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UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

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**Form 8-K**

**CURRENT REPORT  
PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**Date of report (date of earliest event reported):  
January 7, 2010**

**Aastrom Biosciences, Inc.**

(Exact name of registrant as specified in its charter)

**Michigan**  
(State or other jurisdiction of  
incorporation)

**0-22025**  
(Commission File No.)

**94-3096597**  
(I.R.S. Employer Identification  
No.)

**24 Frank Lloyd Wright Drive  
P.O. Box 376  
Ann Arbor, Michigan 48106**  
(Address of principal executive offices)

Registrant's telephone number, including area code:  
**(734) 930-5555**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
  - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
  - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
  - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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**Item 7.01 Regulation FD Disclosure.**

Attached hereto as Exhibit 99.1, which is incorporated herein by reference, is a copy of certain slides used and to be used by Aastrom Biosciences, Inc. (“the Company”) for various purposes, including posting on the Company’s website. This information is not “filed” pursuant to the Securities Exchange Act and is not incorporated by reference into any Securities Act registration statements. Additionally, the submission of this report on Form 8-K is not an admission as to the materiality of any information in this report that is required to be disclosed solely by Regulation FD. Any information in this report supersedes inconsistent or outdated information contained in earlier Regulation FD disclosures.

**Item 9.01 Financial Statements and Exhibits.**

(c) Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
99.1	PPT slides

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: January 8, 2010

**AASTROM BIOSCIENCES, INC.**

By: /s/ Timothy M. Mayleben  
Timothy M. Mayleben  
Chief Executive Officer and President

# Aastrom



Developing Regenerative Medicine Therapies  
to Treat Severe Chronic Cardiovascular Diseases

Investor Slide Presentation  
January 2010

## Safe Harbor

This presentation contains forward-looking statements, including, without limitation, statements concerning product-development objectives, clinical trial strategies, clinical trial timing and expected results, market data, potential market opportunities, market development plans, anticipated milestones and potential advantages and application of Tissue Repair Cell (TRC) technology, which involve certain risks and uncertainties. Actual results may differ significantly from the expectations contained in the forward-looking statements.

Among the factors that may result in differences are the results obtained from clinical trials and development activities, regulatory approval requirements, competitive conditions and availability of resources.

These and other significant factors are discussed in greater detail in Aastrom's Annual Report on Form 10-K and other filings with the Securities and Exchange Commission.

# Aastrom Overview

Regenerative medicine company  
developing personalized cell-based therapies  
to slow or reverse the course of severe, chronic  
cardiovascular diseases

Phase II Clinical Development



**Cardiac**  
Dilated Cardiomyopathy  
(DCM)

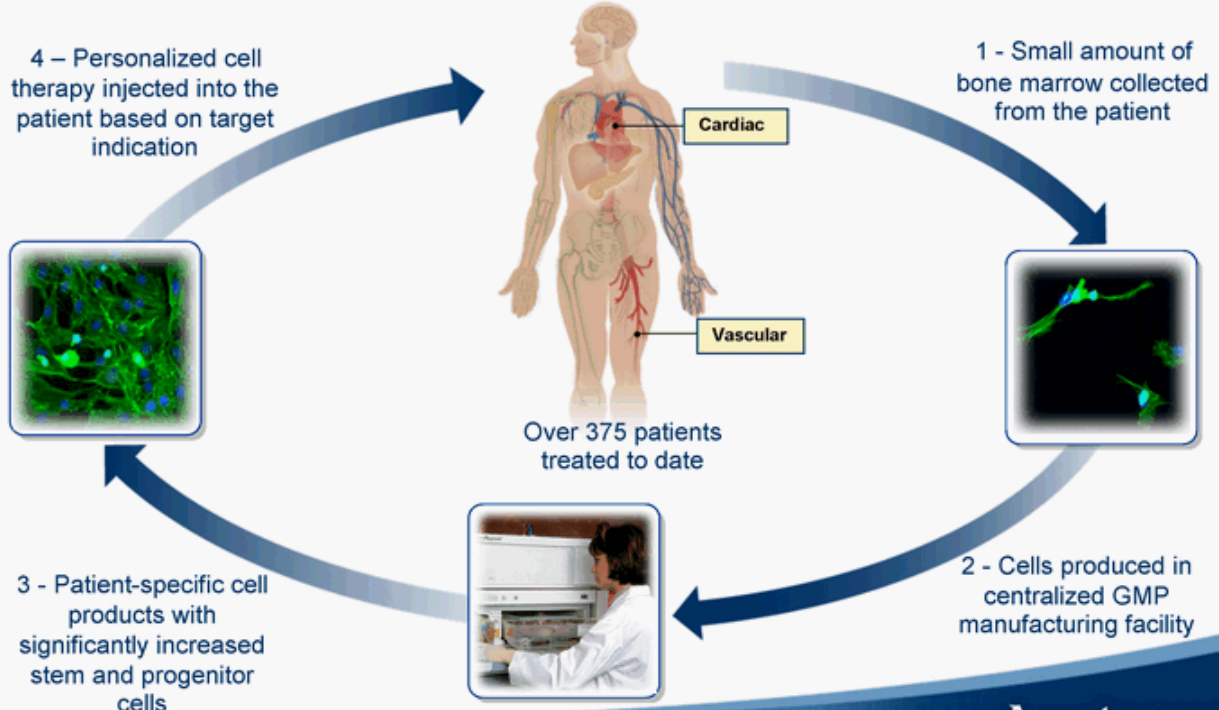


**Vascular**  
Critical Limb Ischemia  
(CLI)

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# Aastrom Cell Products

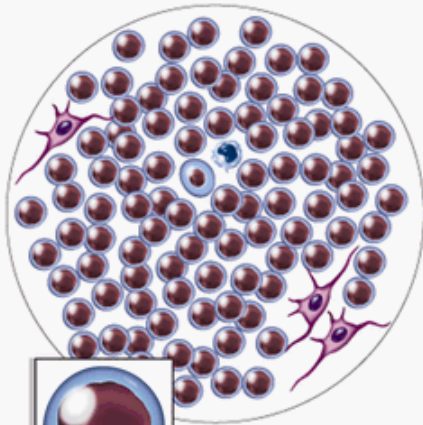
Personalized cell-based therapies



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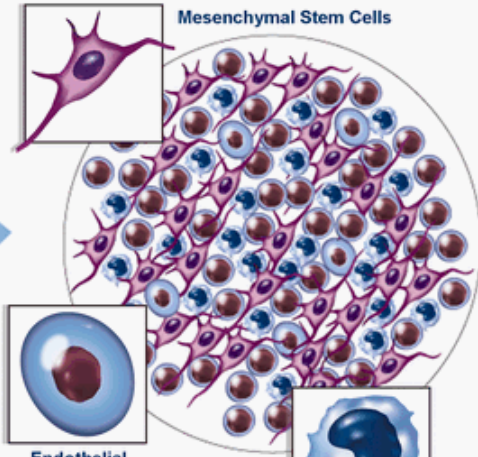
# Aastrom's Expansion of Stem and Progenitor Cells

Autologous  
Bone Marrow

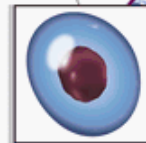


Hematopoietic and  
Endothelial Stem Cells

Aastrom's  
TRC-Based Products



Mesenchymal Stem Cells



Endothelial  
Precursor Cells




Macrophages



# Aastrom's Mixed Cell Population

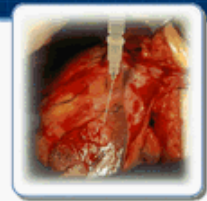
Most promising opportunity for near-term success

	Platform	Scientific Rationale	Clinician Quotes
 <p>Likelihood of Success</p>	<b>Mixed Population of Stem and Progenitor Cells</b>	<ul style="list-style-type: none"> <li>Provides mesenchymal, endothelial progenitor and other active cells                             <ul style="list-style-type: none"> <li>Allows for revascularization to support new tissue growth</li> </ul> </li> </ul>	<i>"Using a mixed population of cells offers the best chance of success"</i>
	<b>Isolated Mesenchymal Cells</b>	<ul style="list-style-type: none"> <li>Upon harvest of patients' bone marrow, mesenchymal stem cells are isolated and either purified or expanded prior to use</li> <li>Mechanism of action is easier to identify due to a single cell type</li> </ul>	<i>"Allows for the formation of new tissue but does not create a support system"</i>
	<b>Allogeneic Stem Cells</b>	<ul style="list-style-type: none"> <li>"Universal" cell line that can be used "off the shelf" in any patient                             <ul style="list-style-type: none"> <li>Scalable process for manufacturing</li> </ul> </li> <li>Potential for serious immune response</li> </ul>	<i>"The potential for an immune response is too great"</i>
	<b>Tissue-Specific Stem Cells</b>	<ul style="list-style-type: none"> <li>Isolate tissue-specific stem cells of interest                             <ul style="list-style-type: none"> <li>Difficult to isolate and expand due to low stem cell yield</li> </ul> </li> <li>Little success when investigated in clinical trials for heart failure</li> </ul>	<i>"Skeletal myoblasts to date have failed miserably in clinical trials"</i>

# Clinical Development Pipeline

Driving cardiovascular therapies to market

	RESEARCH PRECLINICAL	PHASE II (2007-2010)	PHASE III PIVOTAL
<b>CARDIAC</b>			
DCM - Surgical			
DCM - Catheter			
<b>Vascular</b>			
Critical Limb Ischemia			



## Dilated Cardiomyopathy Opportunity

Largest growing segment of heart failure population;  
significant unmet need due to limited therapeutic options

### Cardiac Regeneration for Severe Heart Failure

5.5 million Americans with  
heart failure (Class I – IV), the largest  
medical expenditure in the U.S.

1.8 million patients with severe  
heart failure (Class III/IV)

120,000 – 150,000  
no option  
DCM patients

**Aastrom's Target Market**  
(Orphan DCM population)

Sources: American Heart Association - Heart Disease and Stroke Statistics, 2007; Abdul et al. Effect of Beta Blockers (Carvedilol or Metoprolol XL) in Patients With Transposition of Great Arteries and Dysfunction of the Systemic Right Ventricle. American Journal of Cardiology, 2007; Framingham Heart Study; Helderreich et al. Health Status Identifies Heart Failure Outpatients at Risk for Hospitalization or Death. Journal of the American College of Cardiology, 2006; Muntwyler J, Abetal G, Gruner C, and Follath F. One-year mortality among unselected outpatients with heart failure. European Heart Journal, 2002; National Heart, Lung, and Blood Institute, 2006 Chart Book on Cardiovascular and Lung Diseases, Bethesda, MD, American Heart Association, Leerink Swann KOL Interviews

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# Cardiac Regeneration

Need for therapy to reverse disease progression

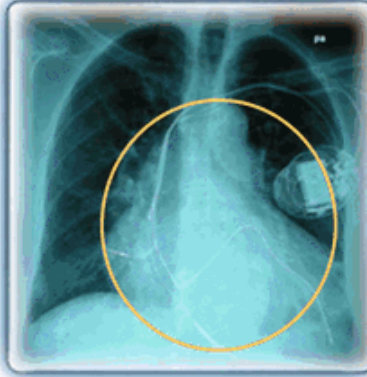


Normal Heart



Heart typically size of fist

Dilated Cardiomyopathy



Enlarged heart and reduced pump function

Cardiac Repair Cell (CRC)  
Treatment Approach



Direct injection via  
minimally invasive surgery  
(Approx. 2 inches or less)

# IMPACT-DCM Surgical Clinical Trial

## U.S. Phase II Dilated Cardiomyopathy Trial



### Trial Design

- 40 patient, randomized, controlled, open-label study
  - 20 patients with ischemic DCM; 20 patients with non-ischemic DCM
  - Randomized 3:1 treatment vs. control
  - 5 treatment centers
- CRCs delivered as monotherapy
  - Direct injection via lateral thoracotomy or minimally invasive thoracoscopy
- 12 month patient follow-up

### Target Patients

- Diagnosed with ischemic or non-ischemic DCM
- New York Heart Association class III or IV heart failure
- Left ventricular ejection fraction  $\leq 30\%$  (60-75% is typical for a healthy person)
- 18-86 years old

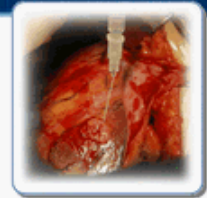
### Data Collection

- Safety data
- Incidence of MACE (Major Adverse Cardiac Events)
- New York Heart Association (NYHA) classification for heart failure
- Left ventricular ejection fraction
- Left ventricular dimensions/mass/volume
- Myocardial perfusion and viability
- Pulmonary function
- Exercise tolerance (six minute walk test)
- Quality of life

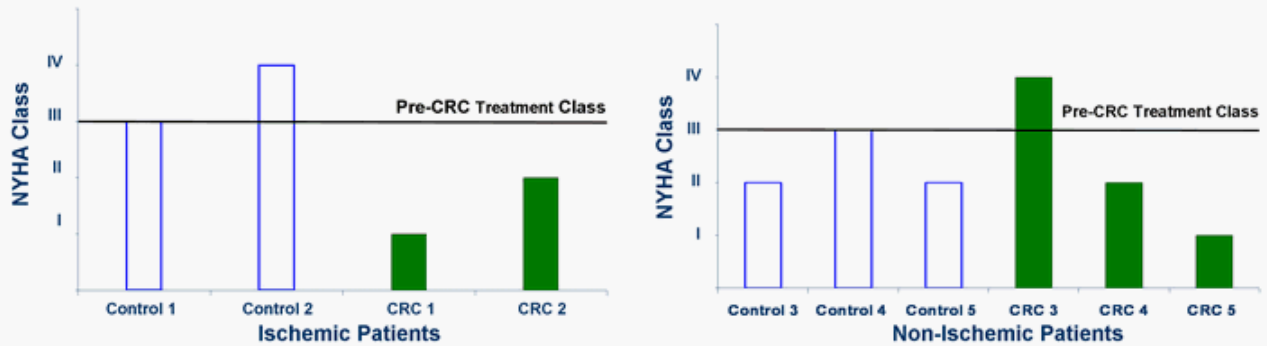
**Status: Enrollment initiated Nov 2008;  
37 patients enrolled by end of Dec 2009;  
enrollment completion expected  
Jan 2010**

# IMPACT-DCM – Early Findings

American Heart Association Meeting November 2009



## NYHA Heart Failure Class – Month 6



- Data from patients who have completed 6-month follow-up visit (n=10)
- These patients (ischemic and non-ischemic) entered treatment as NYHA Class III
- NYHA Class I (best) to Class IV (worst)
- Part of presentation by Dr. Amit Patel, National PI of IMPACT-DCM trial, during Scientific Session at November 2009 American Heart Association Meeting

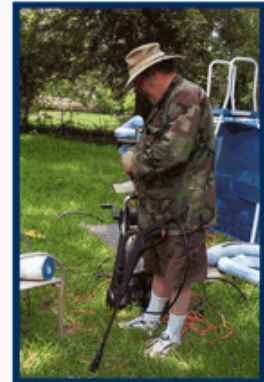
# IMPACT-DCM Patient Case Study

1<sup>st</sup> Patient featured in *U.S. News & World Report*



## Patient #1 - Thomas Clegg

- Profile**
- 58 year old male patient diagnosed with ischemic dilated cardiomyopathy
  - 22 year U.S. Air Force Veteran
  - Cardiac left ventricular ejection fraction (LVEF) of ~20%; NYHA class III heart failure
  - Suffered from lack of energy and reduced stamina
- Early Results**
- Treated with CRCs in November 2008
  - Improved LVEF at three month post-surgical check-up
  - Improved to NYHA class II heart failure stage
  - Improved physical and emotional well-being:
    - Mr. Clegg now enjoys exercising and has lost over 20 pounds
    - He is able to enjoy walks with his family and no longer avoids climbing stairs
  - Mr. Clegg reports, "Overall, my quality of life is better." "I feel fantastic."



View coverage of Mr. Clegg and the IMPACT-DCM trial in the August 2009 issue of *U.S. News & World Report* on Aastrom's homepage: [www.aastrom.com](http://www.aastrom.com).

# Catheter DCM Clinical Trial

## U.S. Phase II Dilated Cardiomyopathy Trial



### Trial Design

- 24 patient, randomized, controlled, open-label study
  - 12 patients with ischemic DCM; 12 patients with non-ischemic DCM
  - Randomized 2:1 treatment vs. control
  - Up to 4 treatment centers planned
- CRCs delivered as monotherapy
  - Transendocardial catheter-based injection
- 12 month patient follow-up

### Target Patients

- Diagnosed with ischemic or non-ischemic DCM
- New York Heart Association class III or IV heart failure
- Left ventricular ejection fraction  $\leq 30\%$  (60-75% is typical for a healthy person)
- 18-86 years old

### Data Collection

- Safety data
- Incidence of MACE (Major Adverse Cardiac Events)
- New York Heart Association classification for heart failure
- Left ventricular ejection fraction
- Left ventricular dimensions/mass/volume
- Myocardial perfusion
- Pulmonary function
- Exercise tolerance (six minute walk test)
- Quality of life

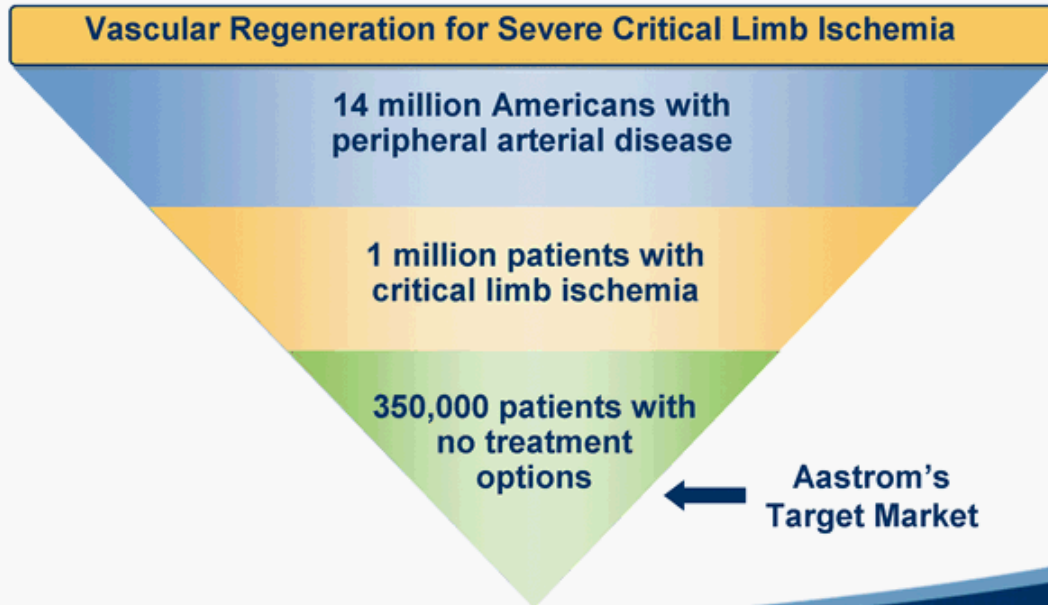
Status: Initiating enrollment in Q1 2010

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# Critical Limb Ischemia Opportunity

Prevalence expanding due to diabetes, cardiovascular disease, hypertension and aging U.S. population





# RESTORE-CLI Clinical Trial

## U.S. Phase IIb Critical Limb Ischemia Trial

### Trial Design

- Up to 150 patients in a prospective, controlled, randomized, double-blind study
  - Randomized 2:1 treatment vs. control
  - Up to 30 treatment centers
- Vascular Repair Cells (VRCs) delivered as monotherapy
  - Direct injection of VRCs into the muscle
- 12 month patient follow-up

### Target Patients

- Diagnosed with chronic critical limb ischemia and no option for revascularization
- Diabetes (if present) and blood pressure (if elevated) is controlled
- Open wounds (if present) rate 3 or less on Wagner scale
- No previous amputations at talus or above on limb requiring treatment
- 18-90 years old

### Data Collection

- Incidence of adverse events
- Amputation (incidence and time to surgery)
- Wound healing
- Blood pressures in treated limb
- Pain (severity and medication use)
- Quality of life

**Status: Enrollment initiated Jun 2007;  
79 patients enrolled by end of Dec 2009**



## Vascular Regeneration (Patient I)

### Diabetic Foot Wound Patient Treatment

Pre-Vascular Repair Cell  
(VRC) Treatment



VRC Intramuscular  
Injection into Calf Muscle



44 Weeks  
Post-VRC Treatment



#### Patient Profile

69 year old male patient; co-morbidities: coronary heart disease, chronic heart failure, hyperlipidemia, hypertension; previous treatment methods failed to heal ulcers and open wounds

#### Patient Results

No major amputations, no cell-related adverse events and healing of all open wounds by 44 weeks

Source: Kirana, et. al. Autologous tissue repair cells in the treatment of ischemia induced chronic tissue ulcers of diabetic foot patients without option of revascularization: First experiences. 19<sup>th</sup> World Diabetes Congress IDF, Cape Town S. Africa Dec. 3-7, 2006

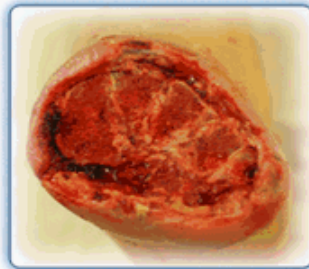


## Vascular Regeneration (Patient II)

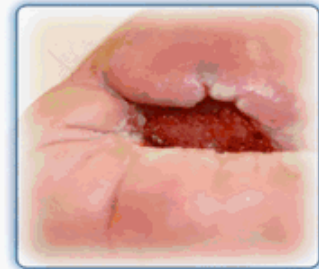
### Diabetic Foot Wound Patient Treatment



**Critical limb ischemia and serious gangrene**



**Forefoot amputation followed by VRC administration (4 weeks post-treatment)**



**28 weeks post-VRC treatment**



**44 weeks post-VRC treatment; wound healed**

**Patient Profile** 55 year old diabetic male smoker with critical limb ischemia and serious gangrene; co-morbidities: hypertension and hyperlipidemia; previous treatment methods failed to restore circulation and prevent necrotic tissue infection

**Patient Results** Wound healed at 44 weeks post-VRC treatment

Source: Stratmann, Kirana, Tschöpe, Diabetes Center at the Heart and Diabetes Center in North Rhine-Westphalia, Bad Oeynhausen, Germany

## Aastrom Advantages

Autologous patient-specific stem cell products



Minimizes risk of cell rejection  
Potential for long-term engraftment

TRC technology based on mixed cell populations



Regenerate multiple tissue types

Expansion of stem and early progenitor cell populations



Therapeutic advantage with increased numbers of early stage cells

U.S. and EU GMP cell manufacturing facilities



International reach with consistent cellular product

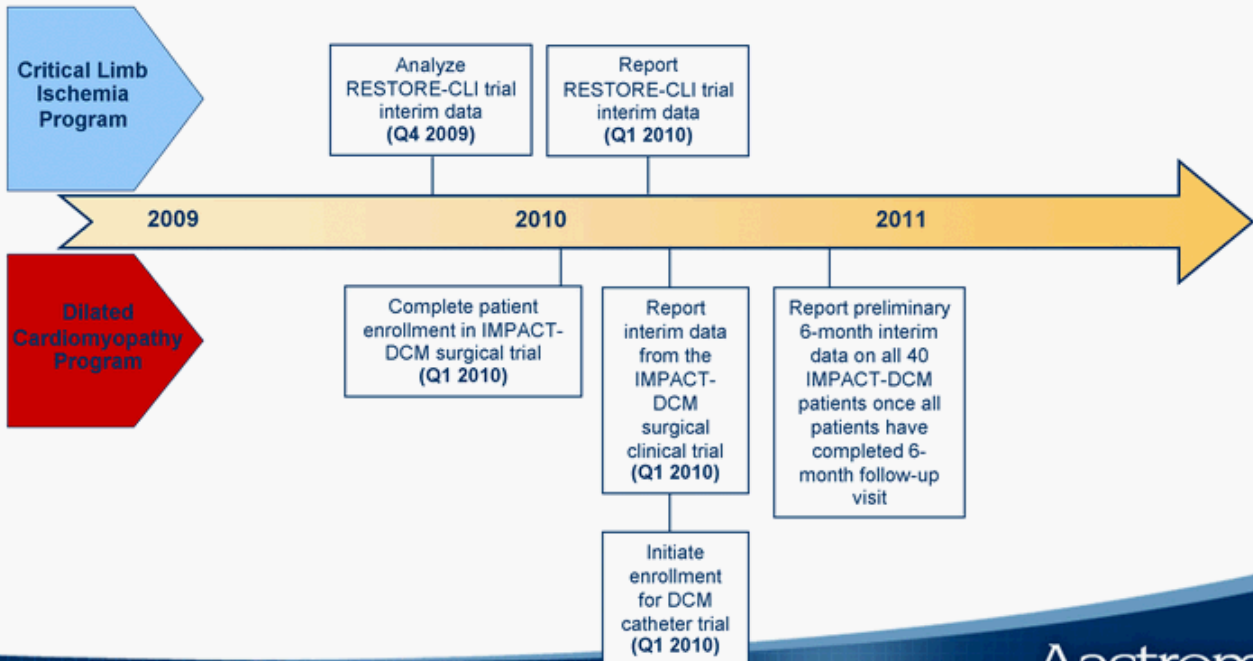
Two focused U.S. clinical programs



Therapeutic opportunities -  
Severe, chronic cardiac and vascular diseases

# Clinical Milestones

History of achieving clinical milestones



# Aastrom



Developing Regenerative Medicine Therapies  
to Treat Severe Cardiovascular Diseases

1/10-IR-V2

*Nasdaq:ASTM*