

Better care
Better outcomes



**Welcome to a new era in
patient monitoring.**

Financial Highlights

CASMED
2008 Annual Report

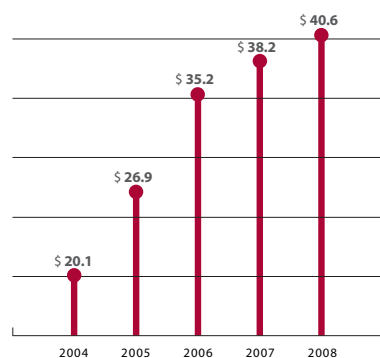
Amounts in thousands except per share data

For Year Ended	2008	2007	2006	2005 ⁽²⁾	2004
Revenues	\$ 40,649	\$ 38,232	\$ 35,202	\$ 26,884	\$ 20,059
Net (Loss) Income	(388)	306	1,747	1,815	1,205
Net (Loss) Income per Diluted Common Share ⁽¹⁾	(\$ 0.04)	\$ 0.03	\$ 0.14	\$ 0.15	\$ 0.11
Diluted Shares Outstanding	11,032	12,212	12,147	11,729	11,128
At Year End					
Working Capital	\$ 10,819	\$ 10,388	\$ 9,096	\$ 7,482	\$ 5,369
Bank Debt Obligations	4,317	5,149	4,416	4,990	1,093
Total Assets	23,687	23,888	21,443	17,918	10,993
Shareholders' Equity	\$ 14,900	\$ 13,751	\$ 12,625	\$ 9,117	\$ 7,156

(1) The Company adopted FAS-123R - Share-Based Payment, as of January 1, 2006. Operating (loss) income reduced \$410, \$303 and \$390 for 2008, 2007 and 2006, respectively, from stock compensation expense. Net (loss) income reduced by \$0.03, \$0.02 and \$0.03 per diluted share for 2008, 2007 and 2006, respectively.

(2) 2005 pre-tax income includes \$401 credit from curtailment gain of post-retirement benefit plan. 2005 reflects the acquisition of Statcorp, Inc. on May 15, 2005.

Revenues (\$mils)



Shareholders' Equity (\$mils)



Monitoring what's vital

CAS Medical Systems, Inc. (CASMED) is dedicated to the development and manufacture of innovative, non-invasive monitoring solutions vital to patient care.

President's Message

CASMED

2008 Annual Report

Dear Shareholder:

I'm pleased to announce that 2008 is our twelfth consecutive year of record revenues. Our increased revenues resulted from the continued steady performance of our core business, a four-fold increase in sales of FORE-SIGHT® and a double digit climb in OEM technology sales. In addition, expanded FDA clearance is launching us into new markets with strong growth potential.

Our core bedside monitoring businesses continue to perform well and provide solid profitability and positive cash flow. However, we are not immune to the difficult realities facing the national and world economies. As an example, our vital signs monitoring products have experienced some delays in hospital purchasing due to the downturn in the global economy, and this new reality makes it even more important than ever to strengthen the value of our product offerings and to better capitalize on available opportunities.

Sales of consumable products – blood pressure cuffs and neonatal supplies – continued to do well, even during this challenging business climate. Our non-invasive blood pressure technology, which is used in other manufacturers' multi-parameter monitoring systems, showed a 33% increase in sales over the last year, making this business segment a significant contributor to our profits and an area of promise for our future.

2008 was an important year for our innovative FORE-SIGHT Absolute Cerebral Oximeter. This device delivers true absolute measurement of cerebral tissue oxygen saturation levels, a vital indicator that when monitored can help avert brain damage, other serious complications or death during surgery. In its first full year of sales, FORE-SIGHT's installed base of monitors increased four-fold, expanded into Europe, and was successfully launched into the neonatal/infant marketplace, generating annualized sales of disposable sensors in excess of \$2M. To accelerate revenue growth in this marketplace, we invested in the expansion of our sales and marketing team, asking them to work with key thought leaders and institutions, and to educate the marketplace on the importance of cerebral oximetry and the superiority of FORE-SIGHT's absolute measurement technology.

One of our goals is to make FORE-SIGHT cerebral oximetry a standard of care. We firmly believe we can achieve this by showcasing objective, clinical proof of FORE-SIGHT's technological superiority and improved patient outcomes. Recent studies published in such journals as the Journal of Perinatology, the British Journal of Anesthesia, and Seminars in Cardiothoracic and Vascular Anesthesia contribute to the volume of clinical evidence supporting FORE-SIGHT's substantial predictive value, and its importance to quality care. For example, in April 2009, studies presented at the Society of Cardiovascular Anesthesiologists provided evidence for the relationship between decreased cerebral



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tissue oxygen saturation and longer term post-operative cognitive decline, major post-operative complications, prolonged extubation times, and increased ICU length-of-stay.

During the coming year, we will focus on FORE-SIGHT's growth in the neonatal and pediatric surgery and intensive care marketplaces. Our recent introduction of a pediatric sensor – along with our non-adhesive neonatal sensor – will expand our product breadth and usage. With almost 20,000 neonatal and pediatric beds in the US alone, coupled with the need for cerebral oximetry monitoring before, during, and after surgery, we see enormous growth potential in this market. We believe establishing a beachhead in key children's institutions is important to success in this market, and we have already sold FORE-SIGHT to two of the nation's leading children's hospitals.

In respect to operations, it is important to note that we have made measurable progress on a number of important initiatives in 2008 that strengthen our financial position. For example, we finished the year with positive cash flow from operations, lowered inventory levels, reduced debt and secured an extension of our line of credit through 2010.

For 2009 our priorities are to maximize our potential in the cerebral oximetry marketplace, derive the utmost value from our well-established core businesses and continue to manage operations efficiently and creatively. Invariably, the current economy will present challenges, but we remain confident in our basic strengths, our new products, the dedication of our loyal employees, and the fact that we are firmly positioned and ready to execute on the opportunities ahead. Our enduring commitment to build and maintain strong customer relationships will continue to differentiate us and propel us forward in today's increasingly competitive markets.

I would like to thank all of our employees, shareholders, partners and customers for their continued support of CASMED. We look forward to keeping you updated with news of our progress throughout the year.

Andrew E. Kersey
President & Chief Executive Officer

Detecting life threatening events on every critical patient

A higher level of care

The FORE-SIGHT® Absolute Cerebral Oximeter is the world's first monitor that delivers absolute measurement of cerebral tissue oxygen status. Using two sensors placed on the sides of the patient's forehead, FORE-SIGHT's LASER-SIGHT® optical technology projects harmless near-infrared light through the scalp and skull to reach the gray matter of the brain. Using data from these sensors, a CASMED-patented algorithm calculates real-time, continuous, absolute measurement of cerebral tissue oxygen saturation (SctO₂). Having this information available as a standard of care can decrease ICU length of stay and improve hospital risk management.

There is large market potential for FORE-SIGHT in adult, pediatric and neonatal applications. CASMED is using a targeted approach to enter major hospital centers in these markets, and is expanding clinical usage of the product through research on several new applications in a number of sites around the world.

The volume of clinical evidence supporting the use of the FORE-SIGHT system is growing. Recent and soon-to-be-published studies validate the importance of cerebral oximetry measurements during cardiac surgery, neonatal extracorporeal membrane oxygenation (ECMO), cardiopulmonary bypass, single-lung ventilation, carotid endarterectomy, craniotomy, shoulder arthroscopy and pediatric cardiac catheterization, among others.



"Cerebral oximetry brings a new level of vigilance to my practice. Using the FORE-SIGHT allows me to individualize patient management changes with the confidence that I'm doing all that I can to optimize perioperative outcome."

Hilary P. Grocott, MD, FRCPC, FASE, Professor of Anesthesia and Surgery, University of Manitoba Adjunct Professor of Anesthesiology, Duke University I.H. Asper Clinical Research Institute, Winnipeg, Manitoba, Canada

Support for the entire patient spectrum

The FORE-SIGHT system has FDA clearance for the non-invasive, continuous measurement of absolute cerebral tissue oxygen saturation for neonates, infants, children and adults.



Large Sensor
3.625" x 1.5"



Non-Adhesive Small Sensor
2.20" x 0.75"

Small Sensor
2.20" x 0.75"



Medium Sensor
3.15" x 1.20"

The Large (Adult) sensor can be used for a variety of procedures including cardiac, vascular, thoracic and orthopedic procedures.

The Medium (Pediatric) sensors can be used on children and small adults. Target areas for the medium sensor include pediatric intensive care, pediatric cardiovascular OR and cardiovascular intensive care.



Absolute clinical evidence

Why is an **absolute** measurement important? FORE-SIGHT absolute measurements correlate closely to invasive co-oximetry readings used to assess patient condition. FORE-SIGHT technology provides the accuracy of these measurements plus the added benefit of being both non-invasive and continuous.

In critical care areas such as operating rooms and intensive care units where cerebral oximetry is most often used, having precise, absolute measurements becomes even more important. An absolute measurement enables immediate feedback on patient condition. FORE-SIGHT's sensors can be placed on the patient at any time during care – even when the patient is transported to different departments pre-, during, and post-surgery – and the values can be directly compared.

Another important benefit of absolute measurement is the ability to correlate patient outcomes to defined cerebral saturation thresholds, and adjust

interventions and therapies based on these thresholds. In the NICU environment – where small, fragile patients cannot tolerate invasive blood sampling due to very low blood volume – reliable, non-invasive, precise measurements are critical.

In the adult cardiac population, recent studies presented at the Society of Cardiovascular Anesthesiologists annual meeting confirm the link between FORE-SIGHT cerebral tissue oxygen saturation measurements and short- and long-term patient outcomes. One study, conducted at the Mt. Sinai School of Medicine in NY, associated FORE-SIGHT SctO₂ saturation measurements below specific thresholds with short-term outcomes including time

“Cognitive dysfunction might result from cerebral desaturations; detecting them is the first step to avoid them.”

Thomas M Hemmerling, MD, DEAA,
Department of Anesthesiology – McGill University,
Institut de Genie Biomedical – Université de
Montréal, Montreal Canada

to remove the patient from ventilation and length of stay in the ICU following aortic surgery. Another study, conducted at Duke University Medical Center in NC, positively associated FORE-SIGHT SctO₂ values below particular thresholds with long-term post-operative cognitive decline. Aside from the benefits to the patient, the ability to affect these outcomes can significantly reduce hospital costs.

Preserving cognitive integrity

The brain is one of the organs most vulnerable to oxygen deprivation. Research shows that cerebral hypoxia (lack of oxygen to the brain) is a cause of neurological injuries and occurs in many surgical and clinical situations. Studies demonstrate that a decline in cerebral tissue oxygen saturation is associated with cognitive problems, short- and long-term brain damage, irreversible disabilities or death. Being able to monitor SctO₂ levels in the brain can be of vital importance, allowing clinicians to intervene and potentially avoid injury.

“More closely corresponds to quantitative data... more consistent with venous blood sampling data.”

David P.V. Bichell, MD, Professor-Cardiac Surgery, Chief-Pediatric Cardiac Surgery, Vanderbilt University, Monroe Carell Jr. Children's Hospital, Nashville, TN

3 Times Greater Precision Compared to Jugular Bulb

MacLeod D, Ikeda K, Vacchiano C. Simultaneous Comparison of FORE-SIGHT and INVOS Cerebral Oximeters to Jugular Bulb and Arterial Co-Oximetry Measurements in Healthy Volunteers. Society of Cardiovascular Anesthesia meeting; April 2009.

Learn more at www.cerebraloximetry.com



Small (Neonatal) sensors, are designed for the special needs of neonatal/infant patients. FORE-SIGHT technology allows sensors to remain on the patient when transferred between patient care areas such as the neonatal ICU and the neonatal cardiovascular OR, with no need for baseline or measurement calibration. Fiber-optic laser light technology (COOL-LIGHT™) does

not generate harmful heat at the patient contact site like LEDs can. And the Small sensors now have a non-adhesive option using a unique headband system and hydrogel adhesive – the same used on our premium Klear-Trace® electrodes – for cerebral oximetry monitoring without compromising skin integrity.

In the increasingly complicated surgical and intensive care environments, clinicians now require physiologic data from various monitoring products be displayed on a single screen. Able to interface with the world-leading Philips Healthcare patient monitoring systems using a VueLink module, FORE-SIGHT SctO₂ values and alarm messages can be displayed on Philips IntelliVue monitors installed

worldwide. This integrates FORE-SIGHT data with information from additional physiological parameters, ventilators, anesthesia machines and infusion devices – providing a comprehensive picture of patient status.

Advanced bedside monitoring

CASMED's core businesses in technology and accessories for bedside monitoring continue to provide the foundation for the business.

Vital signs monitors

CASMED outpaces the worldwide growth rate of the configured vital signs monitoring marketplace. Using best-in-class technologies, the Model 740, 750 and LIFEWARD® monitors are ideal for bedside monitoring of non-invasive blood pressure, pulse oximetry, ECG, temperature, end-tidal capnography, and non-invasive cardiac output. These monitors are available as CASMED-branded or private-label products with multiple combinations of capabilities. Solutions for the requirement to communicate with central stations and electronic medical records are being added to make CASMED monitors the most complete and affordable product line available.

Model 740



VUE



Model 750

OEM NIBP technology

Sold for use in other manufacturers' multi-parameter patient monitors for a wide range of clinical applications, CASMED's MAXNIBP® is the most advanced non-invasive blood pressure measurement technology available in the world. More accurate, reliable and faster than other systems, MAXNIBP performs even in high motion environments. The added ability to synchronize the measurement with a host monitor's ECG signal can improve the MAXNIBP technology's ability to filter and reject motion artifact. This is a growing area of CASMED's business, with strong, long-term partnerships with some of the world's leaders in vital signs monitoring.



OEM module



Physio-Control LP15

Blood pressure cuffs

CASMED offers a full line of disposable and reusable blood pressure cuffs in a variety of materials for every monitoring situation. A variety of fittings enable use of UltraCheck® and SoftCheck® cuffs with any monitor already in use, for simple hospital standardization. The diversity of the product line makes it ideal for private-label customers.



NICU supplies

These specialty products are designed for premature infants and their unique sensitive skin requirements. Includes electrodes, skin temperature probes, and adhesive reflectors.



Corporate Headquarters

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Independent Public Accountants

UHY LLP
Maritime Center
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New Haven, CT 06511

Form 10-K

A copy of our Form 10-K Report for the year ended December 31, 2008, filed with the Securities and Exchange Commission, is available to stockholders free of charge by writing to the Company to the attention of the Chief Financial Officer.

Annual Meeting

The Company's Annual Meeting of Stockholders will be held at 10:30 a.m. on June 10, 2009, at The WoodWinds, 29 Schoolground Road, Branford, CT.

Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The Company's common stock trades on the NASDAQ Global Market under the symbol "CASM". The following table shows the high and low bid quotations for the Company's common stock during each quarterly period for the last two years.

Quarter Ended	High	Low
March 31, 2007	\$ 8.40	\$ 6.26
June 30, 2007	\$ 8.51	\$ 6.27
September 30, 2007	\$ 7.50	\$ 4.25
December 31, 2007	\$ 6.47	\$ 4.76
March 31, 2008	\$ 5.54	\$ 4.05
June 30, 2008	\$ 4.30	\$ 2.81
September 30, 2008	\$ 4.21	\$ 2.72
December 31, 2008	\$ 4.00	\$ 1.66

Board of Directors

Louis P. Scheps
Chairman of the Board

Jerome Baron
Former Vice Chairman, Brean Murray, Carret & Co., LLC

Lawrence S. Burstein
President, Unity Venture Capital Associates, Ltd.

Evan Jones
Managing Director, jVEN Capital, LLC

Andrew E. Kersey
President and Chief Executive Officer

Executive Officers
Andrew E. Kersey
President and Chief Executive Officer

Jeffery A. Baird
Chief Financial Officer

Nathan B. Harris
Vice President, Sales and Marketing



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