HELPING TO TREAT INFLAMMATION AND DEADLY CONDITIONS IN INTENSIVE CARE AND CARDIAC SURGERY

NASDAQ: CTSO
Investor Presentation
August 2021
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CytoSorbents

Leading the Prevention or Treatment of Life-Threatening Inflammation and Cytokine Storm and other Deadly Conditions in Intensive Care and Cardiac Surgery using Blood Purification
CytoSorbents At a Glance (NASDAQ: CTSO)

• CytoSorbents is a rapidly growing international NASDAQ-traded medical device company: ~210 employees, $43.3M in TTM product sales & $65.6M in cash (6/30/21)

• CytoSorb® is E.U. approved and commercialized in 68 countries as an extracorporeal cytokine adsorber to help treat deadly inflammation where cytokines are elevated (e.g. “cytokine storm”).

• Overall, we have shipped more than 143,000 devices to date. Also, treated >6,500 COVID-19 patients in 30+ countries, including in the U.S. under FDA Emergency Use Authorization for use in critically-ill, adult COVID-19+ patients with respiratory failure

• CytoSorb is also E.U. approved to remove the blood thinners Brilinta® (ticagrelor) and Xarelto® (rivaroxaban) during cardiothoracic surgery as well as bilirubin (liver dialysis) and myoglobin (trauma)

• CytoSorb and DrugSorb-ATR are on a parallel path to potential U.S. FDA approval
  • Initiating U.S. STAR-T pivotal study of DrugSorb-ATR under FDA Breakthrough Designation to remove Brilinta (ticagrelor) during urgent cardiothoracic surgery – targeting up to $500M total addressable market in the U.S.
  • U.S. REFRESH 2-AKI Trial – 400 patient pivotal study using CytoSorb intraoperatively to reduce post-op AKI

• Partnered with leading companies:

* CytoSorb has been authorized by the FDA under an EUA for use in COVID-19 patients and will remain active until terminated by the Agency. The CytoSorb device has neither been cleared nor approved for the indication to treat patients with COVID-19 infection.
# Products and Product Pipeline

Internal development supplemented by strong government support with ~$40M in grants, contracts, other non-dilutive funds awarded to date for our technology from DARPA, NIH, NHLBI, U.S. Army, U.S. Air Force, HHS, and others.

<table>
<thead>
<tr>
<th>Marketed Products</th>
<th>Under Development Products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ECOS-300CY®</strong></td>
<td><strong>DrugSorbATR</strong></td>
</tr>
<tr>
<td>Sepsis, Critical Care, High Risk Surgery</td>
<td>Removal of Antithrombotics</td>
</tr>
<tr>
<td>Ex Vivo Organ Perfusion For Transplant</td>
<td>HemoDefend RBC</td>
</tr>
<tr>
<td>VETRESQ®</td>
<td>HemoDefend BGA</td>
</tr>
<tr>
<td>Critical Illnesses in Animals</td>
<td>CytoSorb-XL</td>
</tr>
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<td>K+ontrol</td>
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<td></td>
<td>ContrastSorb</td>
</tr>
</tbody>
</table>
What does CytoSorb do and how does it work?
### Targets Deadly Conditions That Afflict Millions of People

<table>
<thead>
<tr>
<th>Critical Care</th>
<th>Cardiothoracic Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uncontrolled inflammation</strong> can spiral out of control, leading to failure of vital organs and death</td>
<td><strong>Highly invasive, with major risk of bleeding, shock, severe inflammation, infection, sepsis, and others</strong></td>
</tr>
<tr>
<td><strong>Sepsis</strong></td>
<td>Life-threatening bleeding due to antithrombotic “blood thinners”</td>
</tr>
<tr>
<td><strong>Influenza</strong></td>
<td><strong>Infective Endocarditis</strong></td>
</tr>
<tr>
<td><strong>COVID-19</strong></td>
<td><strong>High Risk Procedures</strong></td>
</tr>
<tr>
<td><strong>Lung Injury</strong></td>
<td><strong>Pancreatitis</strong></td>
</tr>
<tr>
<td><strong>Trauma</strong></td>
<td><strong>Liver Failure</strong></td>
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<tr>
<td><strong>Surgical Complications</strong></td>
<td><strong>Burn Injury</strong></td>
</tr>
<tr>
<td><strong>Cytokine Release Syndrome</strong></td>
<td><strong>Infective Endocarditis</strong></td>
</tr>
</tbody>
</table>

Uncontrolled inflammation can spiral out of control, leading to failure of vital organs and death. Surgical Complications can lead to life-threatening bleeding due to antithrombotic “blood thinners.” High risk procedures include Infective Endocarditis and Pancreatitis. Critical care conditions such as Sepsis, Influenza, and COVID-19 can cause severe inflammation, infection, and sepsis. Cardiothoracic surgery is highly invasive, with major risk of bleeding, shock, severe inflammation, infection, and others.
A Powerful New Approach to Controlling Inflammation

CytoSorb has been used and well-tolerated in more than 143,000 cumulative treatments as a way to treat cytokine storm and reduce the “fuel to the fire” of 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

**GOALS OF TREATMENT**
- Improve Patient Outcome & Survival
- Decrease Costs Of ICU & Patient Care
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.

- Proprietary patented technology with 18 issued U.S. patents and multiple patents issued and pending worldwide.
- Manufactured at our ISO 13485 certified facility in New Jersey.

Each bead is about the size of a grain of salt.
CytoSorb is “Plug and Play” Compatible

Compatible with Existing Blood Pump Infrastructure In Hospitals Today

**Dialysis or CRRT**
(Continuous Renal Replacement Therapy)

**ECMO**
(Extracorporeal Membrane Oxygenation)

**Hemoperfusion**
(Standalone Treatment)

**CPB**
(Cardiopulmonary Bypass)
What is the Company’s business model and financial performance?
CytoSorbents has a strong hybrid sales model. 68 countries worldwide and >143,000 devices shipped. Critical Care and Cardiac Surgery.

Direct sales in 10 countries:
Germany, Austria, Switzerland, Belgium, Poland, Netherlands, Denmark, Norway, Sweden, Luxembourg.

Distributor and Partner sales in 58 other countries
Entered U.S. under FDA EUA, added Mexico and South Korea with partner, Fresenius Medical Care, and expanded extensively in Latin America.
CytoSorb Commercialization Focus

**By Market**

- Critical Care: 67%
- Cardiac Surgery: 33%
- Sepsis and Septic Shock: 50%
- Other Critical Care: 17%
  - ARDS
  - Reversal of Shock
  - Trauma
  - Acute Liver / Pancreatic
  - Many Others

**By Geography**

- Germany - Direct: 51%
- Other Direct: 17%
- Distributor / Partner: 32%
  - Austria
  - Switzerland
  - 7 other countries

2020
CytoSorb is a High Margin “Razorblade”

• High margin “razorblade” fully compatible with existing installed base of “razor” blood pumps: Dialysis, CRRT, and ECMO machines (ICU), and heart-lung machines (OR)

• Blended gross margins were 82% in Q2 2021, driven by volume production from our new manufacturing facility and manufacturing efficiencies.

• Average Direct Selling Price is approximately $1,000 per cartridge

• ~1 - 5 cartridges are typically used per patient depending on the course of treatment
  • Open heart surgery: 1-2 cartridges
  • Sepsis: 3-5 cartridges (or the cost of roughly 1 day in the ICU)
  • ARDS and ECMO: 5+ cartridges

• 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

• Previously disclosed one German hospital with sales >$1M, broadly adopting the use of CytoSorb in critical care and cardiac surgery, validating revenue model. Other hospitals are tracking along same path, giving us visibility on future growth
Q2 2021 product sales were among our best, up 19% from a year ago. Excluding COVID-19 sales, core product sales were a record $9.7M, +38% Y-Y
TTM Product Sales & Blended Gross Margins

![Graph showing TTM Product Sales & Blended Gross Margins from Q2 2015 to Q2 2021. The graph displays the increase in Product Sales and Blended Gross Margin, adjusted for non-recurrent charges. The values include:

- Q2 2015: $3.4 million
- Q2 2016: $6.0 million
- Q2 2017: $10.4 million
- Q2 2018: $17.4 million
- Q2 2019: $21.0 million
- Q2 2020: $30.0 million
- Q2 2021: $43.3 million

The graph also indicates a steady increase in Product GM% from 60% in Q2 2015 to 85% in Q2 2021. The green line represents Blended Gross Margin, adjusted for non-recurrent charges. The blue bars represent Product Sales.]

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CytoSorbents®
What are the catalysts for growth?
Strategy For Continued High Margin Growth

- New Clinical Data
- Direct Sales
- New and Existing Applications
- Global Expansion
- Scaled Manufacturing

INVESTMENT
COVID-19 has put a spotlight on CytoSorb as a broad spectrum treatment of complications of uncontrolled, severe hyperinflammation, such as ARDS, shock, and kidney failure, caused by cytokine storm and other factors.

CytoSorb has been used to treat >6,500 critically-ill COVID-19 patients in 30+ countries:
- Reduction of cytokine storm and inflammatory mediators such as IL-6, ferritin, CRP, and others
- Improved respiratory function in ARDS and weaning from mechanical ventilation and ECMO
- Improved hemodynamic stability and reversal of shock

CytoSorb received U.S. FDA Emergency Use Authorization in April 2020, enabling CytoSorb to be commercially sold to all hospitals in the U.S. for use in adult, critically-ill, COVID-19+ patients with imminent or confirmed respiratory failure.*

CytoSorb is now distributed in 68 countries worldwide. We believe COVID-19 has accelerated uptake, particularly in the distributor and strategic partner channel, that will fuel continued sales momentum post-COVID-19.

* CytoSorb has been authorized by the FDA under an EUA for use in COVID-19 patients and will remain active until terminated by the Agency. The CytoSorb device has neither been cleared nor approved for the indication to treat patients with COVID-19 infection.
Expanding Manufacturing Capacity to $300-400M

- Our current manufacturing facility has capacity for ~$80M in sales

- Lead time to build out, qualify, and validate is approximately 2 years

- We are currently building out our new headquarters in Princeton, NJ which will house our new manufacturing facility that is expected to increase manufacturing capacity by 5x to $300-400M in annual sales

- Capital expenditures to build out facility is ~$7M, an excellent ROI

- In addition to larger reactors, we are planning increased efficiency through more automation

- New facility is expected to significantly drive down COGS and expand product gross margins beyond 85% due to volume manufacturing
Doubled Workforce to 210+

November 2018

Increased headcount focused heavily on commercialization and manufacturing to drive growth

June 2021
Direct Sales Focus on Germany

- Germany is the largest medical device market in the E.U. and the third largest in the world. The German market alone represents a $1.0-1.5 billion total addressable market for CytoSorb

- CytoSorb has a strong foundation for growth in Germany
  - Outstanding sales team, including sales reps, product, technical, and clinical support
  - Strong key opinion leader support
  - Dedicated reimbursement supported by major medical societies
  - Penetration into hundreds of hospitals throughout the country
  - Multiple promising therapeutic applications
Catalyzing CytoSorb Sales in Germany

- In 2020, Germany accounted for ~50% of our overall product sales. Have now sub-divided Germany to shrink territories to allow maximization of revenue opportunity. Enables focus and growth of key accounts, increased efficiency due to shorter travel, and ability to detail small and mid-sized hospitals better.

- In 2020, we more than doubled Germany sales reps/specialists from 8 to 18. As COVID-19 fades, and reps are allowed back into hospitals, we expect productivity to increase from existing sales reps by focusing and growing key accounts, and rapid productivity for new reps, as they will start in active territories with sales.
EU Approval to Remove Ticagrelor and Rivaroxaban “Blood Thinners” During Cardiothoracic Surgery

CytoSorb has received E.U. approval to remove two well-known blockbuster “blood thinners” during cardiothoracic surgery, used in millions of patients to reduce risk of stroke and heart attacks.

**Ticagrelor (Brilinta®, Brilique® - AstraZeneca)** is a blockbuster P2Y₁₂ anti-platelet agent (“blood thinner”) with more than $1.6 billion in worldwide sales, used in patients with acute coronary syndrome.

**Rivaroxaban (Xarelto® – Bayer, Janssen/J&J)** is a blockbuster Factor Xa inhibitor anticoagulant (“blood thinner”) with ~$7 billion in 2019 global sales used as lifelong therapy in patients with atrial fibrillation.

**Problem:** Patients that require emergent or urgent cardiothoracic surgery on these blood thinners can develop serious bleeding complications.

CytoSorb installs easily into a heart-lung machine or cardiopulmonary bypass machine and as blood flows through the cartridge, removes these drugs rapidly during surgery and >90% from whole blood in CPB simulations to reverse their anticoagulant effect.

We believe CytoSorb can quickly become a cost-effective standard of care to prevent bleeding due to antithrombotic drugs, helping to drive sales growth.
Endocarditis Trial To Read Out Shortly

- Infective endocarditis (heart valve infection) occurs when bacteria seeds a heart valve from IV drug abuse and dirty needles, or from dental procedures.

- The incidence of endocarditis is rising in the U.S. due to the opiate crisis and use of dirty needles.

- Patients often require open heart surgery valve replacement but are very hemodynamically unstable before, during, and after surgery due to a combination of sepsis and heart valve destruction.

- Outcomes are generally poor with hemodynamic instability, high mortality (~15%), many adverse events, and high cost ($150-250,000 per case). Intraoperative CytoSorb has been used to help stabilize such patients peri-operatively with good success.

- The German Federal Ministry of Education and Research has funded a 250 patient, 15-center, randomized, controlled, Good Clinical Practice (GCP), investigator-initiated trial (REMOVE) using CytoSorb during valve replacement open heart surgery in patients with infective endocarditis. The primary endpoint is improvement of SOFA score.

- Trial completed in Jan 2020 with 250+ patients enrolled. Due to COVID-19 delays, top-line data is expected in 2H 2021.
Liver Disease: Another Big Opportunity

- 850 million people suffer from chronic liver disease due to viral hepatitis, alcoholism, and non-alcoholic fatty liver (NASH), and other causes leading to 1 million deaths from chronic liver disease, and another 1 million from hepatic cancer.

- Millions of chronic liver disease patients are hospitalized each year for an acute exacerbation of their chronic liver disease or acute hepatitis, often triggered by infection or alcohol, presenting with jaundice, organ failure, change in mental status, accumulation of fluid, and bleeding complications.

CytoSorb is E.U. approved to remove bilirubin in patients with liver disease and is being viewed by many as a next generation liver dialysis therapy.

CytoSorb reduces bilirubin, bile acids, and ammonia, but unlike other extracorporeal liver therapies, it also reduces cytokines that play a major role in the acute exacerbations of chronic liver disease and alcoholic hepatitis, and has been used to reverse encephalopathy.
CytoSorb, in combination with extracorporeal membrane oxygenation (ECMO), represents a novel and potentially effective lung resting or lung preservation strategy to treat acute respiratory distress syndrome (ARDS) by providing gas exchange and inflammatory toxin reduction, allowing the lungs to heal.

The goal of cytokine adsorption with CytoSorb + ECMO in ARDS patients is to promote lung healing – a requisite to potentially faster weaning from mechanical ventilation and decannulation from ECMO.
CytoSorb: Pneumogenic Sepsis, ARDS & ECMO

- 13 patient prospective study (vs. No CytoSorb historical control; n=7)
  - Pneumogenic sepsis (3 influenza, 1 fungal, 9 bacterial)
  - ARDS and vv-ECMO treated with CytoSorb
  - Shock with norepinephrine > 0.3 μg/kg/min, lactate > 2.0 mmol/L; PCT > 1 ng/ml
- Time to Intervention: within 6 hours after admission on ICU, and within 12 hours from sepsis diagnosis
- SAPS II: CytoSorb: 58±2 (range 49-66; predicted mortality > 60%) vs 50±2 (range 42-55; predicted mortality > 50%)

All patients received at least 2 CytoSorb cartridges and a maximum of 3 with ECMO and changed every 24 hours. Blood flow rates were 200-400 mL/min.

Control
n = 7

n = 13
CytoSorb: Pneumogenic Sepsis, ARDS & ECMO

- Use of CytoSorb was rapid: within 6 hours of ICU admission and 12 hours of sepsis diagnosis
- CytoSorb use resulted in rapid hemodynamic stabilization
- **Mean duration of ECMO**: CytoSorb: 8±2 days (range 2-23 days) versus 19±3 days (range 13-30 days). Mean time to ECMO decannulation was 5 days after the last CytoSorb dose
- Mean ICU stay: CytoSorb: 26±6 days (range 7-63 days) versus 26±5 days (range 8-43 days), possibly impacted by survival bias
- **30-day mortality rate**: 0% treatment vs 57% control. All CytoSorb treated patients were alive at 60 days
  Cause for death in control patients was sepsis with multi-organ failure
Unlocking the U.S. Opportunity

STAR-T
Pivotal Trial

REFRESH 2-AKI
Pivotal Trial

FDA
Breakthrough Therapy
Designation

COVID-19
Coronavirus Disease 2019
CytoSorb is FDA Emergency Use Authorized

CytoSorb is an extracorporeal cytokine adsorber that has been granted FDA Emergency Use Authorization (EUA) in the COVID-19 Pandemic

Under the EUA*, CytoSorbents can make CytoSorb available, through commercial sales, to all hospitals in the United States for use in patients, 18 years of age or older, with confirmed COVID-19 infection who are admitted to the intensive care unit (ICU) with confirmed or imminent respiratory failure who have:

- Severe disease
- Early acute lung injury (ALI)/early acute respiratory distress syndrome (ARDS); or
- Life-threatening disease

The CytoSorb device has neither been cleared nor approved for the indication to treat patients with COVID-19 infection. The CytoSorb device is authorized only for the duration of the declaration that circumstances exist justifying the authorization of the emergency use of the CytoSorb device under Section 564(b)(1) of the Act, 21 U.S.C § 360bbb-3(b)(1), unless the authorization is terminated or revoked sooner.
Global COVID-19 CytoSorb Activity

CytoSorb has been used in ~6,500 COVID-19 Patients in 30+ countries. As an E.U. approved extracorporeal cytokine adsorber, more than 143,000 treatments have been delivered to date.

CytoSorb COVID-19 status in other selected countries:

- CHN – Handbook of COVID-19 Prevention and Treatment
- COL – Expert consensus - Colombian Journal of Nephrology
- GBR – Medtech Innovation Briefing published by NICE
- GER – Treatment of severe COVID-19 courses in intensive care medicine
- IND – Cytokine Storm in COVID-19 Expert Management Considerations
- ISR – AMAR approval
- ITA – Brescia Renal COVID-19 Task Force Recommendations
- PAN – National Guidelines on adult COVID-19 patients
- CAN – Medical Device Authorization
# CytoSorb in COVID-19: CRRT or Hemoperfusion

## Case Series on Mechanical Ventilation

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<tr>
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<tbody>
<tr>
<td># patients</td>
<td>50</td>
<td>26</td>
<td>25</td>
<td>11</td>
<td>5 vs 5</td>
<td>7</td>
<td>5 vs 4</td>
</tr>
<tr>
<td># patients on HP / CRRT / ECMO</td>
<td>0/50/0</td>
<td>7/19/0</td>
<td>12/13/0</td>
<td>0/11/0</td>
<td>n/r</td>
<td>0/5/2</td>
<td>5/0/0</td>
</tr>
<tr>
<td>Inflammatory mediators ↓</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Hemodynamic stabilization ↑</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>n/a</td>
<td>✔️</td>
<td>n/r</td>
<td>n/a</td>
</tr>
<tr>
<td>Respiratory Function ↑</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>n/r</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Survival</td>
<td>70% (APACHE 2: 22) (SOFA 9)</td>
<td>81% (APACHE 2: 28)</td>
<td>n/r</td>
<td>82% CYTO vs. 70% control</td>
<td>n/r</td>
<td>71% (SOFA: 9)</td>
<td>80% CYTO vs. 0%</td>
</tr>
</tbody>
</table>

n/r: not reported  n/a: not applicable
# CytoSorb in COVID-19: ECMO

## COVID-19 Case Series on ECMO

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td># patients</td>
<td>11 prospective vs 11 historical control</td>
<td>10 v 20</td>
<td>10 v 20</td>
</tr>
<tr>
<td># patients on HP / CRRT / ECMO</td>
<td>0/0/11</td>
<td>0/0/10</td>
<td>0/0/10</td>
</tr>
<tr>
<td>Inflammatory mediators ↓</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Hemodynamic stabilization ↑</td>
<td>✗</td>
<td>n/r</td>
<td>✔️</td>
</tr>
<tr>
<td>Respiratory Function ↑</td>
<td>✔️</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>Survival</td>
<td>73% CYTO vs 64% control</td>
<td>80% CYTO vs 80% control</td>
<td>90% CYTO vs 90% control</td>
</tr>
</tbody>
</table>

## Non COVID-19 ECMO

<table>
<thead>
<tr>
<th>Germany Akil Thoracic CV Surgery 2020</th>
<th>Rieder ASAIO J 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 prospective vs 7 historical control</td>
<td>9 registry vs 9 propensity scored control</td>
</tr>
<tr>
<td>0/0/13</td>
<td>0/0/9</td>
</tr>
<tr>
<td>✔️</td>
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<tr>
<td>✔️</td>
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</tr>
<tr>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>100% CYTO vs 43% control</td>
<td>56% CYTO vs 22% control</td>
</tr>
</tbody>
</table>

n/r: not reported     n/a: not applicable
U.S. REFRESH 2-AKI Pivotal Trial

The U.S. REFRESH 2-AKI pivotal trial is a 400-patient, 25 center pivotal RCT designed to support U.S. regulatory approval as a prophylactic therapy used during complex open heart surgery such as valve replacement and aortic reconstructive surgery to reduce the severity or incidence of acute kidney injury (AKI) following surgery.

The development of post-operative AKI is associated with increased mortality up to 5 years post-op and a risk of developing renal failure requiring dialysis.

CytoSorb is used intra-operatively during cardiac surgery to reduce inflammatory toxins such as free hemoglobin, activated complement and cytokines that can lead to AKI.

Favorable review of safety data by the Data Monitoring Committee on the first 153 patients.

Currently 168 patients enrolled with 12 sites active and enrolling – remaining sites expected to be active by year end.

Next milestone: Interim Analysis (estimated 2H 2022)
Full Approval of STAR-T Trial Begins Priority Path to Potential FDA Marketing Approval

In April 2020, the FDA granted Breakthrough Designation to CytoSorbents’ technology to remove ticagrelor during cardiopulmonary bypass in emergent or urgent cardiothoracic surgery – a “fast track” for a major unmet medical need.

Received full FDA approval of IDE in July to conduct the STAR-T (Safe and Timely Antithrombotic Removal of Ticagrelor) randomized, controlled trial designed to support U.S. FDA marketing approval of the DrugSorb-ATR™ antithrombotic removal system.

The trial is expected to enroll 120 patients across 20 sites.

The primary endpoint will evaluate whether the use of DrugSorb-ATR with standard of care in patients on ticagrelor undergoing cardiothoracic surgery reduces peri-operative bleeding complications compared to standard of care alone.

We are rapidly advancing operational activities, including the successful completion of the first Investigator Meeting in July 2021.

Expect enrollment of 1st patient in Q3 2021 and trial completion in 2022.
Co-Principal Investigators of STAR-T

C. Michael Gibson, MS, MD

Interventional Cardiologist

- Professor of Medicine, Harvard Medical School
- President & CEO of non-profit Baim Institute (formerly Harvard Clinical Research Institute) that has led over 1,000 studies, 3,000 manuscripts, and 60 FDA submissions
- Founder, Editor-In-Chief www.wikidoc.org
- Internationally recognized thought leader in cardiovascular clinical trials and regulatory process
- Led Phase 1-4 trials, totaling >180K patients including approval of Effient®, Xarelto®, and Bevyxxa®

Michael Mack, MD

Cardiothoracic Surgeon

- Chairman, Baylor Scott & White The Heart Hospital
- President, Baylor Scott & White Research Institute
- Pioneer in the field of cardiothoracic surgery
- World-renowned clinical research and physician
- Performed > 7,000 cardiac surgeries, > 400 publications
- Instrumental in key advances in therapy of cardiovascular disease
Risk of Bleeding Is High in CABG Patients on Ticagrelor

In the ticagrelor registration PLATO (PLAelet inhibition and patient Outcomes) trial, 1584 patients underwent CABG surgery, randomized between those who received either ticagrelor or clopidogrel. Those patients (%) with life-threatening bleeding are shown. Bleeding risk is high despite waiting up to 7 days off the drug prior to surgery.

**Figure 2 – ‘Major fatal/life-threatening’ CABG-related bleeding by days from last dose of study drug to CABG procedure (PLATO)**

PLATO Major bleed, fatal/life-threatening: any major bleed as described above and associated with a decrease in Hb of more than 5 g/dL (or a fall in hematocrit (Hct) of at least 15%); transfusion of 4 or more units.

Fatal: A bleeding event that directly led to death within 7 days.

*AstraZeneca Prescribing Information for Ticagrelor*
By Removing Drug, CytoSorb Reduces Bleeding Complications

In a separate analysis done in the U.K., this has translated into a projected cost savings to the hospital of approximately $5,000 per patient, including the cost of CytoSorb.

<table>
<thead>
<tr>
<th>CPB + CytoSorb (n=32)</th>
<th>CPB alone (n=11)</th>
<th>CPB + CytoSorb (n=7)</th>
<th>CPB alone (n=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure duration** (min; mean ± SD)</td>
<td>288 ± 63</td>
<td>353 ± 84</td>
<td>184 ± 97</td>
</tr>
<tr>
<td>Red blood cell transfusion</td>
<td>21.9% (n=7)</td>
<td>45.5% (n=5)</td>
<td>14.3% (n=1)</td>
</tr>
<tr>
<td>Platelet transfusion</td>
<td>34.4% (n=11)</td>
<td>100% (n=11)</td>
<td>28.6% (n=2)</td>
</tr>
<tr>
<td>Chest tube drainage remove volume/24hrs (ml; median [IQR])</td>
<td>350 [300 - 450]</td>
<td>890 [630 - 1025]</td>
<td>390 [310 - 430]</td>
</tr>
<tr>
<td>Re-thoracotomy</td>
<td>0% (n=0)</td>
<td>36.4% (n=4)</td>
<td>0% (n=0)</td>
</tr>
</tbody>
</table>

United States TAM for Ticagrelor Removal

50,000 patients on ticagrelor needing emergent/urgent open heart surgery annually in US

$X$

$5,000 per device

$250 M Initial U.S. Total Addressable Market

Ticagrelor market share expected to grow
- CytoSorb makes ticagrelor the only reversible platelet inhibitor
- Ticagrelor goes off patent in 2024 leading to drop in prices

$500 M U.S. Total Addressable Market

Second FDA Breakthrough Designation Awarded to DrugSorb-ATR™ for DOAC Removal

In August 2021, the FDA granted a second Breakthrough Designation to DrugSorb-ATR to remove two additional “blood thinners” – the direct oral anticoagulants (DOACs), apixaban (Eliquis®) and rivaroxaban (Xarelto®) during cardiopulmonary bypass in urgent cardiothoracic surgery.

Plan to move forward with an IDE application to conduct a U.S. DOAC trial for the removal of these agents to expand the label for DrugSorb-ATR.

If successful, we seek to establish DrugSorb-ATR as the new global standard to reduce a broad range of blood thinners during cardiothoracic surgery and other operative procedures.
Addressable U.S. Market For Current and Potential Future Indications for Antithrombotic Removal by DrugSorb-ATR

- **TICAGRELOR**
  - Cardiac surgery (Today)
  - Cardiac surgery (Future)

- **TICAGRELOR + DOAC**
  - Cardiac surgery
  - All surgery

- **Values:**
  - $250M
  - $500M
  - $1.0B
  - $2.0B
Preparing for U.S. Commercialization

• U.S. STAR-T and U.S. DOAC removal trials are expected to provide both clinical and health economics data to support U.S. launch as well as sales for this application internationally.

• David Cox, Vice President of Global Regulatory Affairs, is leading the U.S. regulatory strategy to drive FDA approval.
  • Former Vice President of Regulatory Affairs for Tissue and Regenerative Technologies at Integra LifeSciences.

• James Komsa, Vice President of U.S. Sales and Marketing, is managing U.S. COVID-19 sales, but will begin commercialization strategy and eventual build-out of sales and marketing team ahead of potential U.S. approvals to remove different antithrombotics.
  • Former Vice President at Medtronic of the Restorative Therapy Group (RTG) and Pain, and former VP of Northeast Region, Cardiac and Vascular Group (CVG).

• Goal is to be prepared for U.S. launch at time of potential FDA marketing approval.
Investment Summary

CytoSorbents has the potential to become a highly profitable performer in the therapeutics space with industry-leading operating profit margins

• High margin razorblade business model with excellent operating leverage and a solid track record of ex-US growth

• Strong foundation and well-funded for potential future growth, with new and existing clinical applications that address major unmet medical needs

• Working to drive U.S. FDA approval by leveraging dual FDA Breakthrough Designations for ticagrelor (Brilinta®), apixaban (Eliquis®), and rivaroxaban (Xarelto®) removal. Believe DrugSorb-ATR can rapidly become standard of care and address a $750M-$1B opportunity by removing other blood thinners during cardiac surgery

• We have extensive validation from physicians around the world, leading strategic partners, U.S. government agencies, and the media

• Additional near-term catalysts could include new clinical data, milestone achievement in the U.S. STAR-T Trial for ticagrelor removal, sales progress, and many others
Providing Hope in a helpless situation

HELPING PATIENTS SURVIVE CRITICAL ILLNESSES WORLDWIDE

CytoSorbents™
Working to Save Lives Through Blood Purification

Investor Relations contact
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tpowers@cytosorbents.com
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