



**Corporate
Presentation**
(NASDAQ: CHFS)

March 2021



Safe Harbor Statement

Forward Looking Statement

This presentation contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities and Exchange Act, as amended regarding our plans, expectations, beliefs, estimates, goals and outlook for the future that are intended to be covered by the Private Securities Litigation Reform Act of 1995. Except for statements of historical fact, all forward-looking statements are management's present expectations and are not guarantees of future events and are subject to a number of known and unknown risks and uncertainties and other factors that may cause actual results to differ materially from those expressed in, or implied by, such forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "could," "would," "should," "plan," "predict," "potential," "project," "promising," "expect," "estimate," "anticipate," "intend," "goal," "strategy," "milestone," and similar expressions and variations thereof. Various factors could cause actual results to differ materially from these statements including our ability to execute on our commercial strategy and to grow our Aquadex™ business, the possibility that we may be unable to raise sufficient funds necessary for our anticipated operations, our post-market clinical data collection activities, benefits of our products to patients, our expectations with respect to product development and commercialization efforts, our ability to increase market and physician acceptance of our products, potentially competitive product offerings, intellectual property protection, our expectations regarding anticipated synergies with and benefits of the Aquadex business, our business strategy, market size, potential growth opportunities and the other risks set forth under the caption "Risk Factors" and elsewhere in our periodic and other reports filed with the U.S. Securities and Exchange Commission ("SEC"), including our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 and subsequent reports. We are providing this information as of the date of this presentation we undertake no obligation to update any forward-looking statements contained in this presentation as a result of new information, future events or otherwise. Although the Company believes that the forward-looking statements are reasonable and based on information currently available, it can give no assurances that the Company's expectations are correct. All forward-looking statements are expressly qualified in their entirety by this cautionary statement.

Financial and Statistical Data

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market shares and other data about our industry. These data involve a number of assumptions and limitations and have not been reviewed or audited by our independent registered accounting firm. You are cautioned not to give undue weight to such estimates.

Trademarks

The trademarks included herein are the property of the owners thereof and are used for reference purposes only. Such use should not be construed as an endorsement of such products.

Aquadex FlexFlow® and Aquadex SmartFlow® are registered trademarks of CHF Solutions, Inc.

Aquadex™ is a trademark of CHF Solutions, Inc.

Clarity RMST™ is a trademark of Renal Sense Ltd.



Risk Factors



Investing in our securities includes a high degree of risk. You should consider carefully the specific factors discussed below, together with all of the other information contained in our SEC filings. If any of the following risks actually occurs, our business, financial condition, results of operations and future prospects would likely be materially and adversely affected. This could cause the market price of our securities to decline and could cause you to lose all or part of your investment. Risks include but are not limited to:

- We have a limited history of operations and limited experience in sales and marketing, and we might be unsuccessful in increasing our sales and cannot assure you that we will ever generate substantial revenue or be profitable.
- Our near-term prospects are highly dependent on revenues from a single product, the Aquadex system. We face significant challenges in expanding market acceptance of the Aquadex system, which could adversely affect our potential revenues.
- We have limited commercial manufacturing experience and could experience difficulties in producing commercial volumes of the Aquadex system and related components or may need to depend on third parties for manufacturing.
- We believe that we will need to raise additional capital to fund our operations. If additional capital is not available, we will have to delay, reduce or cease operations.
- We depend upon third-party suppliers, including single source suppliers, making us vulnerable to supply problems and price fluctuations.
- If we cannot develop adequate distribution, customer service and technical support networks, then we may not be able to market and distribute the Aquadex system effectively and our sales will suffer.
- The company may face significant risks associated with international operations, which could have a material adverse effect on business, financial conditions and results of operations.
- The COVID-19 outbreak and other public health threats or outbreaks of communicable diseases could have a material adverse effect on our operations and overall financial performance
- The company is a "smaller reporting company" under federal securities laws and the company cannot be certain whether the reduced reporting requirements applicable to such companies will make the common stock less attractive to investors.

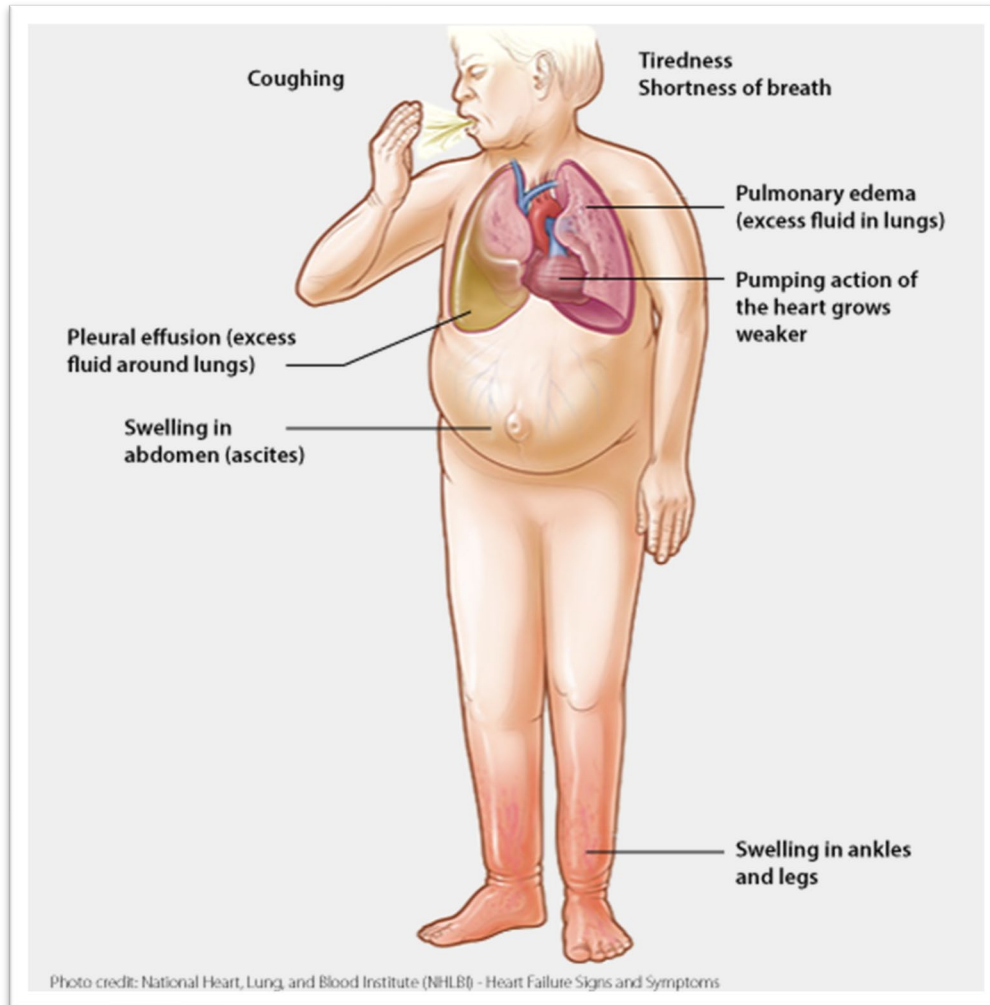
Our Vision



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is dedicated to transforming the lives of patients suffering from fluid overload through science, collaboration, and innovation.

Fluid Overload is a condition where there is too much fluid in the bloodstream, vital organs and interstitial space



90% of all heart failure hospitalizations are due to symptoms of fluid overload¹



Fluid overload is the leading cause of hospital readmission post 30 days following cardiac surgery



Fluid overload is the leading cause of death for critically ill patients in the ICU within 90 days



Pediatric patients born absent renal function & experiencing heart disease are subject to elevated levels of fluid overload

1. Costanzo MR, et al. J Am Coll Cardiol. 2017 May 16;69(19):2428-2445

Diuretics: Standard of care with significant limitations

- >40% of heart failure patients have poor diuretic response¹
- High risk of rehospitalization²
- Long-term use of diuretics has been associated with kidney damage^{1,3,4,5}
- No randomized trials have shown the effects of diuretics on mortality in chronic heart failure patients

1. Testani JM, et al. CircHeart Failure. 2016;9(1):e002370.
2. Costanzo MR, et al. J Am Coll Cardiol. 2017;69(19):2428-2445.
3. Felker MG and Mentz RJ. J Am Coll Cardiol. 2012;59(24):2145-53.
4. Al-Naher et al. Br J Clin Pharmacol. 2018 Jan; 84(1): 5-17.
5. Butler J et al. Am Heart J. 2004 Feb;147(2):331-8.

aquadex

SmartFlow™



**SIMPLE FLEXIBLE
SMART**

A superior solution for fluid overload

- Safe and easy to use
- Flexible application
- Predictably removes excess fluid
- No significant changes to kidney function
- Stabilizes or improves cardiac hemodynamics
- Compared to diuretics, reduces risk of rehospitalization by 53%¹ and readmissions within 30 days by 48%²
- Significantly reduces length of hospital stay when initiated early

**The only device of its kind in the market:
Saving lives, time + money**

1. Costanzo MR, et al. J Am Coll Cardiol. 2007;49(6):675-683.

2. Watson, et. al. Ten Year Experience with Ultrafiltration for the Management of Acute Decompensated Heart Failure. Abington Hospital Jefferson Health, Abington, Pa.

Aquadex SmartFlow: A novel treatment in critically underserved markets

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**PEDIATRIC:
ULTRAFILTRATION**



**U.S. / International
Approval (>20kg)**

**CRITICAL CARE:
FLUID REMOVAL**



**Potential for Treatment
with Aquadex**

**HEART FAILURE:
ULTRAFILTRATION
(Dedicated)**

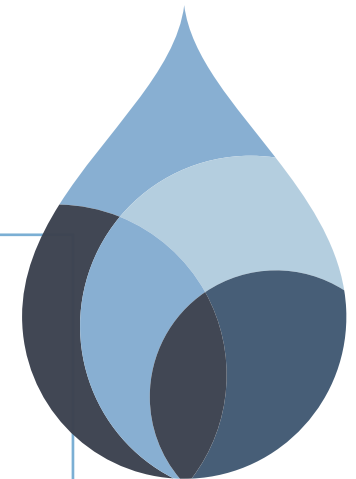


**U.S. / International
Approval**

2020 Achievements + 2021 Key Milestones

EXPECTED TIMING

FDA 510(k) clearance of:	<i>Expanded use in pediatric population ($\geq 20\text{kg}$) Next generation Aquadex SmartFlow console</i>	Completed
Receive CE mark for Aquadex SmartFlow		Completed
RenalSense Clarity RMS Launch		Completed
Submit CPT code application for ultrafiltration using Aquadex SmartFlow		Completed
Methodist Le Bonheur Healthcare System retrospective study on quality improvement measurements including LOS and readmissions out to 60-days. ACC abstract		Q1 2021
10-Yr Experience With Ultrafiltration for the Management of ADHF Patients manuscript; Dr. Beckles post-CV Surgery 42 patients		Q1 2021
Expanded clinical study results of ultrafiltration in tandem with extracorporeal membrane oxygenation (ECMO) in pediatric patients		Q2 2021
Final publication of therapy into advanced liver disease (pre & post transplant) at Mt. Sinai Hospital.		Q3 2021
Heart Failure CPT Code Reimbursement		Q3 2021
Preliminary data from ULTRAPeds pediatric registry		Q4 2021



Targeting growing addressable market segments

\$2B



\$150M Market



\$950M Market



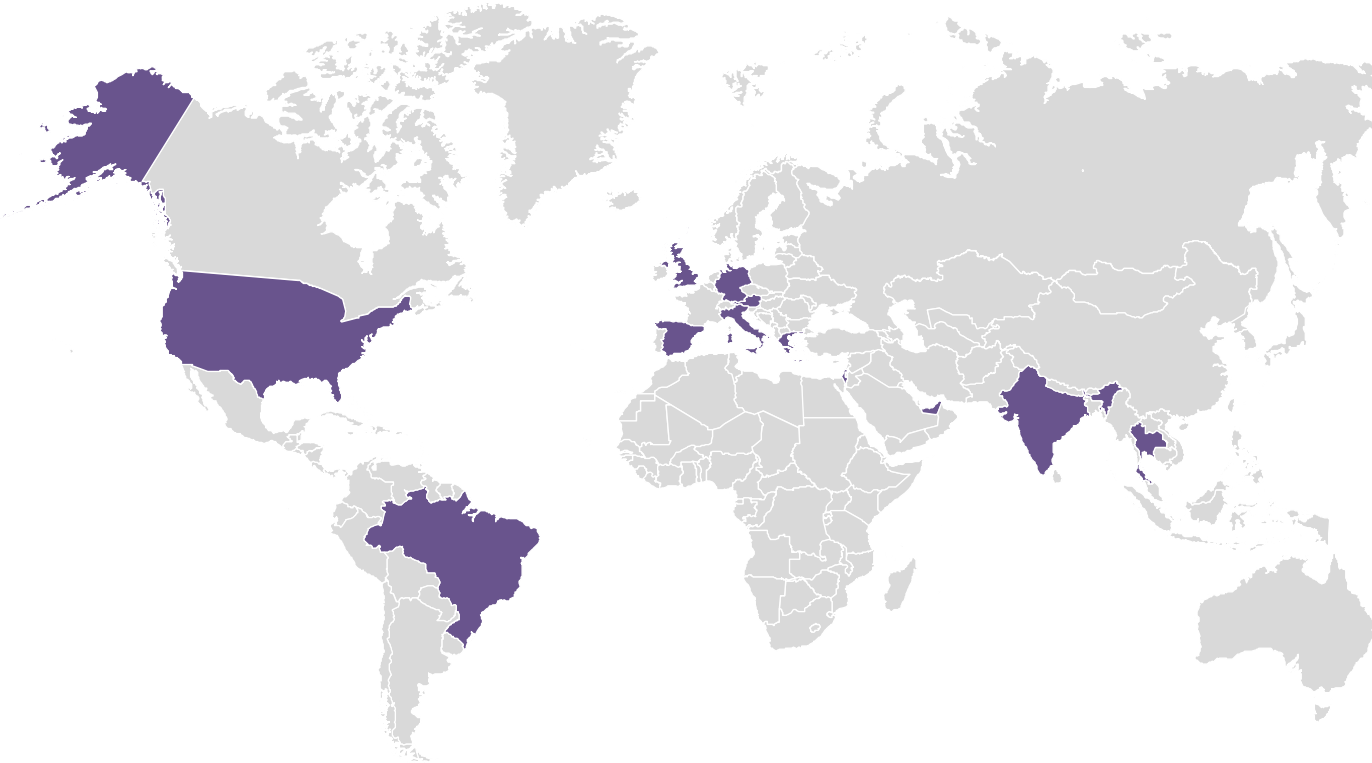
\$900M Market

TREATING THE MOST VULNERABLE

From newborns to the elderly, our therapy is critical to improving care and outcomes

Expanding Commercial Distribution

United States direct sales team
of 13 sales territories and
14 clinical education specialists



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DISTRIBUTION PARTNERS

Brazil

UK

Spain

Germany

Italy

Austria

Greece

Israel

India

Thailand

Singapore

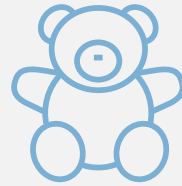
United Arab Emirates

Switzerland

Hong Kong



Pediatric Opportunity



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Pediatric Market Opportunity

\$150
Million

Annual U.S.
Market
Opportunity

41,000

Annual
Incidence

Fully
Commercial

510(k) label in
February 2020
(>20kg.)

\$27,500

Avg Sales
Price

\$940

Consumable
Circuit Price

~4

Circuits per
patient



Uniquely positioned to address significant unmet need in pediatric patients

Aquadex SmartFlow

- First-mover advantage in market where experience/familiarity is critical
- Simple and easy to use for clinicians & nurses
- Requires only 35ml circuit blood volume
- Delivers gentle and precise therapy
- Includes non-invasive diagnostics (Hct & SvO₂) to safely guide therapy by allowing physicians to observe real-time changes in intravascular volume

Competitors

- Circuit blood volume often higher: up to 66% more in some cases
- No blood volume or blood oxygen saturation diagnostics to inform therapeutic decisions
- System complexity → less simple to set up and use for clinicians & nurses
- Limited supply and field support
- One competitor only temporarily FDA-approved with COVID-19 Emergency Use Authorization



Clinical Study – Mortality Benefit in Pediatric Patients

Attributes	Grp 1: <10kg	Grp 2: 10-20kg	Grp 3: >20kg
# of Patients	N=72	N=13	N=34
Primary disease	43% kidney 29% cardiac	54% kidney 31% other	38% kidney 28% cardiac
Survival at end of treatment (AQUADEX)	43 (60%)	13 (100%)	33 (97%)

Group 1 patients traditionally do not receive any kind of therapy

Menon S. et al. CJASN. August 28, 2019.



Investing in real-world clinical data to expand awareness



Purpose

Collect real-world evidence on performance, safety, and utilization

Registry Design (ULTRAPeds)

Prospective, multi-center, single-arm

- 10 sites
- 500 patients minimum

Key Clinical Data:

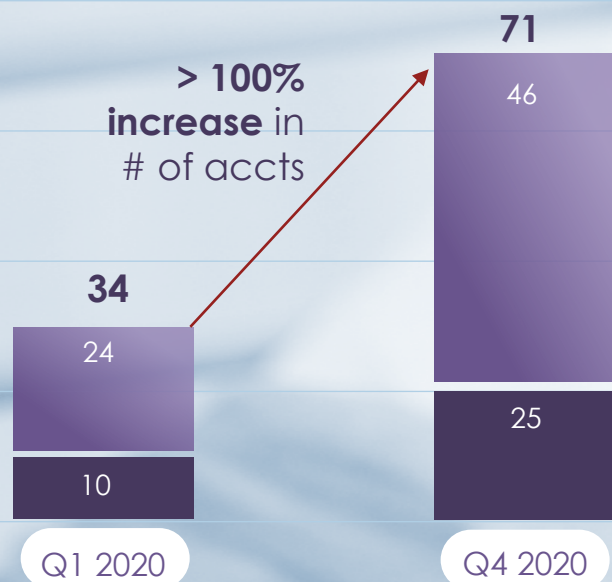
- Treatment course survival
- ICU Survival and Length of Stay
- Change in kidney function
- Hemodynamic stability
- Change in %FO
- Complications/Adverse Events



Growing Pediatric Business

In 3 quarters, we have more than doubled the number of active and pipeline pediatric accounts

of Pediatric Accounts



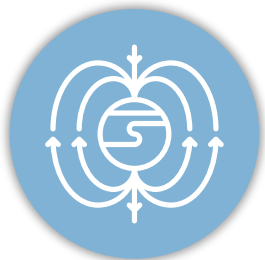
Received 510(k) in February 2020 and launched commercially in March 2020.

Active

Pipeline



Pediatrics: Strategy



ADOPTION + UTILIZATION

Grow awareness and drive adoption



EDUCATION + TRAINING

Invest in patient registry + clinical studies



INDICATION EXPANSION WITH A NEW INTEGRATED PEDIATRIC DEVICE

Grow indication to expand market opportunities

Critical Care Opportunity



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Use of Ultrafiltration in ICU improves outcomes **chf solutions** for Fluid Overloaded Patients

Cardiac
Surgery

520,000
patients/year

Liver
Transplants

8,000
patients/year

VAD

4,000
patients/year

Near Term
Opportunities

Sepsis

7.1M
patients/year

Liver
Disease

650,000
patients/year

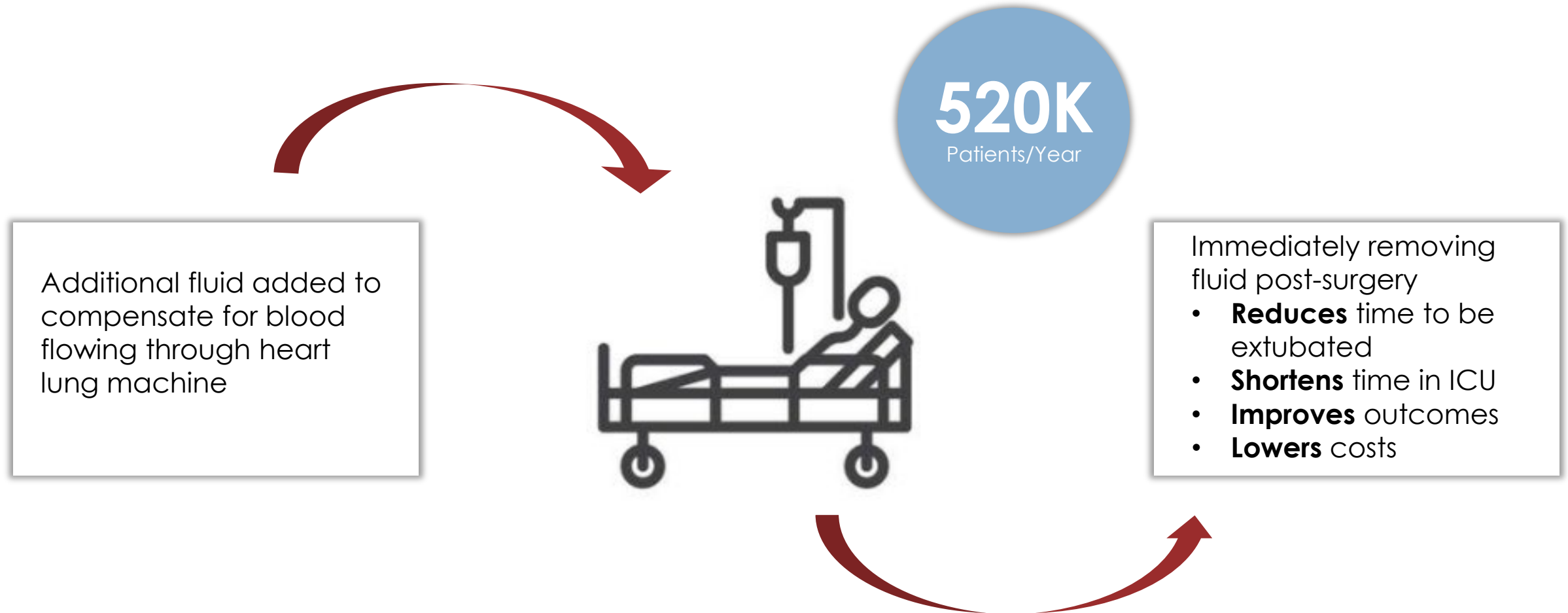
Adult
ECMO

120,000
patients/year

Long Term
Opportunities



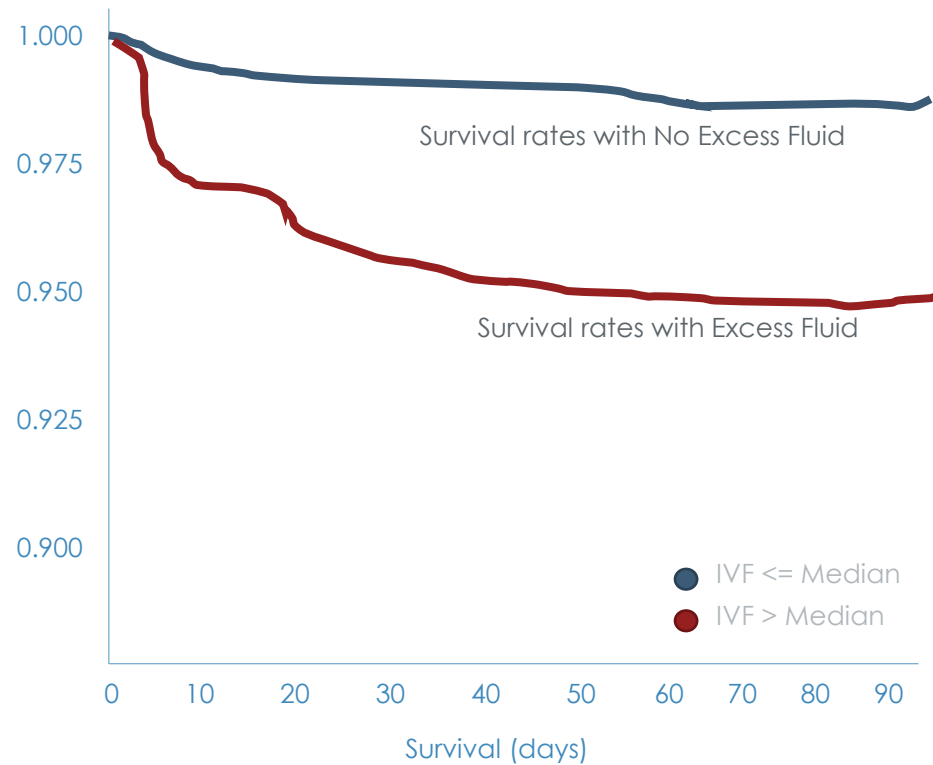
Aquadex SmartFow simply & predictably removes excess fluid post cardiac surgery





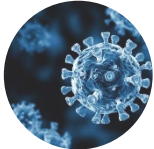
Fluid Overload is Associated with Greater Mortality

90-day mortality by intravenous fluid median



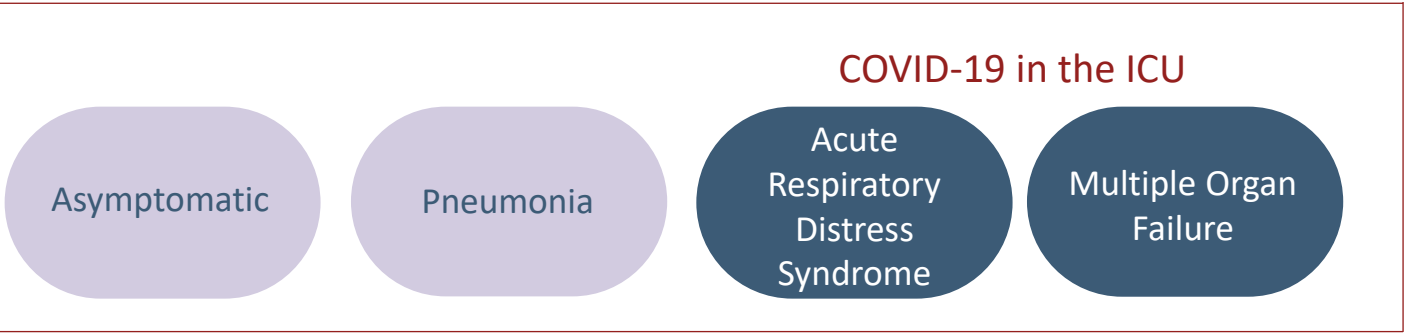
Excess fluid post cardiac surgery leads to **three-fold increase** in mortality at 90 days

Source: Pradeep, A. et al. HSR Proc IC and Car An. 2010 Mar; 2(4): 287-296

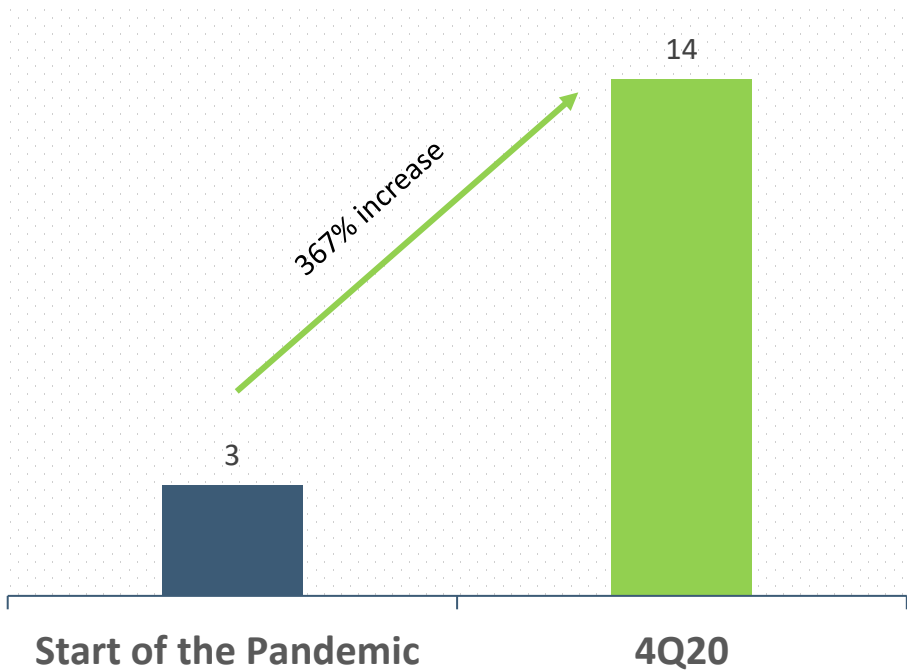


Aquadex SmartFlow Treatment of COVID-19 patients increasing awareness in ICU

Clinical Course of COVID-19



ICU Centers treating COVID-19 Patients



Synergistic effect treating COVID-19 patients is increasing utilization among other non-COVID-19 critically ill patients



Teaming up with RenalSense

Problem

Manual monitoring of urine output and SCr levels is inefficient and inaccurate



Solution

Continuous automated monitoring detects early signs of AKI and improves outcomes

Targeting use of Aquadex system earlier & more frequently in ICU



Critical Care: Strategy



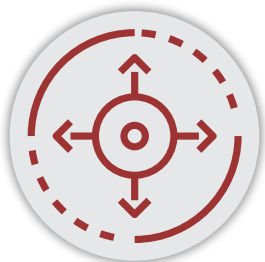
ADOPTION + UTILIZATION

Target high volume ICU centers
Leverage COVID-19 experience



STRENGTHEN HEALTHCARE PARTNERSHIPS

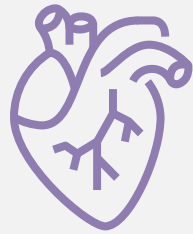
Increase sales synergies with RenalSense
Partner with hospital systems to improve outcomes



EXPANSION WITH THE ADDITIONAL CLINICAL EVIDENCE

Expand beyond cardiac surgery

Heart Failure Opportunity



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Heart Failure: Large unmet need

>1 Million

Annual HF
hospitalizations¹

90%

Hospitalizations
due to fluid
overload¹

50%

patients
discharged with
residual excess
fluid¹

40%

Patients exhibit
diuretic
resistance²

*Per patient **savings** of **\$3,975** over 90 days when **Aquadex System** is used compared to diuretics³*

1. Costanzo MR, et al. J Am Coll Cardiol. 2017 May 16;69(19):2428-2445

2. Testani JM, et al. CircHeart Failure. 2016;9(1):e002370.

3. Costanzo MR, et al. J Med Econ. 2019, VOL. 22, NO. 6, 577-583.



Obtain Ultrafiltration CPT Code to expand access in outpatient setting

Q2'19: Attended CPT Editorial Panel Meeting

Q4'19: ACC Coding Committee recommended ultrafiltration using Aquadex for CPT code

Q1'21: Editorial board recommended the new T-code

Q3'21: Notification of new CPT code (if approved)

Q3'19: Gained support of specialty societies for application

Q4'20: Submitted CPT code application sponsored by RPA and ACC

Q1'22: Effective date of new CPT code (if approved)



10-Year Real-World Experience with Ultrafiltration **chf** solutions

ABINGTON HOSPITAL JEFFERSON HEALTH

- Retrospective, single center analysis
- **335 consecutive** acutely decompensated heart failure patients
- Treated with adjustable rate UF using Aquadex
- Fluid removed weight loss
- Unchanged kidney function

HF HOSPITALIZATIONS

Average **2.14 hospitalizations**
Year **before** Aquadex UF

1 Year After Aquadex UF
Average **0.4 hospitalizations**

HOSPITAL READMISSIONS

NATIONAL AVERAGE

24% at 30 days

50% at 6 months

12.4% at 30 days

14.9% at 90 days

27.3% at 1 year

Source: Watson R, Hummel M et al. HFSA poster session 2020.

1. Costanzo MR, et al. J Am Coll Cardiol. 2017 May 16;69(19):2428-2445



Why Outpatient setting is attractive market?



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- Greater cumulative impact on outcomes through earlier intervention on healthier patients
- Increased revenue by treating more patients
- Uniquely positioned to deliver OP therapy with peripheral venous access



Patients

- Improved patient QoL:
 - Earlier resolution when diuretic therapy cannot relieve congestion → patient feels better faster
 - Reduce hospitalizations through proactive fluid management (rate per patient per year decreased by 81%)¹
 - Readmission avoidance
- Reduced financial burden to patient and family



Hospitals

- Hospitals actively trying to reduce economic burden of heart failure (HF)
- Reduced patient readmissions within 30-days may help decrease costly CMS penalties
- Early intervention may help decrease patient hospital length of stay (LOS)
 - Most US hospitals lose money on HF admissions: average LOS is ~5 days², while DRG payments often cover ≤ 4 days



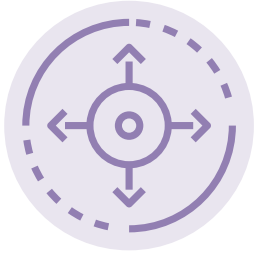
US Healthcare System

- Concern throughout the US healthcare system regarding the growing economic burden of HF treatment
- HF treatment is Medicare's largest expenditure
- CMS controlling HF spending through the Hospital Readmission Reduction Program focused on 30-day readmissions
 - Readmissions after UF treatment with Aquadex was 48% less than nat'l average at 30 days²

1. Watson, et. al. *Ten Year Experience with Ultrafiltration for the Management of Acute Decompensated Heart Failure*. Abington Hospital Jefferson Health, Abington, Pa.
2. Chen J, et al. *J Am Coll Cardiol*. 2013 Mar 12; 61(10): 1078-1088



Heart Failure: Strategy



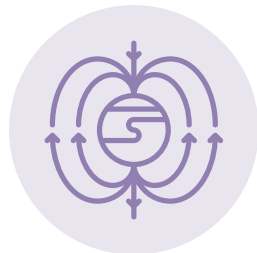
EXPAND INTO OUTPATIENT SETTING

Expand patient access with new CPT code



EDUCATION THROUGH ADVANCED CLINICAL EVIDENCE

Invest in clinical studies to increase awareness
Support CPT Code application



ADOPTION + UTILIZATION

Drive high volume inpatient hospital systems
Ultrafiltration is better than diuretics therapy

Financials & Capitalization

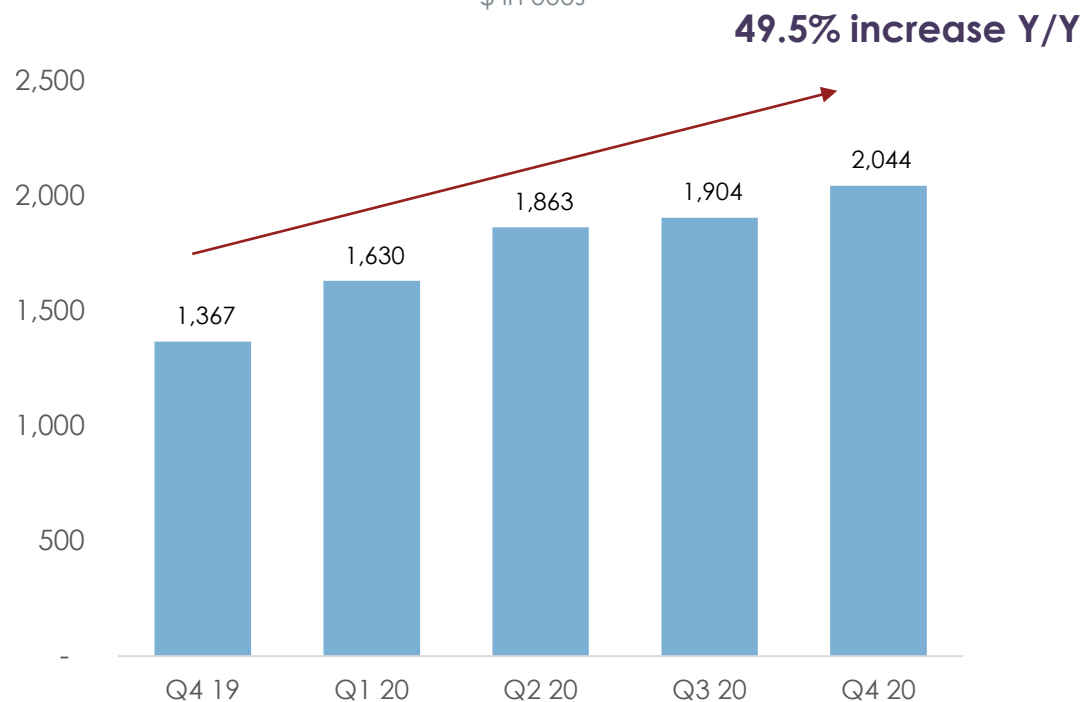


Financial Metrics



Quarterly Revenue

\$ in 000s



Q3 - Q4 2019

Commenced salesforce restructuring and refocus to critical care and pediatrics

2020 growth factors

Pediatric 510(k) late February 2020

Pediatric launch

COVID-19 pandemic – tailwinds and headwinds

Maturing sales organization, strategy and structure

Cash

\$14.4M as of Dec 31, 2020



Capitalization Table

- **Cash:** \$14.4M as of December 31, 2020
- **No Debt**

- (1) From November 2017 offering. Convertible at \$9.0 per share, anti-dilution rights to next offering price
- (2) Consists of 130,312 warrants at \$9.0, price protection down to \$1.65, exp Jan 2025; 138,715 warrants at \$11.18, exp 9/25; 85,506 warrants at \$11.15 exp 10/25, 59,966 warrants at \$12.30, exp 11/25; 1,064,683 at \$13.5; exp 8/25.
- (3) Consists of 19,196 warrants at \$42.3, expire Apr 2025; 40,638 warrants at \$29.83, expire May 2025; and 92,932 warrants exercisable at a weighted average exercise price of \$360.96, expiring Feb 2022-Nov 2024. No anti-dilution rights.

* Share numbers adjusted for stock split effective Oct. 16, 2020

Capitalization as of February 28, 2021

Common Shares Outstanding (Nasdaq CHFS)*	2,736,060
Series F Convertible Preferred ⁽¹⁾	14,224
Warrants from 2020 Financings ⁽²⁾	1,479,182
Other warrants ⁽³⁾	152,766
Options	141,658
Fully Diluted Shares	4,523,890



Investment Highlights

1. Strategically focused on treatment of pediatric & critically ill patients in the ICU (incl. COVID-19)
2. Attractive capital equipment + consumables revenue growth model
3. Fully developed commercial infrastructure
4. Uniquely positioned to penetrate underserved \$150 million pediatric market
5. Investing in real world clinical data to increase pediatric utilization
6. Establishing reimbursement to expand Chronic Heart Failure market in outpatient setting
7. Increased Critical Care sales synergies with Strategic Partnership adjacent markets within heart-kidney care
8. Significant product development and compelling clinical studies (higher level indication)