CytoSorbents

HELPING REDUCE DEADLY UNCONTROLLED INFLAMMATION IN HOSPITALIZED PATIENTS WORLDWIDE

NASDAQ: CTSO

Dr. Phillip Chan, MD, PhD - CEO

BIO CEO & Investor Conference

February 11, 2019

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CytoSorbents is a Leader in Critical Care Immunotherapy

Leading the Prevention or Treatment of
Life-Threatening Inflammation
in the ICU and Cardiac Surgery using
CytoSorb® Blood Purification

CytoSorbents At a Glance (NASDAQ: CTSO $8)

- CytoSorb® is E.U. approved as an extracorporeal cytokine adsorber with 56,000+ cumulative treatments (up from 35,000 a year ago) delivered and distributed in 55 countries
- Record 2018 Financial Performance:

	2017	2018*	Increase
Total Revenue	$15.1M	$22.3M	+48%
Product Revenue	$13.4M	$20.2M	+51%
Blended Product Gross Margin	71%	>72%	-

- Healthy cash balance of $22.3M (12/31/18)*
- 130 employees with international footprint across two wholly-owned subsidiaries
  - CytoSorbents Medical, Inc: Headquarters - New Jersey, USA
  - CytoSorbents Europe GmbH: International sales office - Berlin, Germany
- Strategic Partnerships with Fresenius Medical Care, Terumo, Biocon, Dr. Reddy's
- Strong government support with ~$26M in grants, contracts, other non-dilutive funds
- Russell 2000 & 3000 listed with coverage by Cowen, B Riley, HCW, Maxim, Zacks

*Approximate, reviewed but unaudited financials

Uncontrolled Inflammation is Deadly

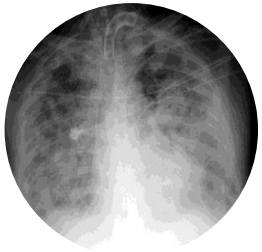
Sepsis

Trauma

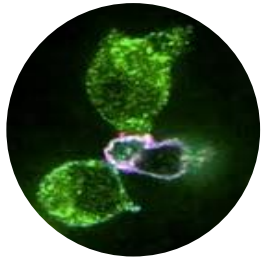
Influenza

Burn Injury

Millions Die Of Uncontrolled Deadly Inflammation Each Year



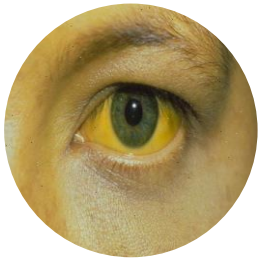
Lung Injury



Cytokine Release Syndrome

Pancreatitis

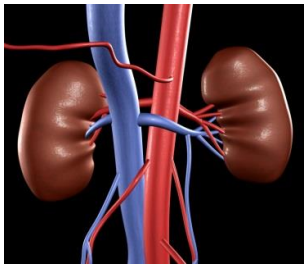
Surgical Complications

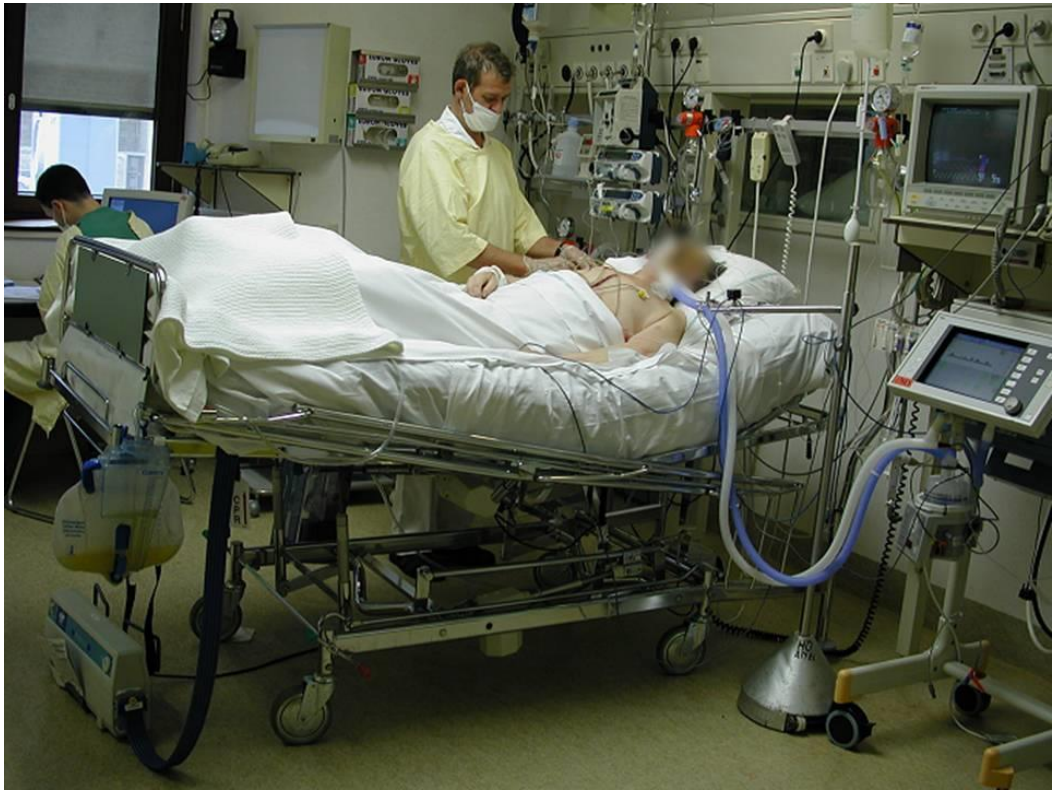


Liver Failure

Massive Inflammation Causes Organ Failure

Organ failure occurs when vital organs stop working,
causing nearly half of all deaths in the ICU.




Little can be done to prevent or treat organ failure today

No Ideal Options to Treat Severe Inflammation

Anti-Inflammatory (too weak)

NSAIDs

Aspirin

Anti-cytokine antibodies

Anti-integrin antibodies

Anti-oxidants

Immunosuppressive (too strong)

Corticosteroids

Chemotherapy

Organ transplant Anti-rejection drugs

Radiation

Immune system ablation

Anti-leukocyte Abs

CytoSorb Bridges the Gap

Anti-Inflammatory (too weak)

- NSAIDs
- Aspirin
- Anti-cytokine antibodies
- Anti-integrin antibodies
- Anti-oxidants

Immunosuppressive (too strong)

- Corticosteroids
- Chemotherapy
- Organ transplant Anti-rejection drugs
- Radiation
- Immune system ablation
- Anti-leukocyte Abs

CytoSorbents™

CytoSorb® Reduces the Fuel to the Fire

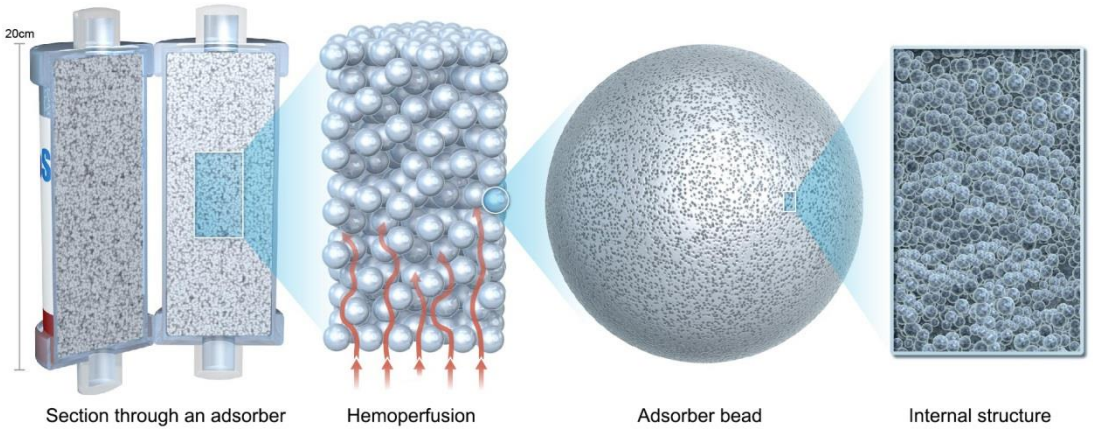
- CytoSorb® targets the $20+ billion opportunity in critical care and cardiac surgery
- Approved in the European Union as the first specifically approved extracorporeal cytokine adsorber
- Broad indication for use where cytokines are elevated
- Removes cytokines and many other inflammatory mediators such as free hemoglobin, bacterial toxins, myoglobin, and activated complement
- Safe and well-tolerated: 56,000+ cumulative treatments delivered, up from 35,000 a year ago

*CytoSorb is not yet approved in the U.S.

CytoSorbents™

Patented Blood Purification Technology

The underlying blood purification technology is based on biocompatible, highly porous polymer beads that act like tiny sponges to remove harmful substances from blood



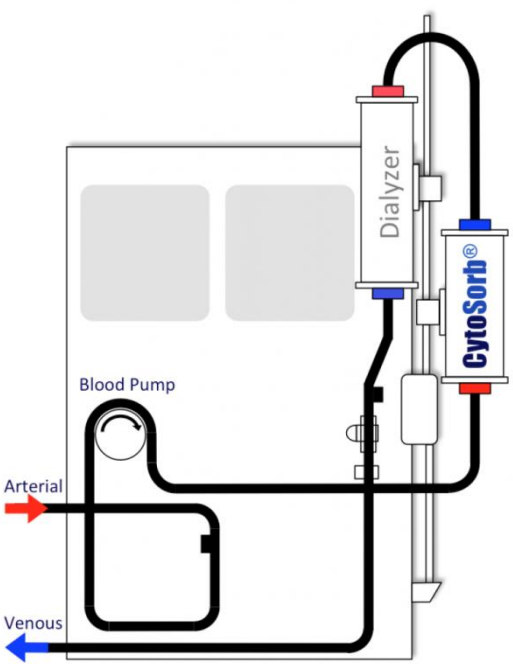
Each bead is about the size of a grain of salt

- Proprietary patented technology with multiple patents pending worldwide
- Manufactured at our ISO 13485 certified facility in New Jersey
- One of the highest grade medical sorbents on medical market today

CytoSorbents™

CytoSorb is “Plug and Play”

Compatible with Existing Dialysis and Heart-Lung Machines



- Place a temporary dialysis catheter in a major vein
- Connect the device to a standard dialysis, ECMO, or heart-lung machine found in hospitals worldwide
- Pump blood out of the body and through the cartridge
- The polymer beads directly contact blood and remove unwanted or toxic substances
- “Purified” blood is pumped back into the patient
- Can treat 70+ total blood volumes per 24 hour treatment
- Each treatment uses a new cartridge

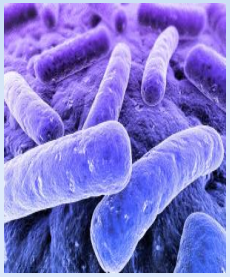
CytoSorbents™

Goal: To Prevent or Treat Organ Failure

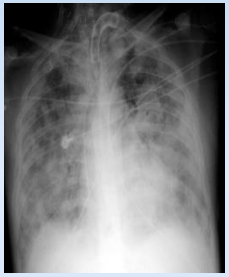
Improve Patient Outcome and Survival

Decrease Costs Of ICU and Patient Care

Sepsis



ARDS



Burn Injury

Trauma

Pancreatitis

Influenza

Surgical

The Potential to Revolutionize Critical Care Medicine

CytoSorbents™

Refractory Septic Shock

Prospective, single arm study in 20 patients with refractory late-stage septic shock using CytoSorb aggressively every 12 hours with a new cartridge

- Patients had refractory shock despite high doses of vasopressors, respiratory failure requiring mechanical ventilation, oligo-anuric kidney failure requiring dialysis, and lactate > 8 mmol/L

- Results from the CytoSorb Greifswald Study
  - Resolution of shock in 65% of patients treated with CytoSorb
  - 28-day survival was 45%, a 30-40% absolute improvement over expected (0-10%)
  - Reduction of IL-6 from an initial average of 87,000 pg/mL to below 10,000 pg/mL after 24 hours of treatment

- A similar population (n=16) receiving standard of care but no CytoSorb therapy, where shock could not be reversed, also on mechanical ventilation with an initial lactate level of 6.1 ± 4 mmol/L, and 75% requiring renal replacement therapy had a mortality of 100% at 28 days.*

- Conrad, M., et. al., "Early prediction of norepinephrine dependency and refractory septic shock with a multimodal approach of vascular failure", J Crit Care, 2015; 30:739-743.
- Friesecke, S, et.al.,"Extracorporeal cytokine elimination as rescue therapy in refractory septic shock: a prospective single center study", J Artif Organs 2017 Sep; 20(3):252-259.

Universitätsmedizin GREIFSWALD

CytoSorbents™

CytoSorb

56,000+ Treatments

55 Countries Worldwide with E.U.

Critical Care

Cardiac Surgery

Recently added Mexico and South Korea with partner, Fresenius Medical Care

United States

Cardiac Surgery

REFRESH I ✓

REFRESH 2 ✓

FDA ○

2021

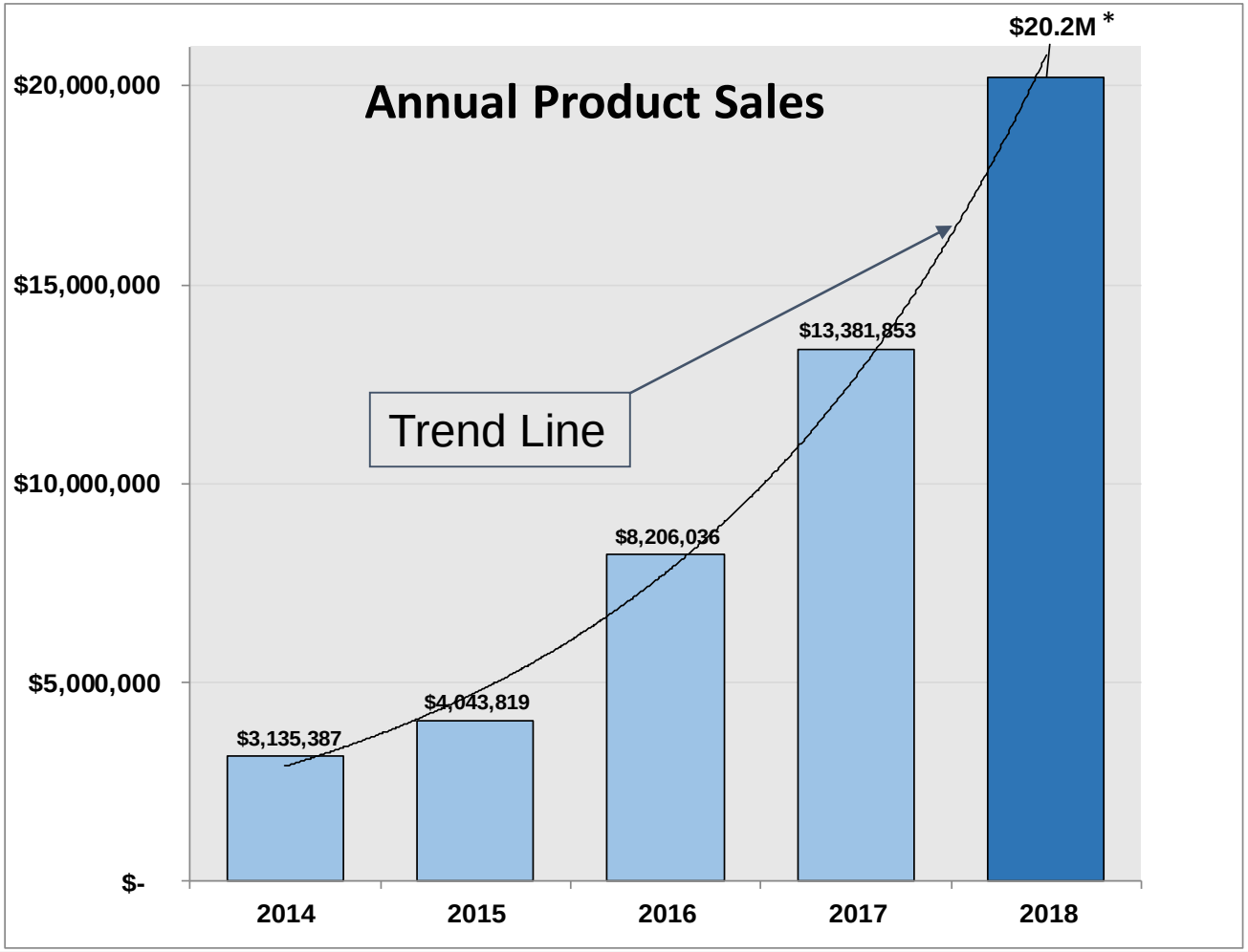
CytoSorbents™

CytoSorb® Is a High Margin "Razorblade"

- High margin "razorblade" fully compatible with existing installed base of "razor" blood pumps: Dialysis/CRRT, ECMO machines (ICU), heart-lung machines (OR)
- Blended gross margins are >72%, expected to rise to ~80% on a quarterly basis in 2019, driven by volume production from our new manufacturing facility
- Average Direct Selling Price is approximately $1,000 per cartridge
- Approximately 1 - 10 cartridges are typically used per patient
- In Germany, 400 hospitals have >400 beds. Each hospital typically sees 300-600 sepsis patients per year. At 3-5 cartridges per patient:
  - Revenue per patient = ~$3,000-5,000
  - Potential revenue per hospital = $1-3M for sepsis alone
- CytoSorb is now fully-reimbursed in most German hospitals using the therapy
- Previously disclosed one German hospital has already achieved sales >$1M, validating revenue model

$20M in Annual Product Sales

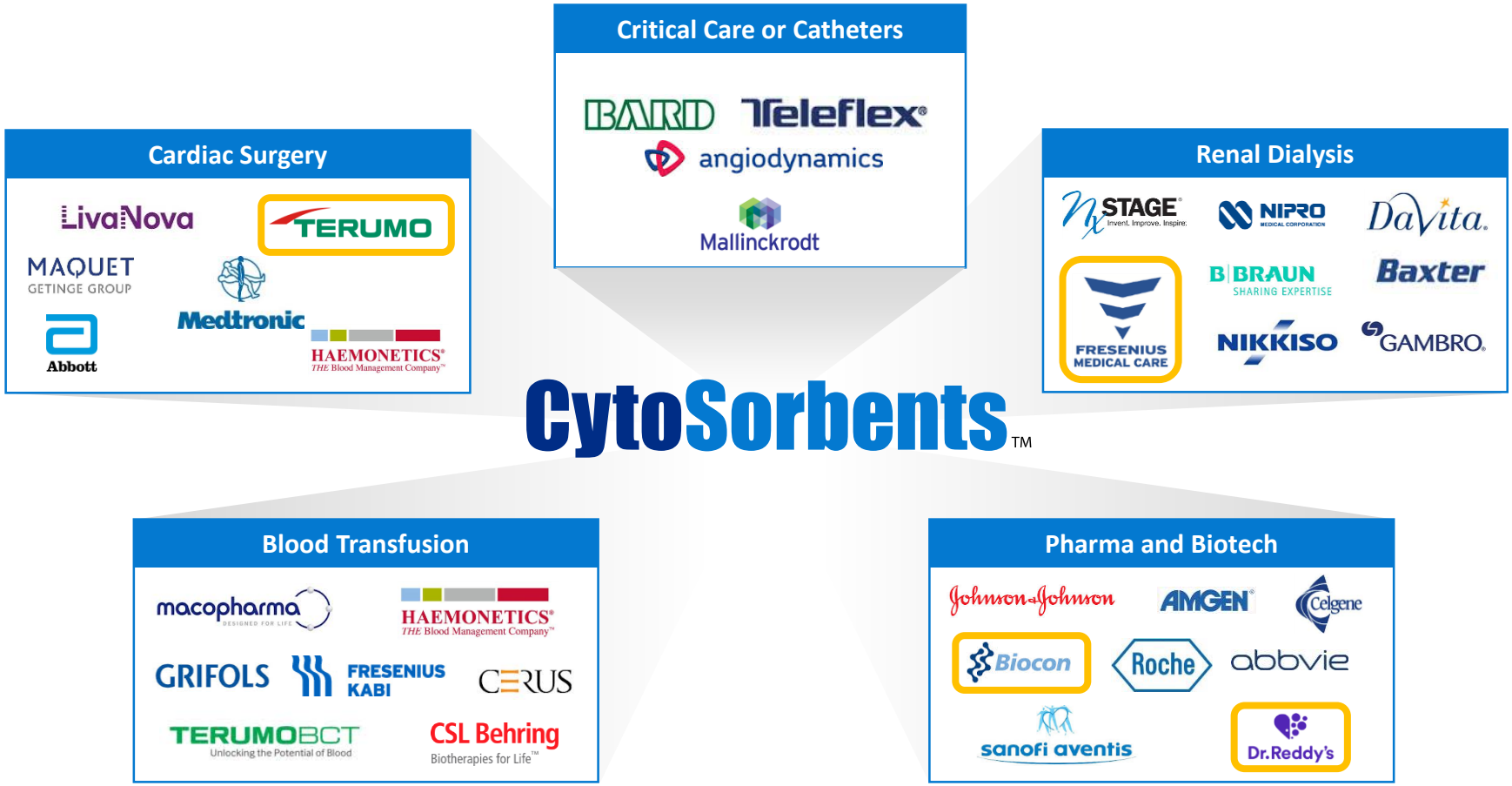
Twenty-six consecutive quarters of year-over-year product sales growth, with a three-year compound growth rate of return ("CAGR") of 71%



*Estimated

CytoSorbents™

Four Major Partnerships, Potential for More



Partnered with leading multinational corporations:
Fresenius Medical Care, Terumo Cardiovascular, Biocon Ltd, and Dr. Reddy's Laboratories

* Companies listed here are used simply as examples of companies in these respective verticals. We make no other representations as to our relationship with any of these companies.

Broad Clinical Program Designed To Drive SOC

- **REFRESH 2-AKI Trial**: 400-patient, U.S. pivotal, multi-center RCT designed to support U.S. FDA approval, using intra-op CytoSorb during high-risk cardiac surgery to reduce the incidence or severity of post-op AKI

- **REMOVE Trial**: 250-patient, multi-center RCT funded by the German government using intra-op CytoSorb during valve replacement surgery for infectious endocarditis to improve clinical outcomes

- **Sepsis Trials:** Numerous planned studies for 2019, including key U.S pilot study

- **Liver Disease and Trauma:** Expanded E.U. label claims allow on-label CytoSorb use for bilirubin reduction to treat acute liver disease and myoglobin reduction to treat severe trauma

- **Cytokine Release Syndrome (CRS) in Cancer Immunotherapy:** New recent successful CytoSorb non-CAR T-cell CRS case in 13 year old girl with refractory ALL highlights potential. Dr. Carl June, CAR T-cell pioneer at University of Pennsylvania, joined SAB in 2017

- **Many Investigator-Initiated Studies Ongoing Worldwide**

Near-Term Potential Catalysts

- Expected significant growth in sales and usage of CytoSorb, driven by:
  - Clinical data in more applications
  - Reimbursement in key territories
  - Investments in infrastructure and human capital to support our direct, distributor, and partner sales
- 2019 blended product gross margin expansion to 80% on a quarterly basis
- Potential new partnerships and expansion of existing partnerships
- Ramping of pivotal REFRESH 2-AKI and REMOVE studies
- Start of HemoDefend pivotal US Trial
- Publications of clinical and research data
- Expanded institutional ownership and analyst coverage

CytoSorbents™

CytoSorbents™

Working to Save Lives Through Blood Purification

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