

# sequana**medical**



Innovators in the treatment of  
**diuretic-resistant fluid overload**  
liver disease – malignant ascites – heart failure

Investor presentation – February 2021

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# Disclaimers

## Regulatory disclaimer:

- The **alfapump**® system has not yet received regulatory approval in the United States and Canada. Any statement in this presentation about safety and efficacy of the **alfapump**® system does not apply to the United States and Canada. In the United States and Canada, the **alfapump**® system is currently under clinical investigation (POSEIDON Study) and is being studied in adult patients with refractory or recurrent ascites due to cirrhosis. For more information regarding the POSEIDON clinical study see [www.poseidonstudy.com](http://www.poseidonstudy.com).
- DSR® therapy is still in development and it should be noted that any statements regarding safety and efficacy arise from ongoing pre-clinical and clinical investigations which have yet to be completed. DSR® therapy is not currently approved for clinical research in the United States or Canada. There is no link between DSR® therapy and ongoing investigations with the **alfapump**® system in Europe, the United States or Canada.

## COVID-19 disclaimer:

- Sequana Medical is closely following the evolution of the COVID-19 global health crisis and is in constant dialogue with its partners to assess the impact and adapt its operations as necessary.
- Sequana Medical has put in place mitigation plans to minimise delays. The impact of increased demands on the healthcare systems, restrictions on non-essential hospital visits and procedures, social-distancing and travel restrictions may result in further delays to execution of clinical studies and impact sales.
- Sequana Medical will continue to update the market as needed and whenever possible.

## Note:

- **alfapump**® is a registered trademark. DSR® and **alfapump DSR**® are registered trademarks in Benelux.

# Sequana Medical NV

- Founded in 2006
- Gent, Belgium (HQ): corporate, clinical, commercial
- Zurich, Switzerland: manufacturing, engineering, QA/RA
- ~50 employees
- Euronext Brussels: SEQUA



# alfapump<sup>®</sup> platform

Using the bladder to treat fluid overload



Fully implanted



Automatic operation



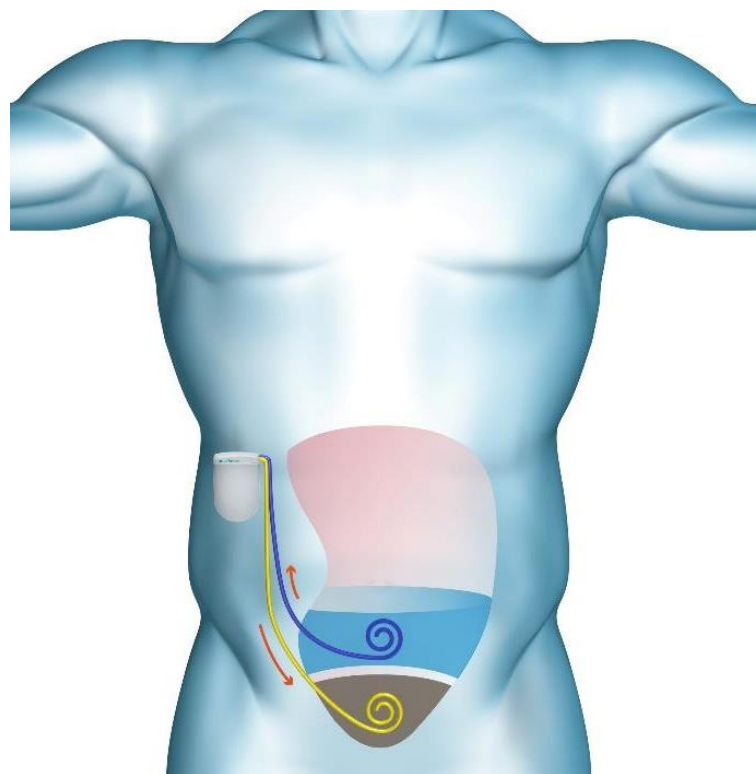
Wireless battery charging



Settings wirelessly adjusted



Remote data monitoring



Easy implantation



Long-term implantation & catheter patency



Moves up to 4 litres / day



Virtually non-clogging



No significant heating during charging and operation

***Strong IP barriers through extensive patent portfolio & know-how***

# One platform – two products



**alfapump<sup>®</sup>**

## Liver Disease (NASH)

Proven step change in liver refractory ascites and malignant ascites

Over 800 devices implanted

> €3 Bn / year market opportunity<sup>(1)</sup>



POSEIDON pivotal study ongoing

Self-commercialisation



**alfapump DSR<sup>®</sup>**

## Heart Failure

Breakthrough approach to fluid overload in heart failure

Clinical proof-of-concept of Direct Sodium Removal (DSR<sup>®</sup>)

> €5 Bn / year market opportunity<sup>(2)</sup>



RED DESERT repeated dose study ongoing

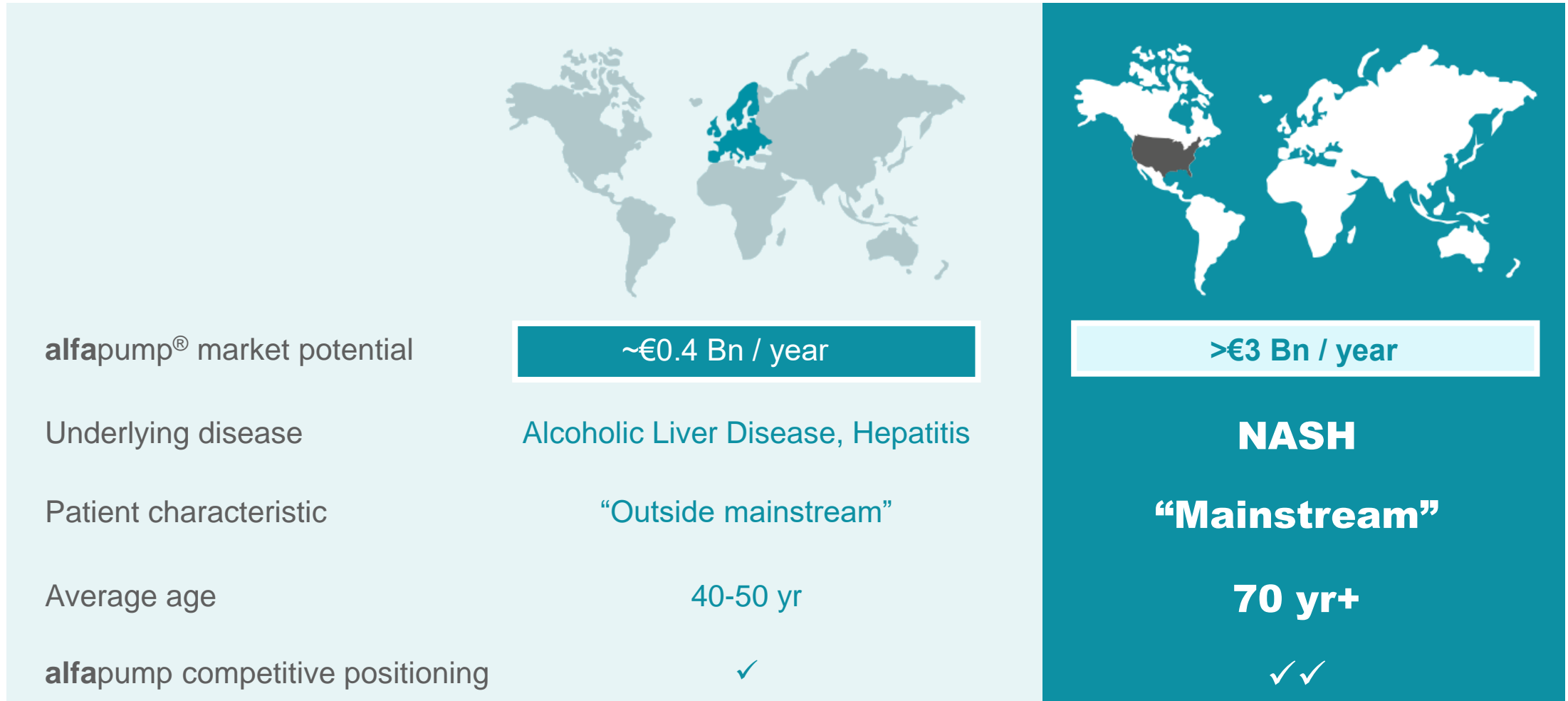
Partnering after US efficacy study

**Built upon proven European clinical & commercial experience**



# NASH drives US market attractiveness

Stronger competitive position in a much larger and dynamic market



Notes: current estimated EU Liver market: Data from 1980-2010, death rates between 9-12.4 per 100,000; Mokdad et al., 2014, Management estimates of 7.5% cirrhosis patients that die per year based on experts feedback. forecast US Liver market: Management estimate that is inclusive of estimated growth in prevalence of NASH for the US based on GlobalData Epidemiology Forecast to 2026.



# alfapump®

Proven step change in the management of liver refractory ascites and malignant ascites



# Liver cirrhosis and refractory ascites

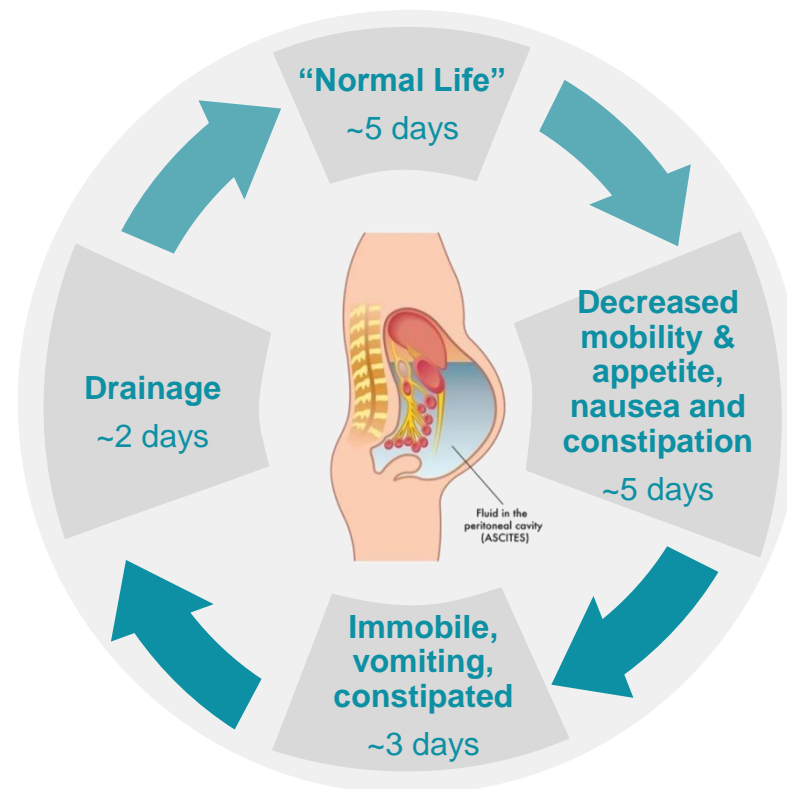
A key complication of liver cirrhosis, with a dramatic impact on quality of life

- 

**Viral infections**  
(Hepatitis B & C)
- 


**Alcoholic Liver Disease**
- 

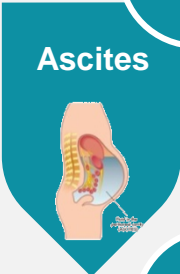
**Non-Alcoholic Steatohepatitis (NASH)**




Typical patient life<sup>(4)</sup>

### US forecast

- 

**Liver cirrhosis**  
~3-4M<sup>(1)</sup>
- 

**Ascites**  
~1.5M<sup>(2)</sup>
- 

**Refractory Ascites**  
~150K<sup>(3)</sup>

Note : Prevalence of NASH in US is expected to increase by 63% between 2015-2030; Estes et al., 2018

Source 1 Management estimate in US based on Estes et al; GlobalData Nash Epidemiology Forecast to 2026; Noureddin et al., 2013

Source 2: Runyon 2009: approximately 50% of cirrhotic patients develop ascites within 10 years of diagnosis of cirrhosis

Source 3: Ginès et al., NEJM 2004: refractory ascites occurs in 5-10% patients with ascites

Source 4: Presentation of Dr. Rajiv Jalan at EASL in 2018, Large Volume Paracentesis (LVP) treatment cycle for refractory ascites

# Cancer and malignant ascites

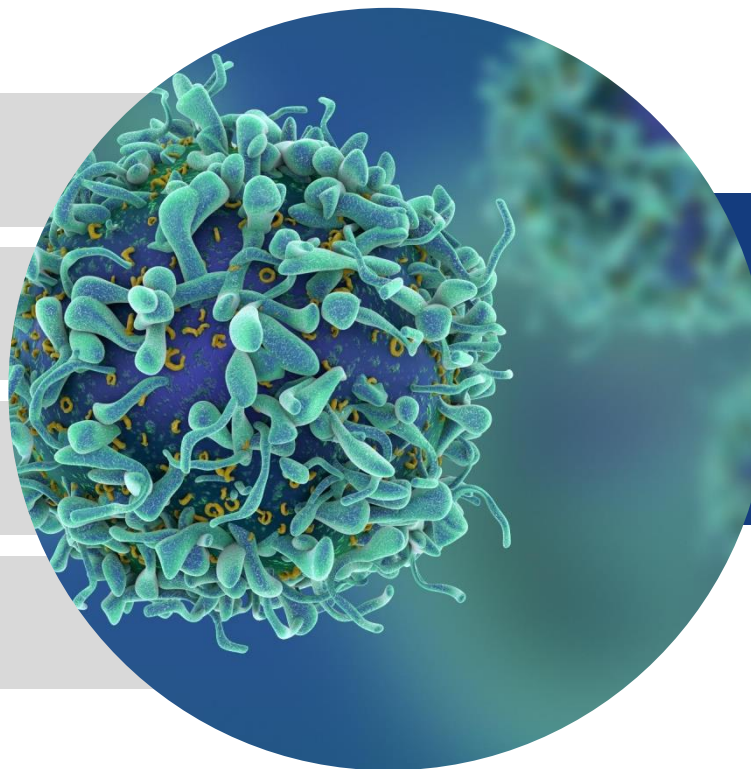
Severe complication of late-stage cancers

Fluid accumulation in the abdomen due to **drainage of lymph system**

**Breast and ovarian cancer** have longest survival with ascites<sup>(1)</sup>

Severe impact on **quality of life**

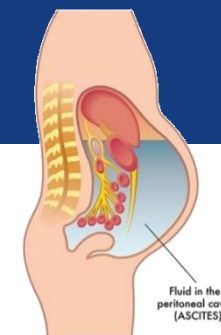
Reduces ability to undergo **anti-cancer treatment**



Malignant ascites due to breast and ovarian cancer<sup>(2)</sup>:

EU5: ~18K

US: ~16K



*Clear unmet need for improving Quality of Life and the ability to increase cancer treatment intensity*

Source 1: Ayantunde & S. L. Parsons. Annals of Oncology 2007

Source 2: Management estimate based on WHO cancer incidence rates (2018) and Ayantunde & S. L. Parsons. Annals of Oncology 2007.

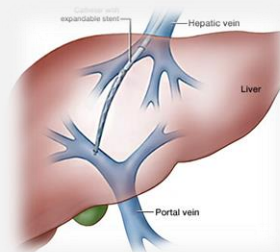
# Severe limitations of existing therapies

## Diet / Diuretics



Resistance,  
Complications

## Transjugular Intrahepatic Portosystemic Shunt (TIPS)



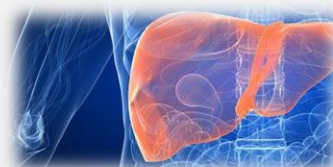
Complications,  
Contraindications

## Drainage (“Large Volume Paracentesis / LVP”)



Painful, Poor Quality of  
Life, Short Term Benefit

## Liver transplantation



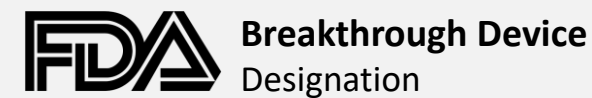
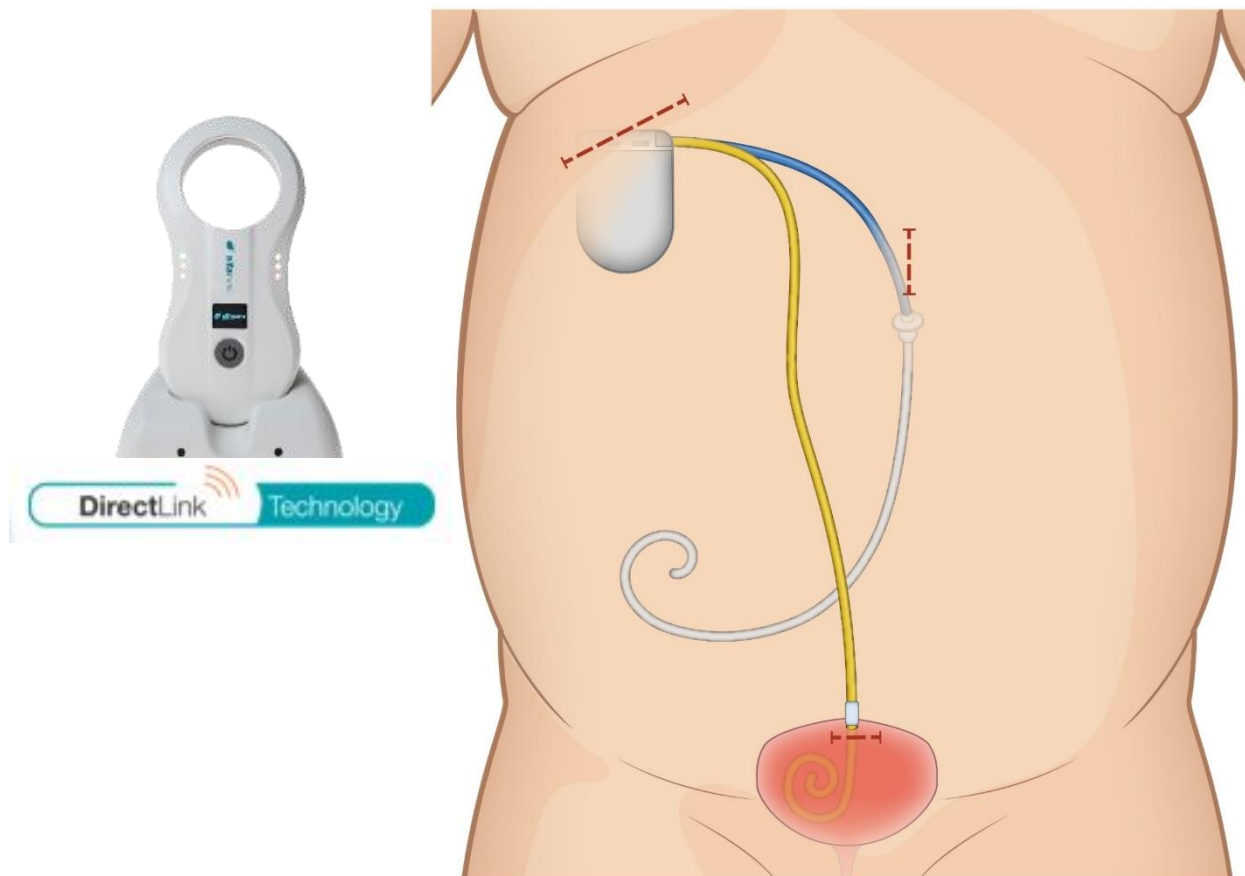
High Cost,  
Limited Availability

**alfapump®**






# alfapump® for long-term treatment

Over 800 implants and hundreds of years of patient experience



# Strong clinical and economic rationale

-  Reduced burden of disease
-  Improved patient QoL
-  Cost savings for hospitals and payers

Estimated treatment cost / patient\*:

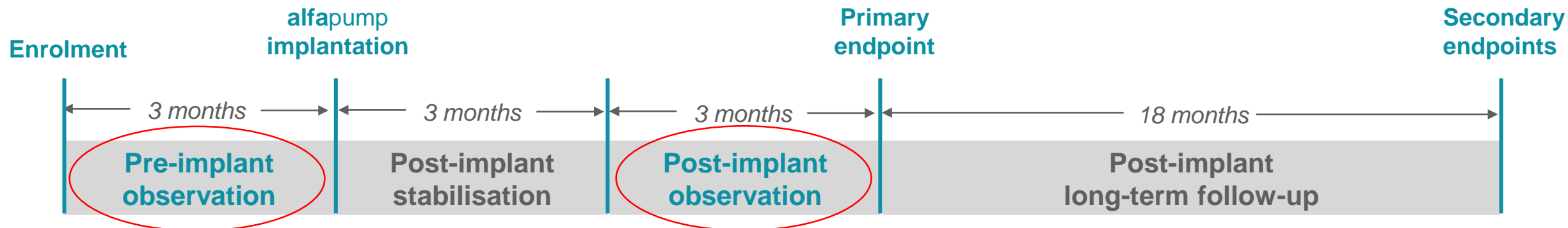
<b>LVP: ~\$54K</b>		<b>alfapump®: ~\$35K</b>
~\$1,8K / LVP <sup>(1)</sup>		~\$25K / alfapump
2 LVP / month		~\$10K / implantation
15 months		

\* Management estimate of US treatment costs, assuming no complications



# North American Pivotal Study (POSEIDON) underway

Pivotal Cohort of up to 50 patients implanted; Roll-In (“training”) cohort of up to 30 patients



## POSEIDON Study Endpoints

**Primary efficacy:** 1) 50% reduction in average monthly frequency of Therapeutic Paracentesis (“TP”) post-implant vs. pre-implant  
2) 50% of patients achieve a 50% reduction in the requirement for TP post-implant vs. pre-implant

**Primary safety:** Rate of **alfapump** related re-interventions adjudicated by the Clinical Events Committee (CEC)

**Secondary:** QoL (SF36, Ascites-Q), nutritional status, health economics, safety (device and/or procedure-related AEs), survival

# POSEIDON Interim Data: Positive for primary endpoints

Data from first 13 Roll-In patients

## EFFICACY

Mean values post-implant vs. pre-implant	N = 13
Reduction in frequency of TP	> 90%
Patients with >50% reduction in TP	100%

## SAFETY

- Safety profile of the **alfapump** consistent with previously reported data
- Adjudication process by the Clinical Events Committee for two **alfapump**<sup>®</sup> explants ongoing

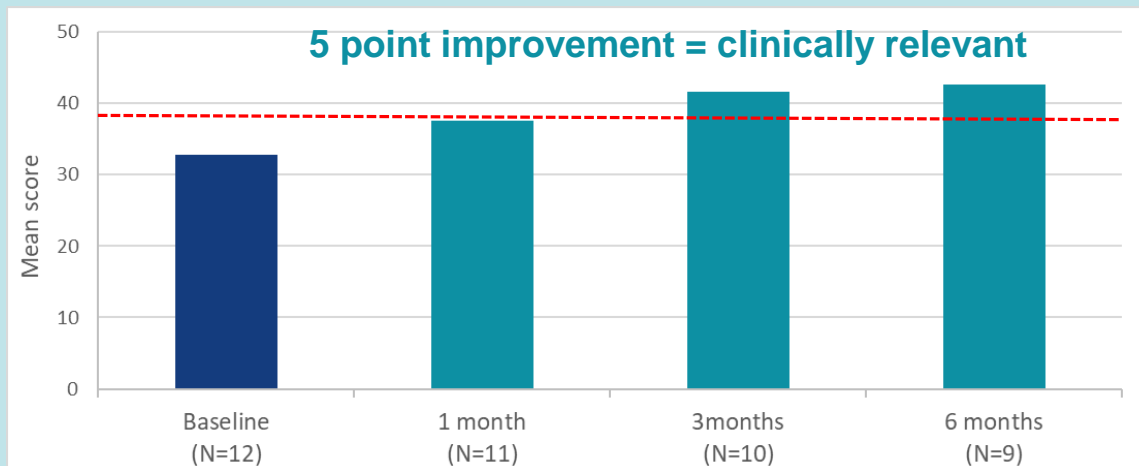
*Note: Pre- and post-implant periods for this analysis of the Roll-In Cohort differ from those that will be used for the Pivotal Cohort analysis*

# Quality of Life: Indication of fast and persistent improvement

SF-36

General health-survey questionnaire

Physical Component Score



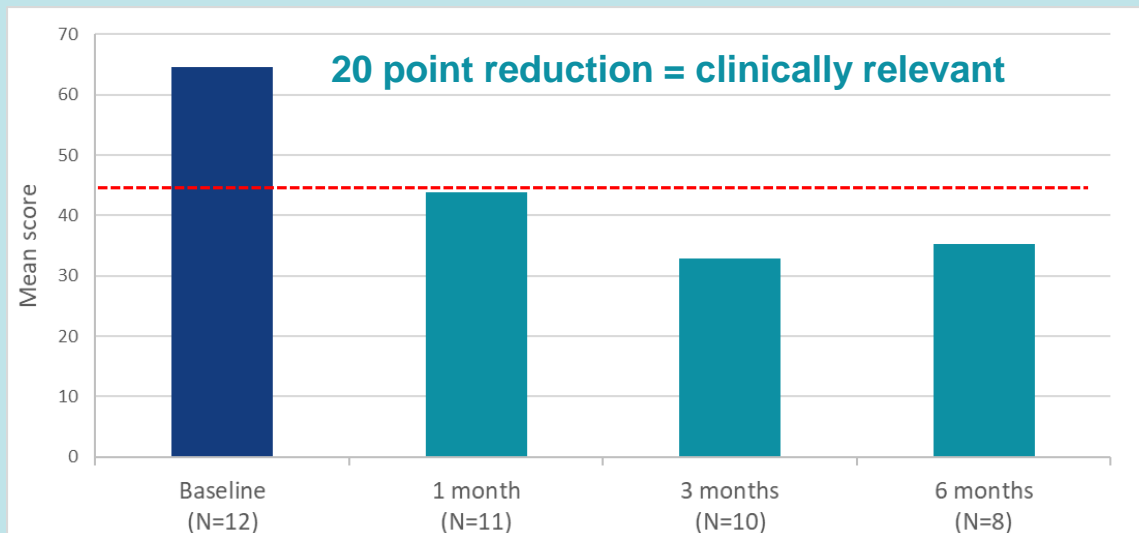
Higher is better



Ascites Q

Specific health-survey questionnaire for ascites

Total Score

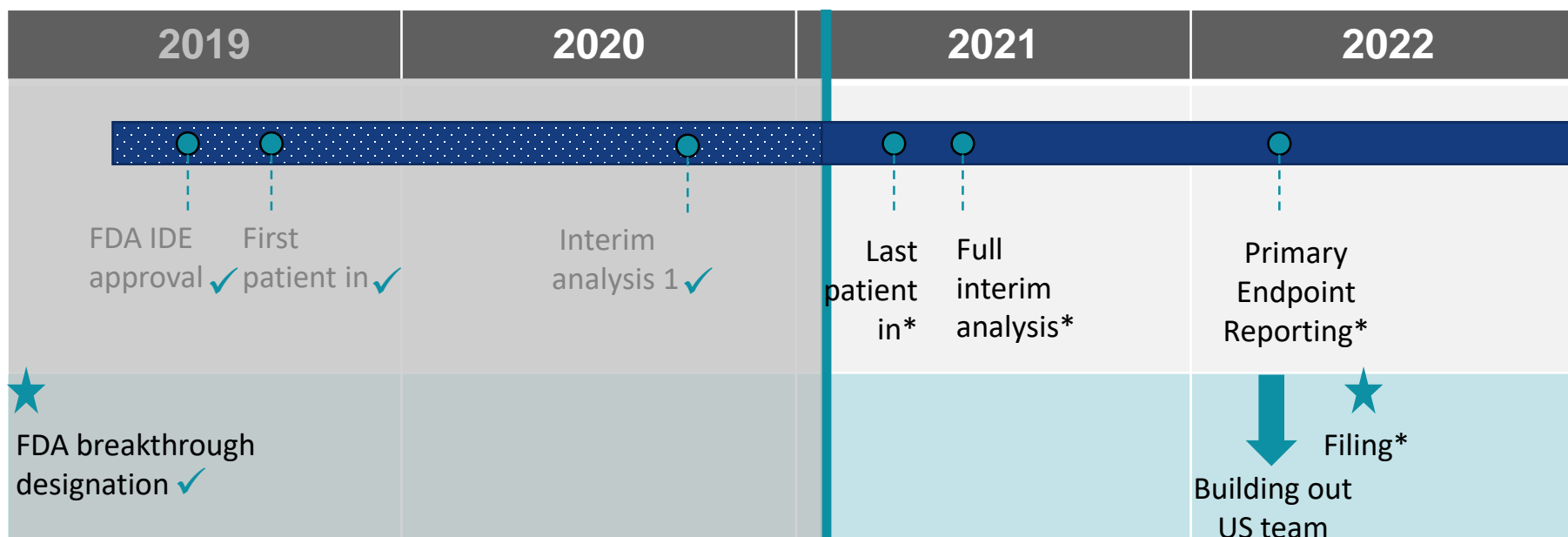


Lower is better



# Strong progress towards alfapump® US approval

Targeting announcement of primary endpoint in Q1 2022

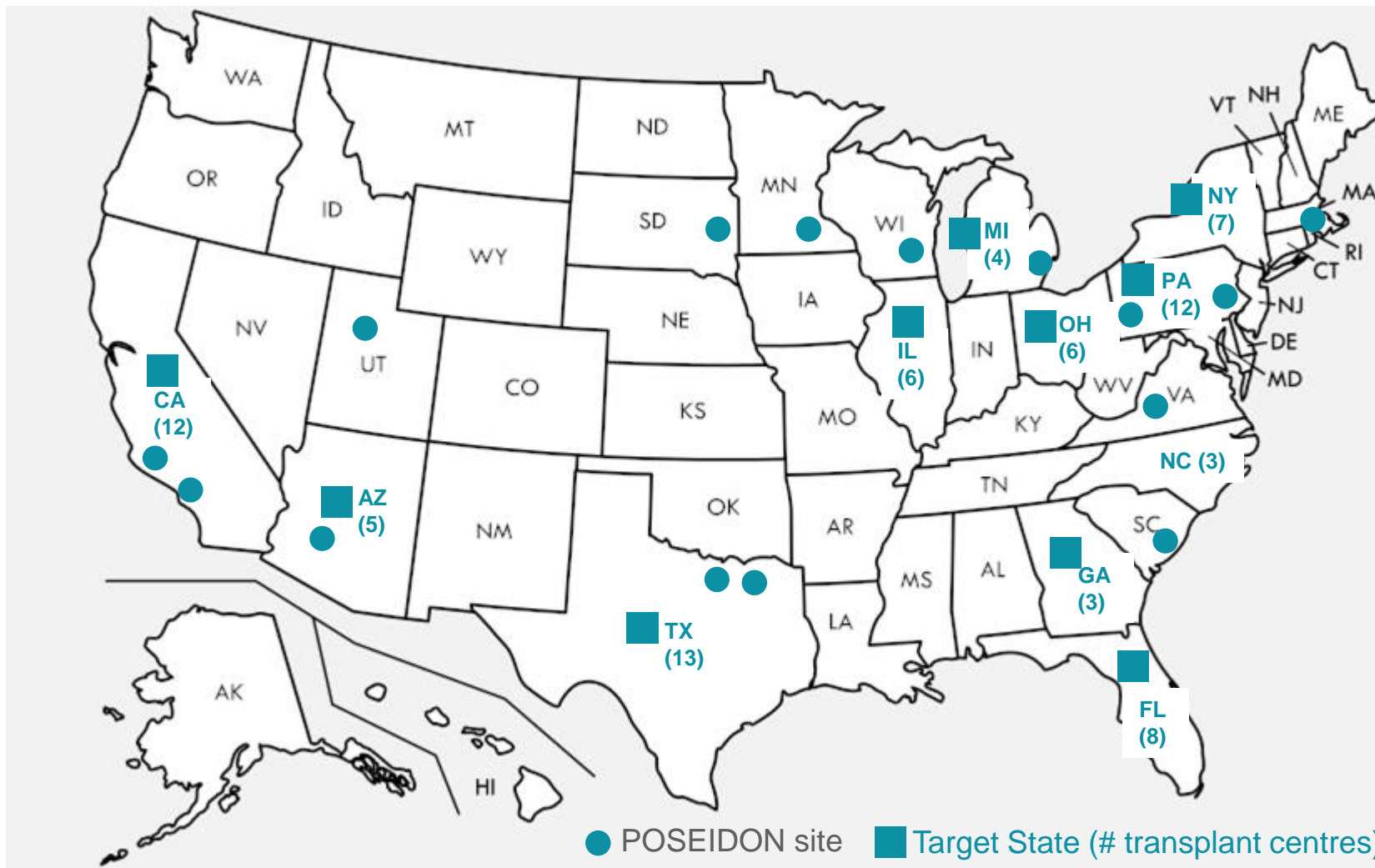


**Final CMS rule for automatic Medicare coverage of breakthrough devices for four years post-approval**

\* Subject to further developments related to the ongoing COVID-19 pandemic

FDA: Food and Drug Administration (US); IDE: Investigational Device Exemption

# US commercialisation through our specialty salesforce



**Initial focus on key transplant centres**

~50-person team:  
35 sales reps, 10 clinical,  
5 corporate



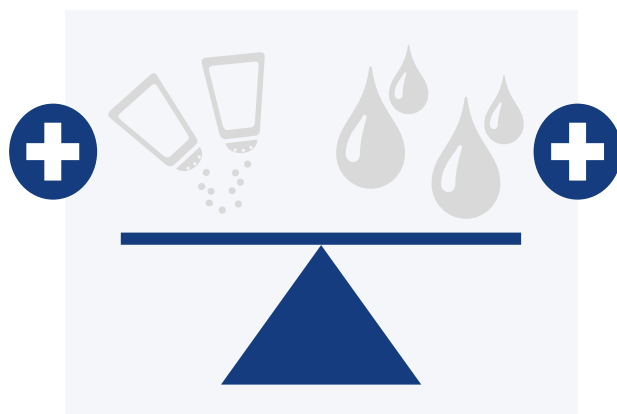


# alfapump DSR<sup>®</sup>

Breakthrough approach to **fluid overload in heart failure** built on proven **alfapump<sup>®</sup>** platform

# Diuretic-resistant fluid overload in heart failure

Key clinical challenge and driver of costs



Excess sodium drives  
fluid overload

US hospitalisations  
annually due to  
HF<sup>(3)</sup>

~1m

90%

HF –  
hospitalisations  
due to fluid  
overload<sup>(3)</sup>



c.5d

Typical  
hospital stay<sup>(4)</sup>

Annual costs of US  
HF-related  
hospitalisations<sup>(4)</sup>

\$13bn

- *40% of heart failure patients on IV loop diuretics have a poor response<sup>(1)</sup>*
- *24% re-admission rate at 30 days<sup>(2)</sup>*

# Direct Sodium Removal (DSR®)

Proprietary approach to fluid overload – supported by interim RED DESERT clinical data

We remove the sodium and then the body “does the math” to maintain serum sodium balance



“DSR represents a new potential therapy for non-renal sodium and fluid removal in edematous disorders such as heart failure”

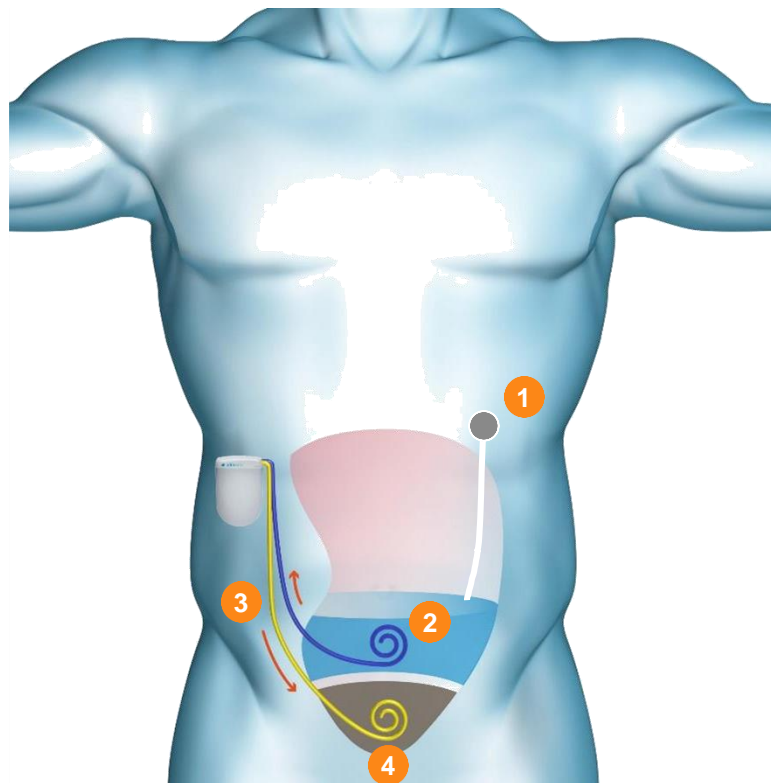
**Circulation** First in Human Experience with Peritoneal Direct Sodium Removal Using a Zero Sodium Solution: A New Candidate Therapy for Volume Overload

Veena S. Rao, Jeffrey M. Turner, Matthew Griffin, Devin Mahoney, Jennifer Asher, Sangchoon Jeon, Peter S. Yoo, Nabil Boutagy, Attila Feher, Albert Sinusas, F. Perry Wilson, ... [Show all Authors](#) ▾

Originally published 8 Jan 2020 | <https://doi.org/10.1161/CIRCULATIONAHA.119.043062> | Circulation .0.null

# alfapump DSR®

Potential chronic therapy for diuretic-resistant heart failure patients with fluid overload

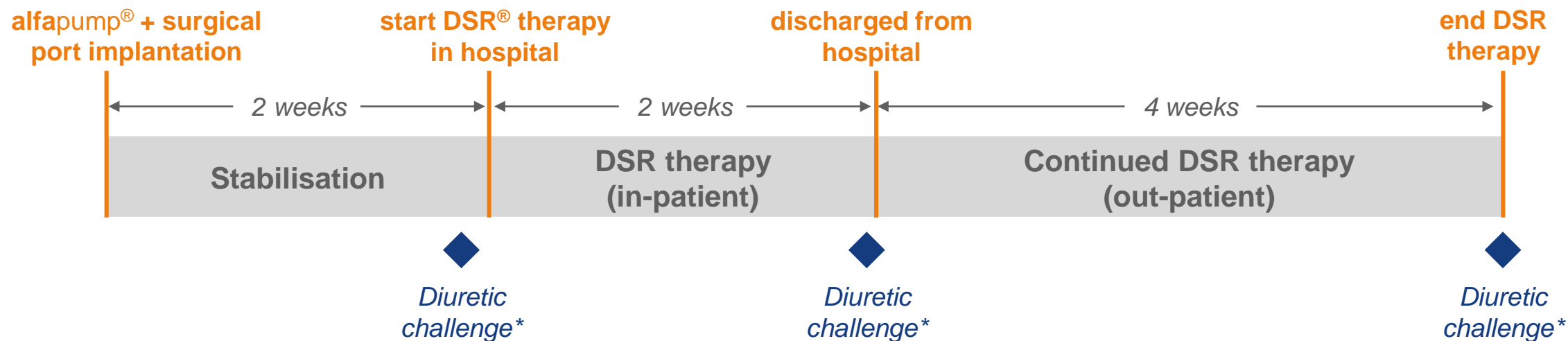


- 1 Sodium-free DSR® infusate administered to peritoneal cavity via implanted port
- 2 Sodium diffuses into DSR infusate
- 3 **alfapump** pumps sodium-rich DSR infusate into the bladder
- 4 Body eliminates excess fluid through osmotic ultrafiltration and urination

*Fundamental patents to reduce fluid overload in heart failure patients granted in US and Europe*

# RED DESERT: Study design

Repeated dose proof-of-concept study of alfapump DSR<sup>®</sup> in diuretic-resistant heart failure patients



✓ **Positive interim results (5 patients) reported**

**Top-line results (up to 10 patients) expected in H1 2021**

\* intravenous dose of 40mg dose furosemide



# Interim RED DESERT: Strong safety & efficacy results

Results from first five patients

## SAFETY

- Implant procedure of **alfapump DSR<sup>®</sup>** and repeated dosing of DSR<sup>®</sup> therapy were **well-tolerated**
- No clinically significant changes in serum sodium levels / **no progressive hyponatremia**
- Reported **adverse events were manageable**

## EFFICACY

- **No diuretics required** in any of the patients during 6-week **alfapump DSR** treatment
- Reduced doses of DSR therapy and / or less frequent DSR dosing in majority of patients  
⇒ maintaining stable to lower weight and NT-proBNP compared to baseline

# Interim RED DESERT: Restored normal kidney response

Results from first five patients

- **Diuretic response restored to near normal levels**
  - Sodium excretion more than doubled after DSR study period (to near normal levels)
- **Long-lasting improvement in diuretic responsiveness**
  - Dramatic reduction in oral loop diuretic dosage in majority of patients at end of DSR study period
  - Major reduction in oral diuretic dosage vs baseline even months after end of DSR study period

- *Indicates DSR therapy is more than just a means to remove sodium and water*
- *Supports intermittent dosing to restore natural kidney response*
- *Potential expansion into other fluid overload indications*

# Developing high value proprietary DSR<sup>®</sup> Infusate

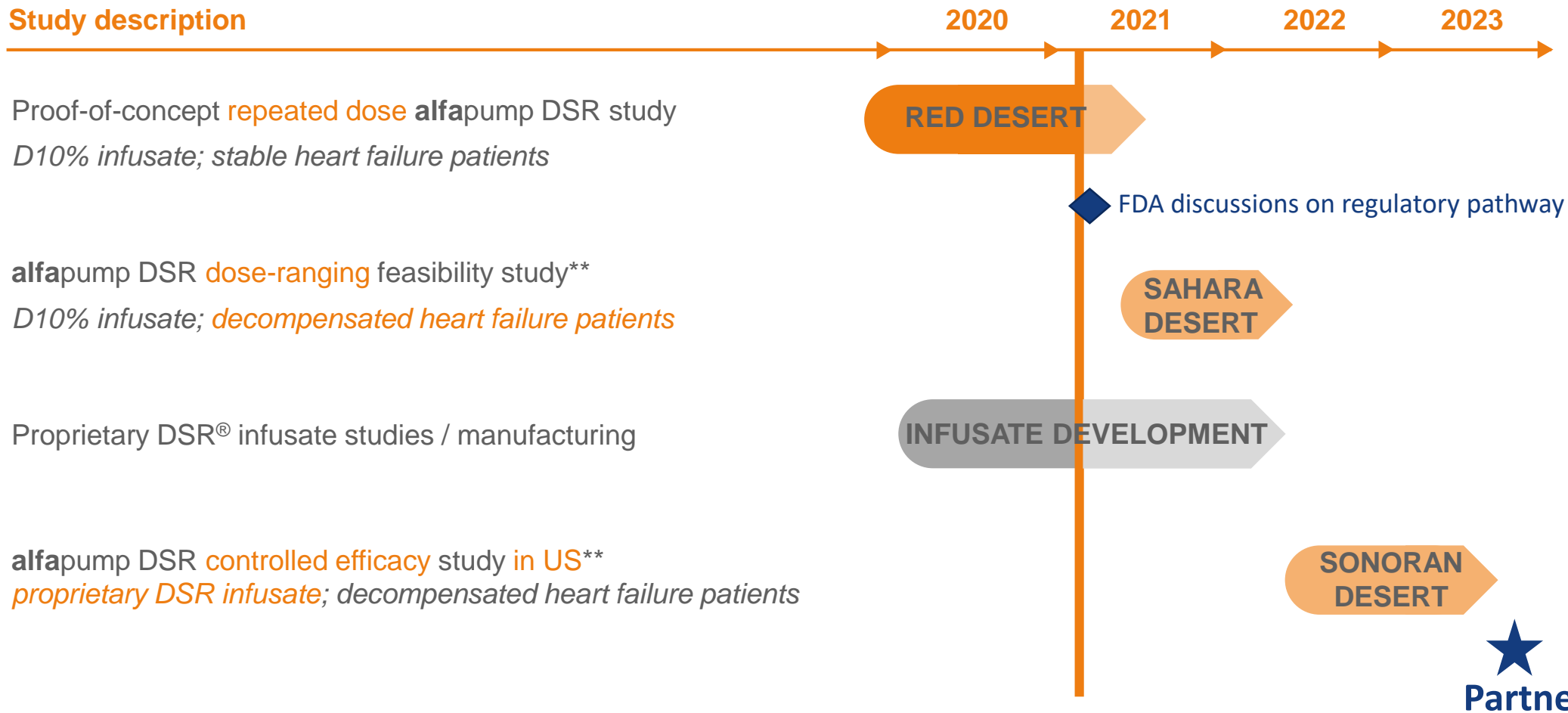
- D10% was chosen as the initial DSR infusate for fastest proof-of-concept
- We are developing our **proprietary next-generation DSR infusate**:



- ✓ Improved therapeutic profile compared to D10%
- ✓ IP protected
- ✓ Recurring revenue from high gross margin consumable

# alfapump DSR<sup>®</sup> development strategy\*

## Study description



\* Timelines subject to further developments related to the ongoing COVID-19 pandemic

\*\* Subject to change and/or feedback from applicable regulatory authorities



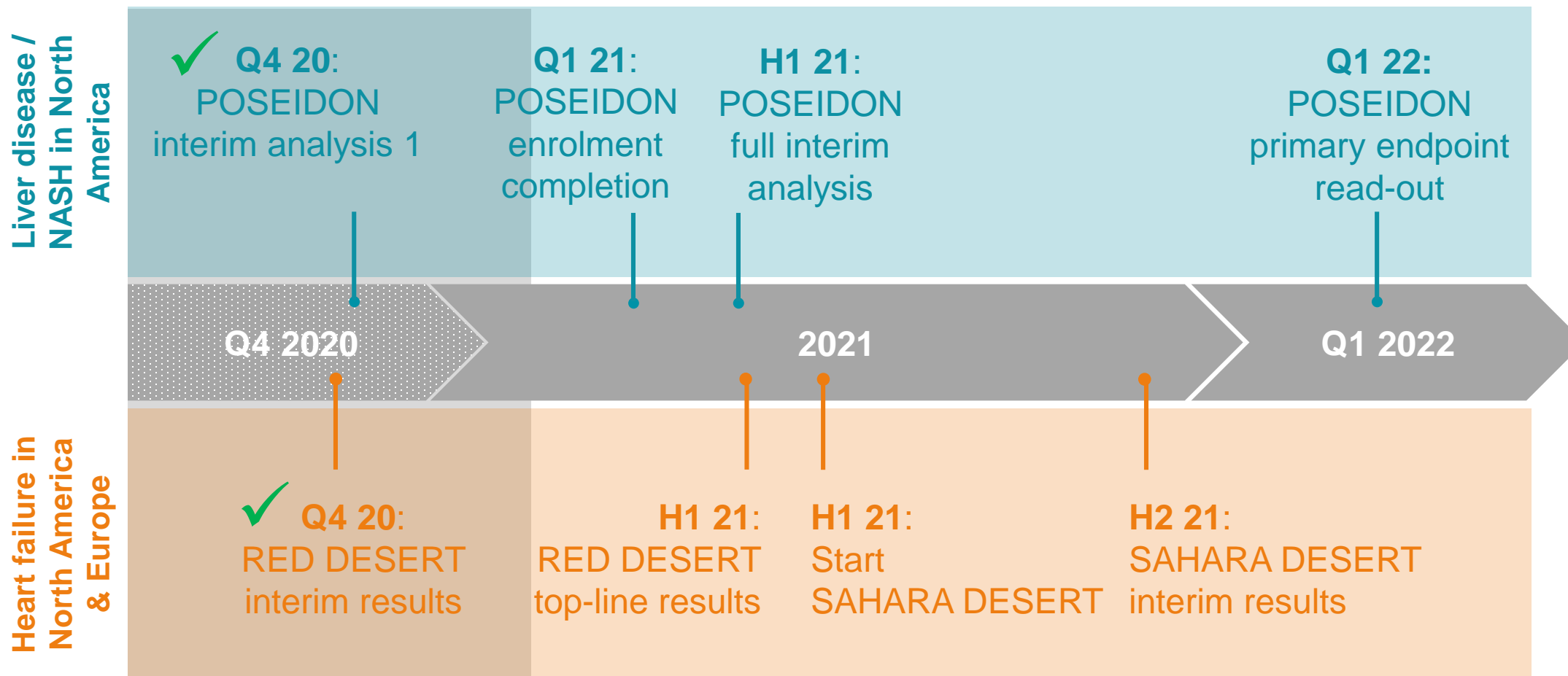
# Outlook

Strong **near term value drivers**  
with clear **long term potential**





# Expected core value drivers & outlook



Note: Presented timelines are subject to further developments related to the COVID-19 pandemic

# Back-up



# Strong organisation

Highly experienced leadership team supported by committed and well-reputed shareholders

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## Executive team:



**Ian Crosbie**  
Chief Executive Officer



**Kirsten Van Bockstaele**  
Chief Financial Officer



**Oliver Gødje**  
Chief Medical Officer



**Gijs Klarenbeek**  
Senior Medical Advisor



**Martijn Blom**  
Chief Commercial Officer



**Timur Resch**  
Global VP QM/QA/RA



**Andreas Wirth**  
VP Engineering

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## Board of Directors:



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Board Chairman



**Ian Crosbie**  
Chief Executive Officer



**Wim Ottevaere**  
Director



**Jason Hannon**  
Director



**Rudy Dekeyser**  
Director

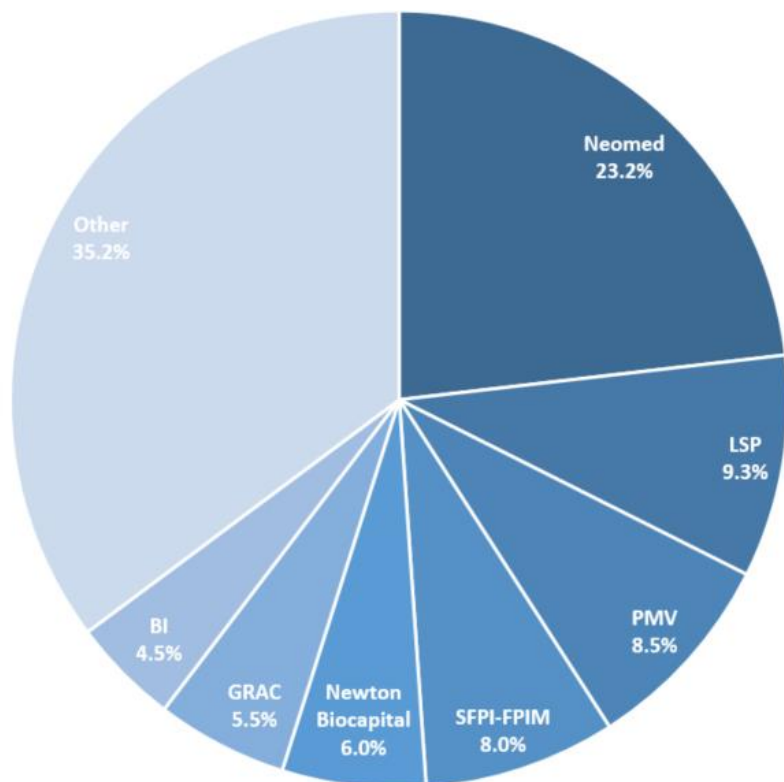


**Erik Amble**  
Director

# Shareholders base and financial overview

Ticker: SEQUA – Euronext Brussels

- Outstanding shares: 18.4M
- Outstanding share options & warrants: 1.8M



- Analysts:
  - KBC Securities – Lenny Van Steenhuyse
  - Kempen – Ingrid Gafanhão
  - Kepler Cheuvreux – Matthias Maenhaut
  - Mirabaud – Daniel Jelovcan
- Cash (30 June 2020): €14.9M
- Debt financing in July 2020: €7.3M
- Equity financing in February 2021: €22.5M
- Cash runway into Q2 2022



# POSEIDON – study cohorts

Patients with recurrent or refractory ascites due to liver cirrhosis in up to 20 centres across US and Canada

## Two study cohorts with the same inclusion / exclusion criteria

### 1 Pivotal Cohort

- Up to 50 patients implanted with the **alfapump**<sup>®</sup>
- For primary and secondary endpoint analysis

### 2 Roll-In Cohort ➡ enables us to report interim data

- Up to 30 patients implanted with the **alfapump**
- To teach clinicians and medical teams at new centres how to use the **alfapump**



# Cirrhotic patients with recurrent or refractory ascites

First 13 patients in Roll-In Cohort of the POSEIDON study

Age (mean)	65 y
MELD score (mean ± SD)	10.5 ± 4.6
Cirrhosis etiology	
- Alcohol	- 61.5%
- NASH	- 23.1%
- Hepatitis C	- 7.7%
- Alcohol, Hepatitis C, and Hepatitis B	- 7.7%
TP per month prior to study (mean ± SD)	3.4 ± 1.8

Willingness to treat earlier stage patients?

NASH is already an important driver of this market

N. American patients appear to have more TP / month compared to Europe

*MELD: Model for End-stage Liver Disease; SD: Standard Deviation; NASH: Non-Alcoholic Steatohepatitis; TP: Therapeutic Paracentesis*





# Leading experts as Heart Failure Scientific Advisors



**Dr. Maria Rosa Costanzo**

Medical Director of the Edward Center for Advanced Heart Failure  
Medical Director Heart Failure Research for the Advocate Heart Institute



**Dr. Wilson Tang**

Professor of Medicine at Cleveland Clinic Lerner College of Medicine at Case Western Reserve University



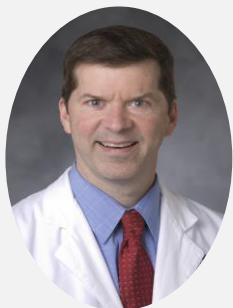
**Dr. Javed Butler**

Professor and Chairman of the Department of Medicine at the University of Mississippi Medical Center



**Dr. Jeffrey Testani**

Associate Professor of Medicine and Director of Heart Failure Research at Yale University School of Medicine



**Dr. Michael Felker**

Professor of Medicine in the Division of Cardiology at Duke University School of Medicine  
Director of Cardiovascular Research at the Duke Clinical Research Institute and Vice-Chief for Clinical Research in the Division of Cardiology



**Dr. Udelson**

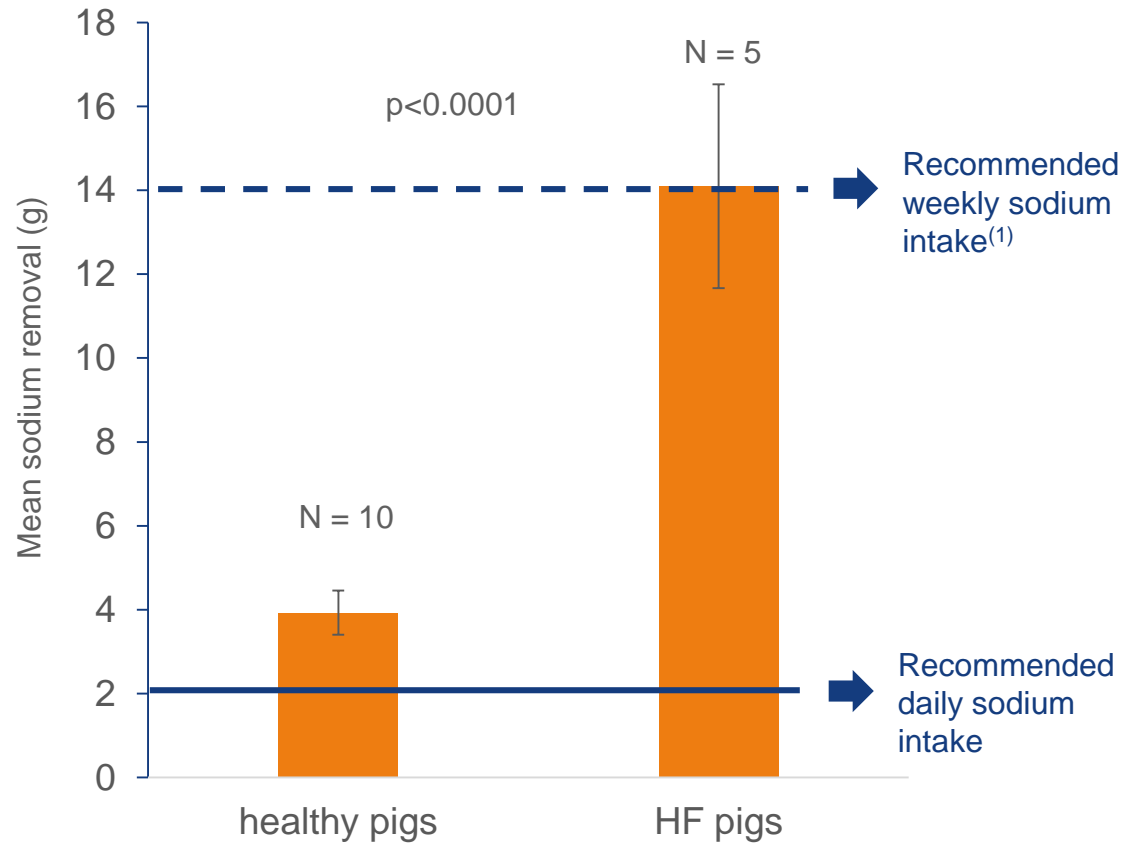
Chief of the Division of Cardiology at Tufts Medical Center  
Professor of Medicine and Radiology at Tufts University School of Medicine



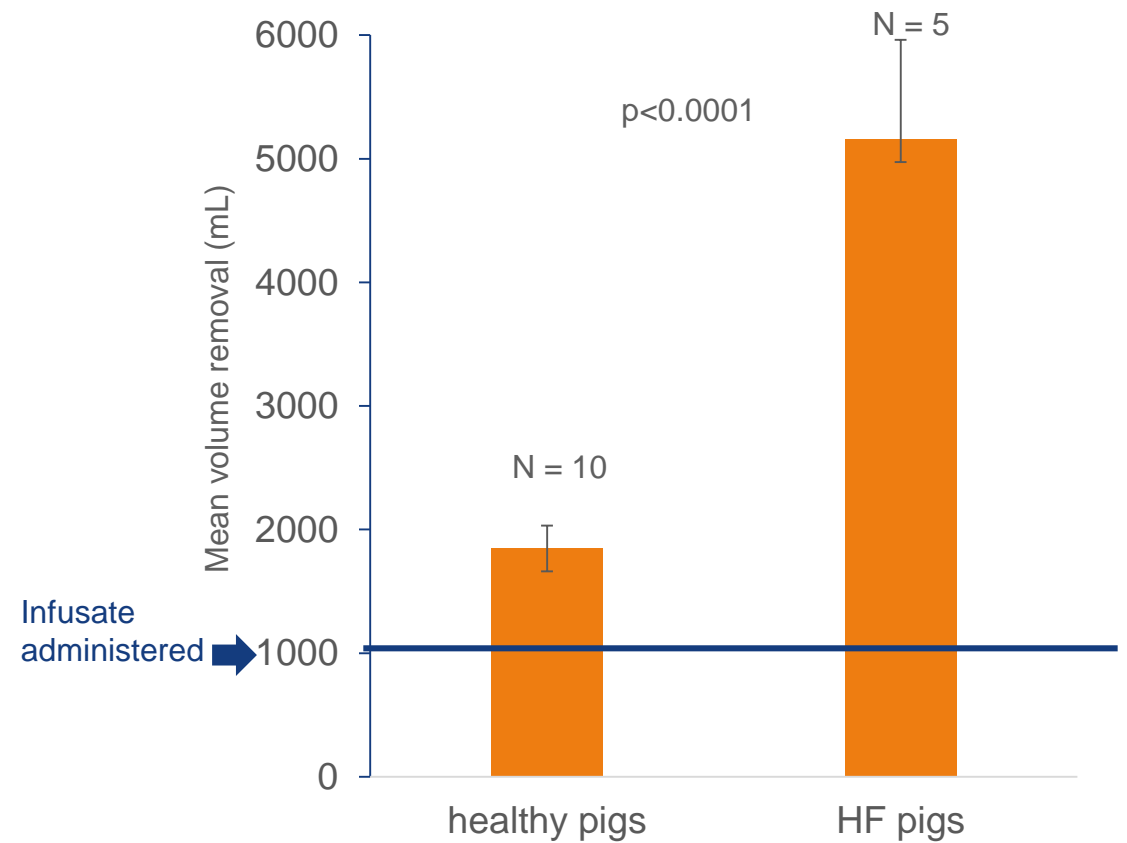
# DSR<sup>®</sup> pre-clinical Proof-of-Concept

Clinically relevant sodium and fluid removal

## Clinically relevant removal of sodium



## Effective fluid removal

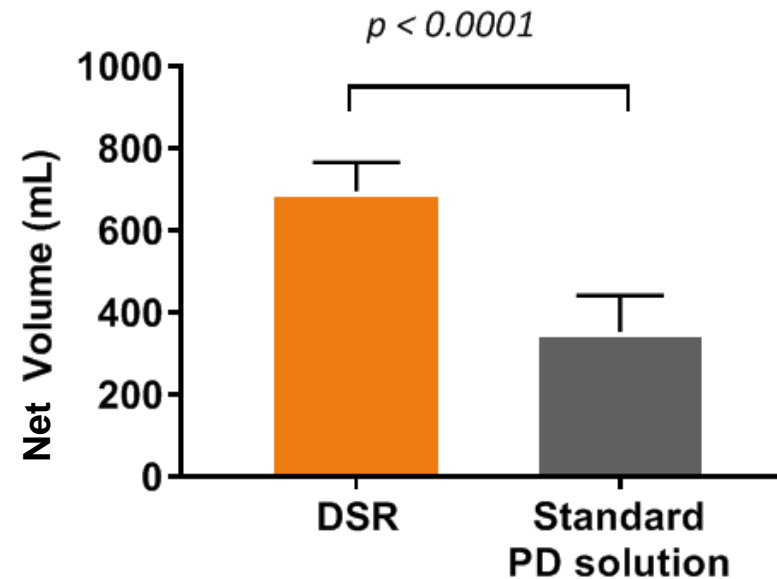
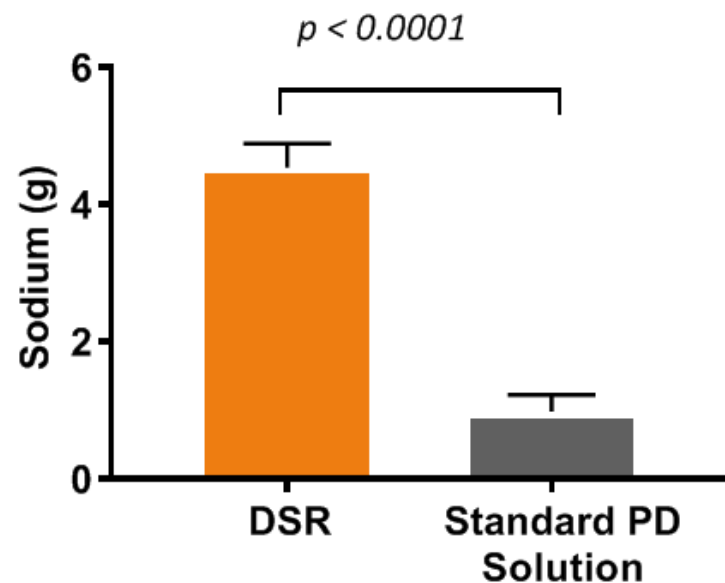


Source 1: Weekly recommended intake for humans equals 14 grams ([www.cdc.gov](http://www.cdc.gov))



# DSR<sup>®</sup> first-in-human study met primary and secondary endpoints

- ✓ DSR therapy was safe & well-tolerated with no adverse events or significant discomfort
- ✓ Substantially higher sodium removal with DSR vs standard Peritoneal Dialysis (PD) solution
- ✓ Minimal inter-patient variability



*Results presented at  
key Cardiac  
Conferences and  
published in  
Circulation*



# Clinical development strategy

Exciting impact on diuretic response requires additional investigation to support value of DSR<sup>®</sup> therapy

## **RED DESERT – repeated dose study in stable heart failure patients**

- Enrol up to five additional patients, with top-line data expected in H1 2021

## **SAHARA DESERT – dose-ranging study in decompensated heart failure patients**

- Move into decompensated heart failure patients with residual congestion
- Dose ranging to learn more about improvement in diuretic response and durability of effect
- Key learnings to be taken into US controlled efficacy study
- D10% as DSR infusate

## **SONORAN DESERT - US study vs. stand of care with proprietary DSR infusate**

- Controlled versus standard of care, in decompensated patients with residual congestion
- Treatment algorithm built upon learnings from SAHARA DESERT
- Paves the way and de-risks FDA pivotal study
- Sequana Medical proprietary DSR infusate

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