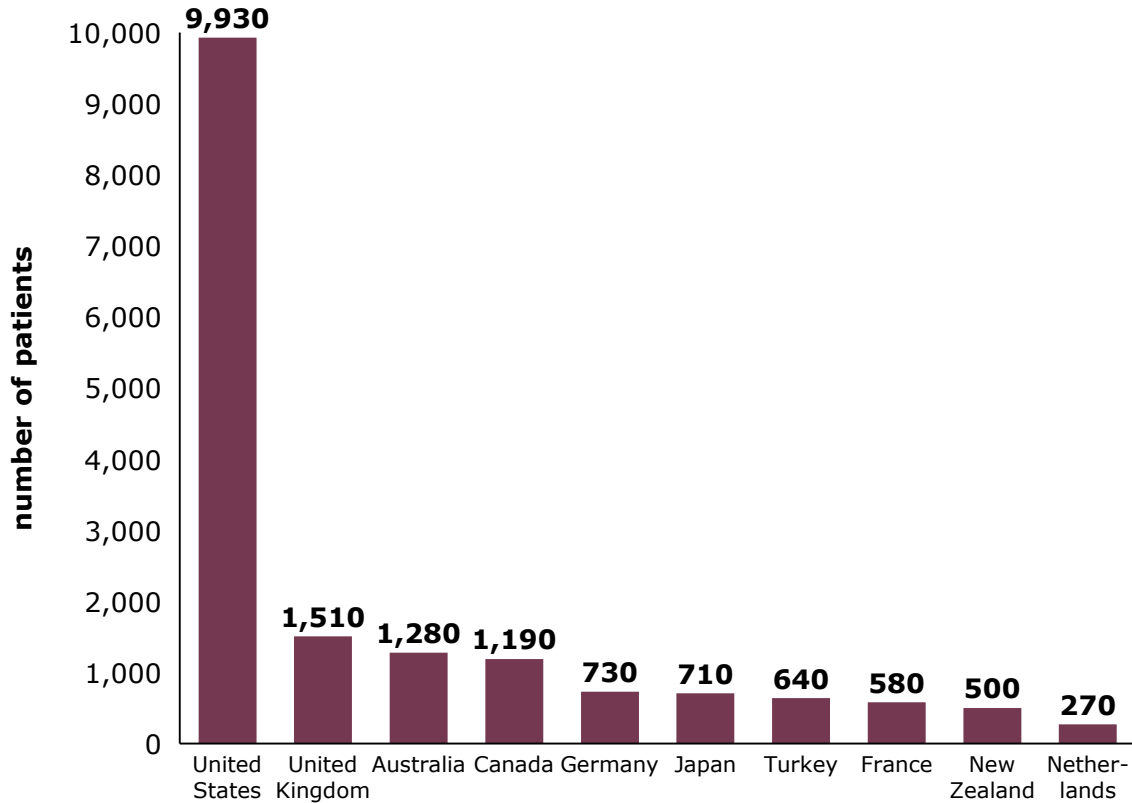
Source: FME Annual Report 2019, p. 33

■ Dialysis   ■ In Center Dialysis   ■ Home   ■ PD   ■ HHD

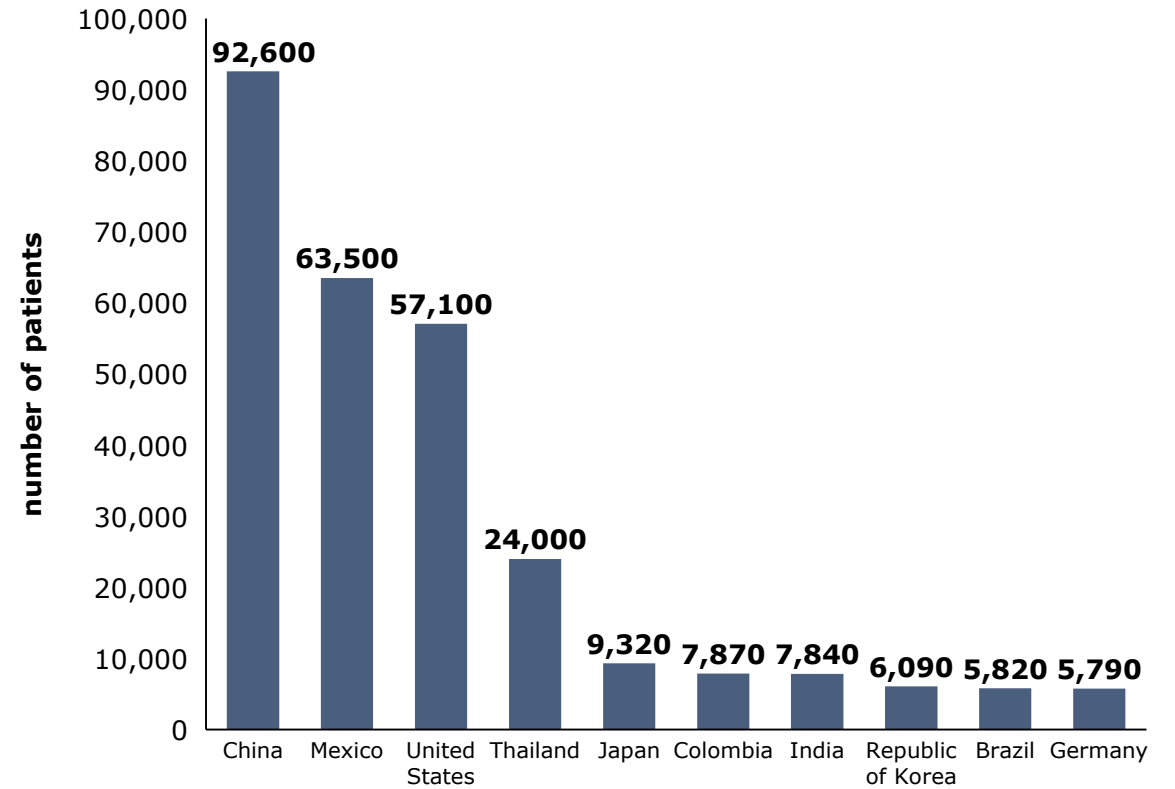
Source: MCS, LRPP; 2018

# HHD & PD PATIENT NUMBERS OF TOP 10 COUNTRIES

## HHD PATIENTS (MARKET)



## PD PATIENTS (MARKET)



Source: MCS; 2018; might also include dependencies and areas of special sovereignty

# ■ WHY DO WE PROMOTE HOME DIAYSIS?

CREATING A FUTURE WORTH LIVING. FOR PATIENTS. WORLDWIDE. EVERY DAY.



Improve the quality of life for our patients and give life back



Provide the right care at the right time, where our patients want it



Efficient management of labor in consideration of supply and wage pressure



Ensure capital efficiency



# ■ DRIVERS FOR HOME DIALYSIS

## TECHNOLOGY

- NxStage technology has the potential to enable HHD for an increasing number of patients
- The combination of the NxStage technology and the Fresenius Medical Care network and know how can change the way dialysis services are delivered for many patients

## GOVERNMENT

- Recent statements show that there is an interest in improving patients options for treatments and improving quality of life
- Home dialysis training add on payment had been improved

## DOCTORS

- Further enhanced medical outcomes
- Congress passed the Chronic Care Act in 2018, which removed restrictions on telehealth reimbursement for home-based dialysis patients

## PATIENTS

- 82% of patients prefer treatment at home
- Keep their lifestyle as normal as possible by continuing to work and have a nocturnal treatment



# Talk

between

**Vanessa Evans**

Home Dialysis Patient

and

**Rice Powell**

Chief Executive Officer







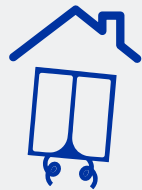
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# ■ TREATMENT OPTIONS FOR PATIENTS WITH END-STAGE RENAL DISEASE (ESRD)



**Transplant**



**At-Home  
Peritoneal  
Dialysis  
(PD)**



**At-Home  
Hemodialysis  
(HHD)**



**In-Center  
Hemodialysis  
(HD)**



**Supportive  
Care**

# ■ DIALYSIS IN GLOBAL CONTEXT– FOUR FACTORS

## HEALTH EPIDEMIC

Growth of the global dialysis population fueled by increasing worldwide incidence of obesity and comorbidities continues stressing Ministries of Health and policy makers.

## GLOBAL SYSTEM BURDEN

The complex dialysis population has high hospitalizations and costs in healthcare economies around the world.

## EVOLVING PATIENT NEEDS

Patients want more informed choice and options beyond in-center hemodialysis that fit their life circumstances.  
Patients may choose or require different modalities throughout their full life journey.

## POLICY SHIFTS

Policy makers see home dialysis as a more cost-effective care delivery system.

# TREATMENTS FOR THE ENTIRE PATIENT LIFETIME JOURNEY



**At-Home  
Peritoneal Dialysis (PD)**



**In-Center  
Hemodialysis (HD)**



**Transplant**



**At-Home  
Hemodialysis (HHD)**



**Supportive Care**



# ■ KIDNEY TRANSPLANT



**Organ from living or deceased donor is transplanted into patient.**

## BENEFITS:

- Closest to native kidney function
- Highly effective for ESRD when successful

## CONSIDERATIONS:

- Patients' overall health and comorbidities
- Availability of a good kidney donor match
- Timing for procedure
- Strict guidelines for eligibility
- Waitlist
- Supply of approx. 20k vs. demand of 100k out of approximately 650k kidney failure patients in U.S.

# ■ AT-HOME PERITONEAL DIALYSIS (PD)



**Uses abdominal cavity lining and fluid (dialysate) to remove waste and excess fluid; done by patient at home with home-based devices.**

Done in patient home, by patient themselves

## **Typical treatment schedule:**

- 3–5 times daily, 20–30 minutes per session OR
- Overnight, 8–10 hours every night with automated machine

## **BENEFITS:**

- No needles, generally painless
- Can be done anywhere—home, work, traveling
- Frequent treatments mean feeling better
- Fewer restrictions for diet & fluid intake
- Gentler on heart
- Preserves residual kidney function

## ■ AT-HOME HEMODIALYSIS (HHD)



**Blood is pumped from the body, filtered through man-made membrane (dialyzer) and returned to the body, done by patient at home with home-based devices.**



Done in patient home or other non-healthcare site generally, with a care partner

### **Typical treatment schedule:**

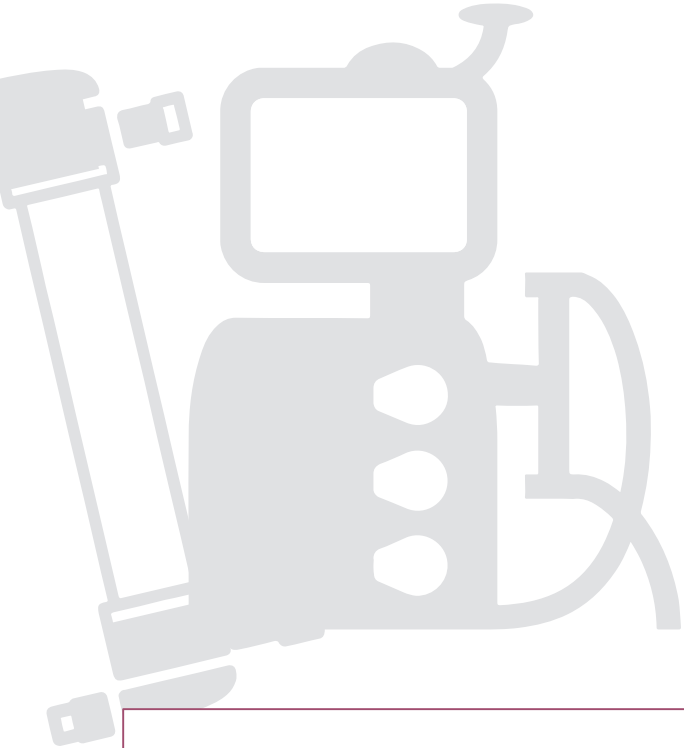
- 3–5 days per week, 3–5 hours per session OR
- Overnight, 6–8 hours every night

### **BENEFITS:**

- Plan treatment around patient schedules
- Save on travel time and transportation costs
- Feel better and have more energy
- Possibly get more freedom with diet



## ■ IN-CENTER HEMODIALYSIS (HD)



**Blood is pumped from the body, filtered through man-made membrane (dialyzer) and returned to the body, in a clinic setting.**

Done in a dialysis center, generally by care team

### **Typical treatment schedule:**

- 3 times per week, 3–5 hours per session OR
- 3 nights a week, 8 hours per session for nocturnal (nighttime) option

### **BENEFITS:**

- Treatment done by dialysis nurses/care team
- Labs and checkups done in one place
- Opportunity for social connection with other patients in clinic setting

# ■ SUPPORTIVE CARE



**Focuses on maintaining quality of life, and palliative care measures to relieve discomfort and manage pain.**

## SOMETIMES DIALYSIS ISN'T THE RIGHT CHOICE DUE TO:

- Other critical health conditions
- Quality-of-life considerations

## SUPPORTIVE CARE FOCUSES ON:

- Maintaining quality of life
- Relieving discomfort
- Supporting patient at end-of-life

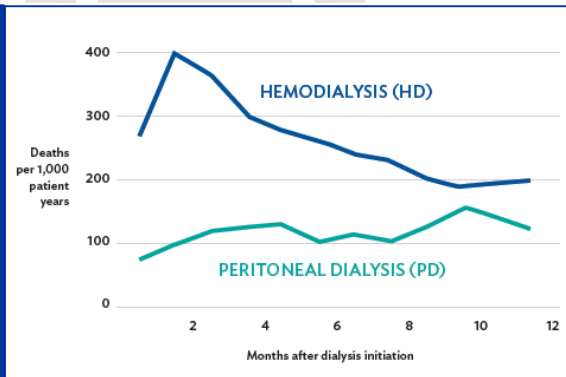
# ■ BENEFITS OF HOME DIALYSIS

WHEN SURVEYED:

**93%**  
of Nephrologists  
would choose  
at-home dialysis

**89%**  
of Nurses  
would choose  
at-home dialysis

At-home peritoneal dialysis is **associated with lower mortality rates** in the first year of treatment.



HOME THERAPY MAY OFFER PATIENTS:

- Treatment independence & control
- Travel flexibility
- Privacy
- Reduced hospitalizations
- Fewer dietary restrictions & medications
- Minimal time & expense commuting
- Greater cardiovascular protection
- Improved adherence by greater involvement in their care

Source: Special Analyses, USRDS ESRD Database. Adjusted (age, race, sex, ethnicity and primary diagnosis) mortality among 2012 incident ESRD patients during the first year of therapy.  
Ref: Incident ESRD patients, 2011.

# ■ HEART AND HOME: IMPROVING CARDIOVASCULAR PROTECTION

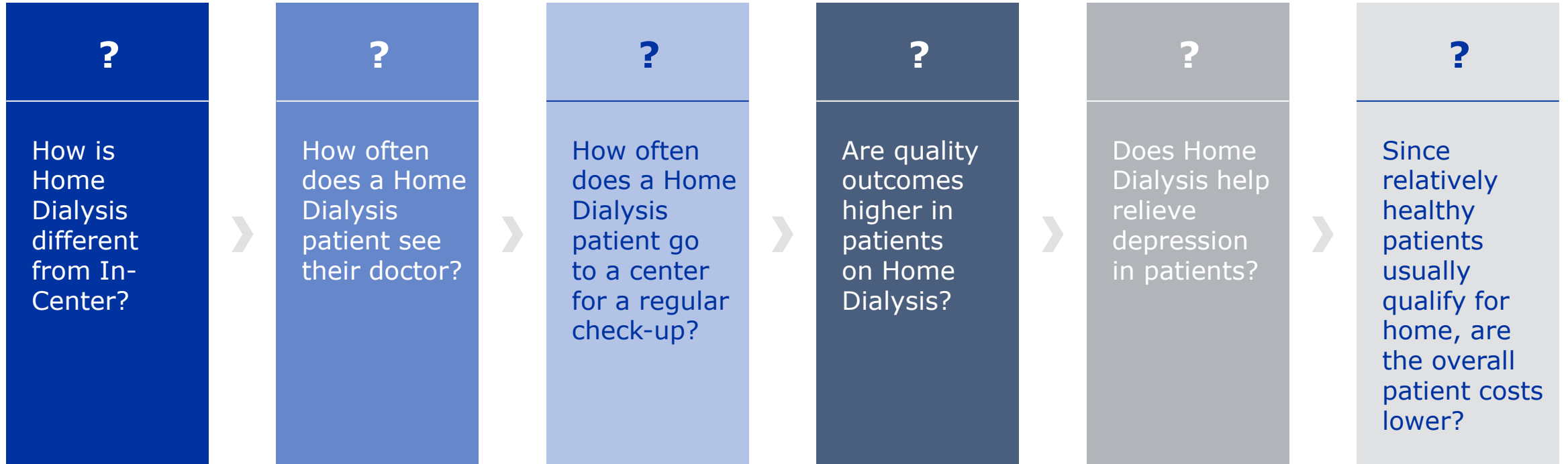
A hallmark of morbidity and mortality in dialysis populations is cardiovascular disease.

PD and HHD can be used to address efficacy of managing cardiovascular disease and cardiovascular protection.

Conventional HD and PD can lead to complications from persistent volume overload, uncontrolled hypertension, with resultant left ventricular hypertrophy, heart failure and arrhythmias.

In order to improve outcomes and lower costs of care while expanding patient choice, the cardiovascular disease issues need to be addressed with awareness, treatment and control of fluid volume.

# ■ SIX FREQUENTLY ASKED QUESTIONS ABOUT HOME DIALYSIS



# ■ TYPICAL HOME VS. IN-CENTER PATIENT IN 2019

## TYPICAL HOME DIALYSIS PATIENT<sup>1</sup>

- Age: 59 years
- Time on dialysis: 3 years
- Number of co-morbidities: 11
- Average number of hospitalization days: 8

## TYPICAL IN-CENTER HD PATIENT<sup>1</sup>

- Age: 64 years
- Time on dialysis: 4 years
- Number of co-morbidities: 13
- Average number of hospitalization days: 11



<sup>1</sup> In North America

# ■ AT HOME, BUT NOT ALONE: REMOTE PATIENT MANAGEMENT THROUGH CONNECTED HEALTH

## CONNECTED HEALTH

Our connected health platform allows us to seamlessly connect kidney patients and their care teams to anticipate and address needs, resulting in unparalleled and transformative care experiences for improved health outcomes.

- Stronger connections
- Timely interventions
- Transformative care
- Better health outcomes

## THREE PILLARS

*Proactive health:* accessing actionable data and resources that enable timely interventions

*Collaborative care:* providing centralized and integrated communications for stronger connections and cohesive care

*Personalized experience:* empowering care teams with the right information at the right time to make the best health decisions

## CHANGING CARE PARADIGM

- Intervene sooner to keep patients out of the hospital
- Oversight of care for home patients as much as in-center
- Provide patients with peer-to-peer support
- Personalize care for each patient
- Ensure physicians feel more confident recommending home dialysis to their patients
- Triage and prioritize care based on patient trends



# ■ INNOVATION OUTLOOK

## **CARDIOVASCULAR SYSTEM PROTECTION**

New devices, growing therapies and personalizing prescribing regimens can be used to address efficacy of managing cardiovascular disease & cardiovascular protection in patients with advanced kidney disease.

## **HUMAN-ACELLULAR VESSELS FOR VASCULAR ACCESS**

Engineering a readily-available "off the shelf" bioengineered human acellular vessel (HAV) that can replace a patient's own blood vessel or create a new vascular access required for dialysis without requiring cells or tissue from the patient.

## **ARTIFICIAL KIDNEYS**

Opportunities exist to create more complex membranes with cellular elements, becoming bioartificial kidneys.

Work includes managing other disease states that can affect the kidney.

## **PIG-TO-HUMAN KIDNEY TRANSPLANT**

Opportunity to address organ supply shortage through pig-to-man kidney transplants.

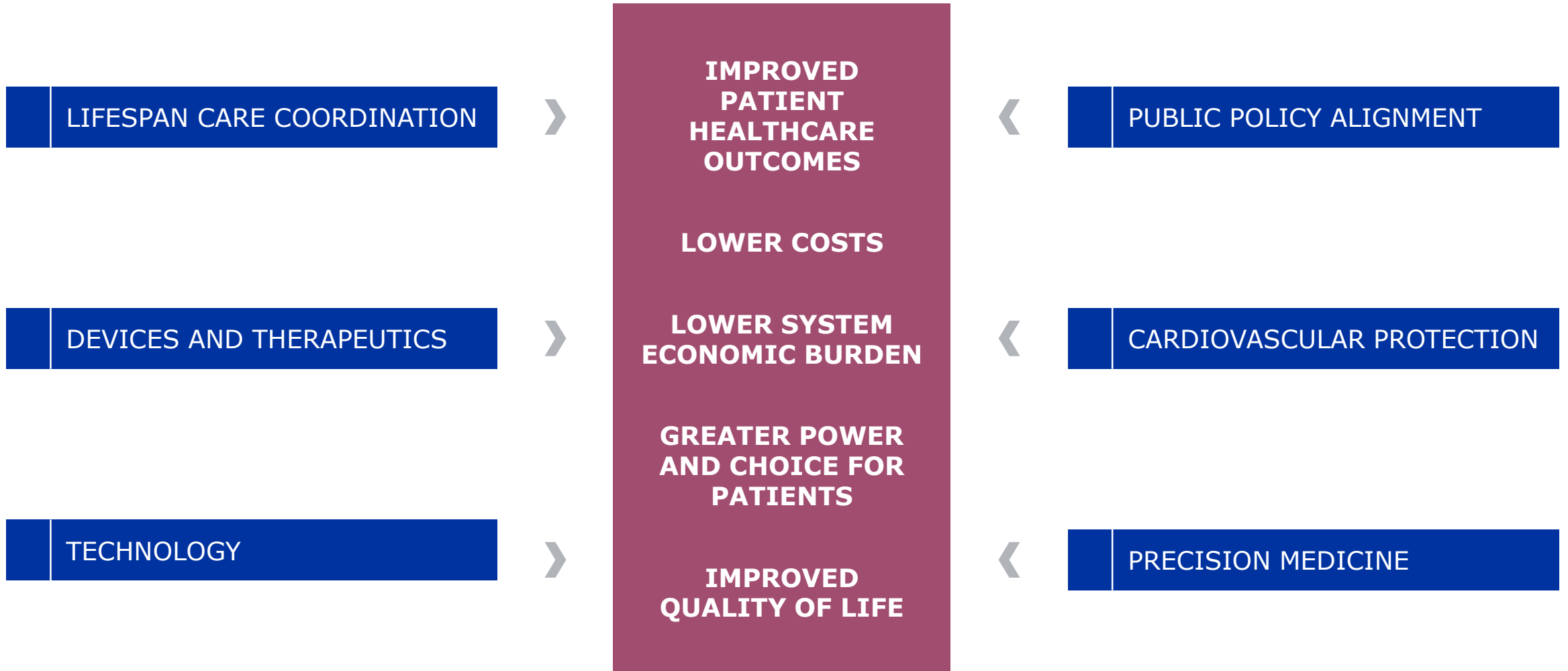
Requires development of immunologic tolerance in humans.



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# ■ FRESENIUS MEDICAL CARE: VALUE BASED CARE AT WORK



# ■ HOW WILL WE INCREASE HOME PENETRATION IN THE U.S.?

## STRATEGY

**2019  
an investment  
year**

### Invest in infrastructure



Training clinics



Home-Nurses



24/7 back-office

**Further  
improvement  
of technologies**



HHD machines



PD machines



Connected health

**Improving  
access**



CKD patients



Transitional Care Unit



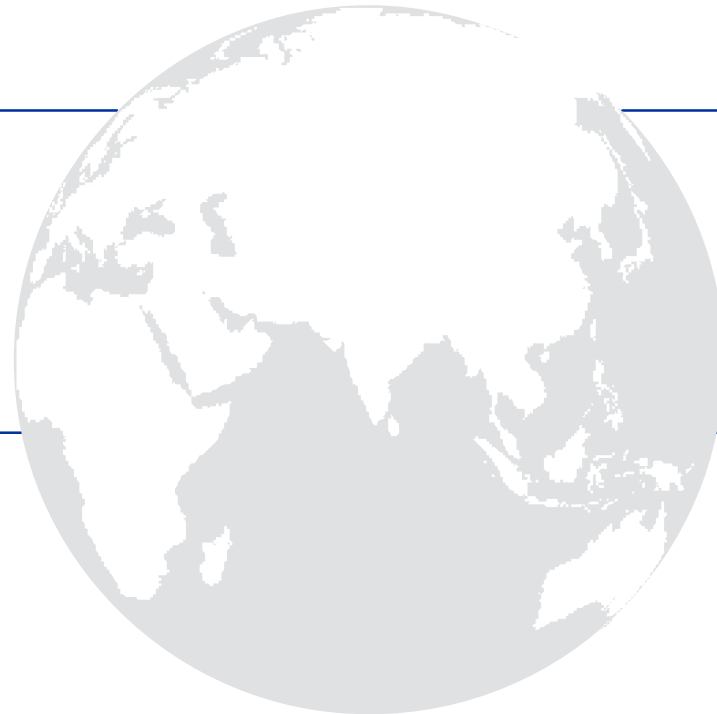
Support PD to HHD

# ■ HOME CARE OUTSIDE THE U.S.

## FRESENIUS MEDICAL CARE: GLOBAL AND VERTICALLY INTEGRATED

**PD** is the **common solution** as long as it is medically viable

Developing economies with a **missing clinic infrastructure**



**HHD** with **upside potential** outside the U.S. as well

HHD could be the **alternative in developing economies** instead of building out an extensive clinic infrastructure

# ■ FMC VENTURE FUND: INVESTING IN INNOVATION OPPORTUNITIES

**1**

Novel ways to improve kidney function in patients with chronic, progressive kidney disease.

**2**

Addressing cardiovascular disease and cardiovascular system protection in patients with advanced kidney disease.

**3**

Managing diabetes in people with advanced kidney disease.

**4**

New developments in vascular access, including bioengineered human acellular vessels.

**5**

Addressing Acute Kidney Injury (AKI) by protecting kidneys that have suffered AKI and helping recover function.

**6**

Regenerative medicine.



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# ■ FINANCIAL CALENDAR 2019<sup>1</sup>

## REPORTING DATES

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<b>July 30</b>	Report on 2 <sup>nd</sup> quarter 2019
<b>October 29</b>	Report on 3 <sup>rd</sup> quarter 2019

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## CONFERENCES & MEET THE MANAGMENT

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<b>May 21</b>	RBC Capital Markets Global Healthcare Conference, New York
<b>May 29</b>	UBS Best of Europe 1on1 Conference, New York
<b>June 4 &amp; 5</b>	Jefferies Healthcare Conference, New York
<b>June 5 &amp; 6</b>	dbAccess Berlin Conference, Berlin
<b>June 12</b>	Goldman Sachs Global Healthcare Conference, Rancho Palos Verdes
<b>June 18 &amp; 19</b>	SocGen "European Angle Conference", Tokyo
<b>June 20</b>	JP Morgan European Healthcare Conference, London
<b>June 27</b>	Site Visit St. Wendel, Meet the Management

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<sup>1</sup> Please note that dates and/or participation might be subject to change

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