

Published by Redington, Inc. for investment professionals. All rights reserved.

Recent Events: *The company's ultra sensitive portable diagnostic analyzer is expected to enter final clinical trials for FDA-approval during 4Q 2010; commercial plans to supply signal amplification technology to Merck-Chimie S.A.S. are detailed in a recent (5/27) announcement; \$2.7 million equity raised in last round of financing to carry company to FDA submission of portable diagnostic analyzer and first cardiovascular test.*

KEY CONSIDERATIONS

- CardioGenics is entering the final phases of developing a portable Point-Of-Care (POC) blood analyzer that provides test results with the same accuracy as large lab-based systems, but in less than one-tenth the time.
- CardioGenics is developing a battery of cardiovascular tests for use with its POC analyzer. The first will test for Troponin-I, a protein released into the blood during a heart attack. The US market for Troponin-I testing is currently \$650 million annually.
- The patented analyzer, called the QL Care™ Analyzer, is the industry's first designed to provide emergency room (ER) doctors and primary care physicians with the capability to obtain fast (within 15 minutes), highly accurate and quantitative blood testing results upon which to confirm a diagnosis or assess risk, as if they had results from a large lab-based analyzer.
- As of now, highly accurate test results take an average of 2.8 hours – and are available only with a large central lab system.
- Faster test results will reduce triage time in the ER, save lives, potentially shorten hospitalization stays, help ensure optimal use of a hospital's resources, and possibly reduce litigation involving treatment of chest pain patients.
- Rapid test results will enable ER doctors to take fuller advantage of the 'golden hour', the one hour immediately following the onset of a heart attack during which time more informed medical intervention can provide significant benefit.
- Conversely, ER doctors will be able to quickly identify non-cardiac causes of chest pain, which account

CardioGenics Holdings Inc. (OTC BB: CGNH)	
Approx. MktCap:	\$25 million
Avg. Daily Volume:	300,000
Fiscal Year Ends:	Oct. 31
Published: June 2010	

for about 85 percent of ER chest pain presentations. This could help save millions in unnecessary medical costs, annually.

- The QL Care™ Analyzer's ease and convenience of operation – works with whole blood, no wash steps, hands free, walk away operation, and no technical training requirement – also make it ideally suited for use in the roughly 200,000 US primary care and specialist physicians' offices.

- Private practice physicians will find the low cost CardioGenics QL Care™ Analyzer an invaluable tool for performing many of the high margin tests they now send to outside labs.

- Having quick, highly accurate test results available during a patient's office visit should speed treatment decisions, reduce the need for follow-up visits, and enhance physician office revenue.

- CardioGenics' signal amplification technology, a key advance that gives the QL Care™ Analyzer high sensitivity, is also applicable to large lab-based diagnostic systems where it can increase the sensitivity of those systems up to seven fold.

- Companies in the diagnostic industry are typically valued at 3 to 7x revenue. Some recent transactions have been completed at higher valuations. Inverness Medical Innovation (now Alere IVD

Technologies) bought Biosite for \$1.6 billion when it was reporting \$180 million revenue, a multiple of about 8.5x. A Swedish company at an earlier stage of development than CardioGenics recently sold for €285 million. A noncompeting Nasdaq-traded company with a cardiac marker carries a \$300 million market cap.

OVERVIEW

The initial market for the company's QL Care™ Analyzer will be hospital emergency rooms and first responder vehicles to measure cardiac markers that indicate whether a patient is or isn't suffering a cardiac event, and if so how bad and whether a life-threatening blood clot is forming.

The first test to be offered will be for Troponin-I, a protein released by dying heart tissue. Its presence in blood definitively confirms that a heart attack is in progress. That's why standard protocol requires Troponin-I testing for each of the eight million people in the US who enter the ER each year complaining of chest pain.

The company's second planned test, PAI-1, determines responsiveness to the clot-busting drug tPA. Although tPA is routinely administered to ER patients presenting chest pains, approximately 40 percent show no-response to it. The third and fourth tests will be the industry's first to risk-stratify heart failure and ascertain patients' individual responsiveness to commonly administered heart failure drugs (personalized medicine).

There are approximately 16,000 emergency room facilities and at least 30,000 emergency response vehicles in the US, all of which are potential sites for a dedicated CardioGenics QL Care™ Analyzer. Sales of the analyzer unit to this market segment -- the 'razor' side of the business -- represents a \$140 million addressable opportunity. On the 'blade' side of the business -- the consumable single-use test cartridges -- the addressable US market for Troponin-I alone is estimated at roughly \$650 million annually.

Luis LaSalvia, MD, head of integrated diagnostics and market development for Siemens Healthcare Diagnostics, Tarrytown, NY, which is evaluating the best path forward with next-generation troponin testing, notes that the U.S. spends an estimated \$8 billion to \$13 billion per year in managing chest pain patients in the ED (ER). "And approximately up to 80 percent of these patients don't have ACS (Acute Coronary Syndrome)."

— *College of American Pathologists, Feb. 2009*

As more tests are adapted to the company's QL Care™ Analyzer, (more than 200 immunoassay test reagents are on the market), it is expected to find a large and welcome market in outpatient clinics and private practice offices throughout the developed world. It will speed detection and treatment of infectious diseases and malignancies, and monitor progression of the coagulation cascade. It will also enable these facilities to capture revenue now going to outside labs -- often hundreds of thousands of dollar annually, depending on practice size.

ABOUT THE TECHNOLOGY

All immunoassay diagnostic systems in clinical laboratories today employ light to signal the presence and quantity of disease markers in patient blood samples. The industry's challenge has been to increase the sensitivity of the signaling technology to detect lower and lower levels of a disease marker, and to increase specificity to confirm that the marker being measured is indeed the marker of interest.

CardioGenics has perfected proprietary methods for signal amplification technology. It employs biochemiluminescence and proprietary magnetic beads to achieve unprecedented sensitivity in performing immunoassays in the Point-Of-Care setting. Simply put, the technology enhances the light emitting, or signaling properties of the paramagnetic beads that interface the signaling chemistry with the patient test sample, resulting in increased testing sensitivity.

By applying special coatings and chemical agents to the beads, and then activating the chemistry with timed pulses of electron energy, CardioGenics' QL Care™ Analyzer generates diagnostic tests results with accuracy far superior to those achievable with the fluorescence technology employed by current POC systems from Alere (Triage) and Response Reader (RAMP), and those of Roche (POC CARDIAC™ Reader), Abbott (I-STAT) and others.

The QL Care™ Analyzer incorporates another important feature – it analyzes whole

blood vs. plasma without a pre-filtration step. It avoids the need for a separate time consuming step by a skilled technician with special equipment to centrifuge blood prior to testing. A proprietary cartridge assures an exact volume of blood in the test cartridge chamber from an applied non-metered sample. Any variation in the volume of blood from test-to-test could potentially alter the accuracy of the results.

In different sizes and with different polymer coatings, CardioGenics paramagnetic beads can increase the sensitivity of lab-based diagnostic systems up to 7x. CardioGenics plans to capitalize on that advantage, not by selling large lab machines, but by selling its beads in volume through existing bead suppliers. The company recently announced initiation of a second phase of evaluation of its patented beads for distribution by Merck-Chimie, one of the world's largest suppliers of conventional paramagnetic beads.

NEXT STEPS

The performance attributes of the CardioGenics patented paramagnetic beads have been validated and reported in *The Journal of the American Chemical Society*.

The fully automatic, microprocessor-based QL Care™ Analyzer (the industry's first with no moving parts) has been extensively and successfully bench tested utilizing CardioGenics proprietary paramagnetic beads and its patent-pending disposable reagent cartridge.

In 3Q 2010 the QL Care™ Analyzer will be tested under 'real word' clinical conditions. Four sites have been selected. Each is an active hospital emergency room that routinely admits patients presenting chest pains. Blood samples will be drawn from approximately 50 patients at each site. One portion of each sample will be run on the hospital's central lab analyzer and the other on a CardioGenics QL Care™ Analyzer installed at the site.

The goal is to confirm that the results from the CardioGenics QL Care™ Analyzers and the central lab systems are the same. The head-to-head test will take approximately 45 days to complete.

Upon successful completion, the company will finalize protocols and commence trials for FDA approval of its POC analyzer. These tests are expected to start in 4Q and complete two months later.

These results, if successful, will be filed with the US FDA as part of a 510-K submission seeking approval to market the QL Care™ Analyzer and the company's first cardiovascular test, Troponin-I. The company expects to enter into distribution agreements in the US and abroad for the sale of the QL Care™ Analyzer and reagent cartridges for its approved tests. Based on FDA statistics for FY 2009, 510-K applications receive a final FDA decision in an average of 112 days from the date of submission.

SUMMARY POINTS

- **CardioGenics' QL Care™ Analyzer is set to be the first portable analyzer to provide diagnostic test results with the same accuracy as large lab-based system in less than one tenth the time of the bigger systems.**
- **If plans continue apace, CardioGenics QL Care™ Analyzer is expected to be commercially available 2Q 2011 with a test for Troponin-I. The annual market for this one test has been calculated to be roughly \$650 million in the US alone. Roughly 20 million Troponin-I tests are performed each year worldwide.**
- **The key initial market will be emergency rooms to triage patients presenting with chest pains. Fast test results (15 minutes vs. 2.8 hours today) will rule in/rule out heart attack as a cause of the chest pains, speeding treatment or helping to avoid unnecessary costs.**
- **The company plans to introduce new tests at the rate of one every three months. The next will be for determining the need to administer clot busting medicines to people experiencing heart attack.**
- **The QL Care™ Analyzer's ease of operation -- just a few drops of whole blood, no operator training, walk-away operation -- foretells widespread adoption by clinics and private practice offices seeking ways to improve health care delivery and generate additional income by doing high margin tests in-house.**
- **A supply, development and distribution agreement for CardioGenics' enhanced paramagnetic beads has been executed and is in the second stage of evaluation with Merck-Chimie, one of the world's largest suppliers of conventional beads.**

For additional information, contact:

**Redington, Inc. • CT 203 222-7399 • NY 212 926-1733 • www.redingtoninc.com
CardioGenics Holdings Inc. • 905 673-8501 • www.cardiogenics.com**