UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

Quarterly Report Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

For the Quarterly Period Ended March 31, 2011

Commission File Number 0-13839

CAS MEDICAL SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**06-1123096**
(State or other jurisdiction of incorporation or organization)	(I.R.S. employer identification no.)

44 East Industrial Road, Branford, Connecticut 06405
(Address of principal executive offices, including zip code)

(203) 488-6056
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☐ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one): Large Accelerated Filer ☐ Accelerated Filer ☐ Non-Accelerated Filer ☐ Smaller Reporting Company ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: Common Stock, $.004 par value 13,587,983 shares as of May 10, 2011.

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PART I – FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

CAS Medical Systems, Inc.

Condensed Consolidated Balance Sheets
(Unaudited)

Assets	March 31, 2011	December 31, 2010
Current assets:		
Cash and cash equivalents	$ 2,200,963	$ 4,492,690
Accounts receivable, net of allowance	3,178,525	2,606,616
Recoverable income taxes	-	13,655
Inventories	4,834,243	4,812,965
Other current assets	344,377	310,187
Total current assets	10,558,108	12,236,113
Property and equipment:		
Leasehold improvements	252,517	252,517
Equipment at customers	1,856,346	1,686,919
Machinery and equipment	4,883,287	5,114,460
	6,992,150	7,053,896
Accumulated depreciation and amortization	(5,143,892)	(5,244,819)
Property and equipment, net	1,848,258	1,809,077
Intangible and other assets, net	674,616	651,626
Total assets	$ 13,080,982	$ 14,696,816

See accompanying notes.

CAS Medical Systems, Inc.

Condensed Consolidated Balance Sheets
(Unaudited)

Liabilities and Stockholders' Equity	**March 31, 2011**	**December 31, 2010**
Current liabilities:		
Accounts payable	$ 1,518,404	$ 2,283,906
Accrued expenses	1,083,463	909,331
Total current liabilities	2,601,867	3,193,237
Deferred gain on sale and leaseback of property	865,767	899,426
Income taxes payable	211,159	211,159
Total liabilities	3,678,793	4,303,822
Commitments and Contingencies	—	—
Stockholders' equity:		
Preferred stock, $.001 par value per share, 1,000,000 shares authorized, no shares issued or outstanding	—	—
Common stock, $.004 par value per share, 40,000,000 shares authorized, 13,633,883 and 13,575,401 shares issued at March 31, 2011 and December 31, 2010, respectively, including shares held in treasury	54,536	54,302
Common stock held in treasury, at cost - 86,000 shares	(101,480)	(101,480)
Additional paid-in capital	10,217,492	10,002,600
Retained earnings	(768,359)	437,572
Total stockholders' equity	9,402,189	10,392,994
Total liabilities and stockholders' equity	$ 13,080,982	$ 14,696,816

See accompanying notes.

CAS Medical Systems, Inc.

Condensed Consolidated Statements of Operations
(Unaudited)

	Three Months Ended March 31,	
	2011	**2010**
Net sales	$ 5,643,124	$ 6,108,444
Cost of sales	3,508,570	3,454,178
Gross profit	2,134,554	2,654,266
Operating expenses:		
Research and development	712,344	463,677
Selling, general and administrative	2,690,843	2,119,760
	3,403,187	2,583,437
Operating (loss) income	(1,268,633)	70,829
Other (income) expense, net	(2,562)	25,003
(Loss) income from continuing operations before income taxes	(1,266,071)	45,826
Income tax (benefit) expense	(20,448)	6,946
(Loss) income from continuing operations	(1,245,623)	38,880
Income from discontinued operations, net of income taxes	39,692	168,642
Net (loss) income:	$ (1,205,931)	$ 207,522
(Loss) income per common share from continuing operations -		
Basic	$ (0.10)	$ 0.00
Diluted	$ (0.10)	$ 0.00
Income per common share from discontinued operations -		
Basic	$ 0.01	$ 0.02
Diluted	$ 0.01	$ 0.02
Net (loss) income per common share –		
Basic	$ (0.09)	$ 0.02
Diluted	$ (0.09)	$ 0.02
Weighted average number of common shares outstanding:		
Basic	13,011,198	11,343,363
Diluted	13,011,198	12,246,955

See accompanying notes.

CAS Medical Systems, Inc.

Condensed Consolidated Statements of Cash Flows
(Unaudited)

	Three Months Ended March 31,	
	2011	**2010**
OPERATING ACTIVITIES:		
Cash flow from operating activities		
Net (loss) income	$ (1,205,931)	$ 207,522
Income from discontinued operations	39,692	168,642
(Loss) income from continuing operations	(1,245,623)	38,880
Adjustments to reconcile net (loss) income from continuing operations to net cash (used in) provided by operating activities		
Depreciation and amortization	245,099	234,276
Stock compensation	210,189	19,267
Amortization of gain on sale and leaseback	(33,659)	(33,660)
Deferred income taxes	(20,448)	—
Changes in operating assets and liabilities:		
Accounts receivable	(571,909)	(186,293)
Inventories	(21,278)	615,195
Other current assets	(34,190)	67,358
Accounts payable and accrued expenses	(591,370)	192,707
Income taxes payable	13,655	33,577
Net cash (used in) provided by operating activities of continuing operations	(2,049,534)	981,307
INVESTING ACTIVITIES:		
Expenditures for property and equipment	(237,120)	(12,840)
Purchase of intangible assets	(70,150)	(28,359)
Net cash used by investing activities of continuing operations	(307,270)	(41,199)
FINANCING ACTIVITIES:		
Repayments of notes payable	—	(50,678)
Repayments (borrowings) under line-of-credit	—	(694,657)
Repayments of long term debt	—	(159,707)
Deferred financing costs	—	(111,369)
Proceeds from issuance of common stock	4,937	11,777
Net cash provided by (used in) financing activities of continuing operations	4,937	(1,004,634)
Net cash used by continuing operations	(2,351,867)	(64,526)
Cash flows from discontinued operations		
Cash provided by operating activities of discontinued operations	60,140	526,353
Net cash provided by discontinued operations	60,140	526,353
Net change in cash and cash equivalents	(2,291,727)	461,827
Cash and cash equivalents, beginning of period	4,492,690	1,186,779
CASH AND CASH EQUIVALENTS, END OF PERIOD	$ 2,200,963	$ 1,648,606
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION		
Cash paid during the period for interest	$ —	$ 50,927
Cash paid during the period for income taxes, net	$ —	$ 3,500

See accompanying notes.

CAS Medical Systems, Inc.
Notes to Condensed Consolidated Financial Statements
(Unaudited)

March 31, 2011

(1) The Company

CAS Medical Systems, Inc. (the "Company" or "CASMED") is a medical technology company that develops, manufactures and distributes non-invasive patient monitoring products that are vital to patient care. Our products include the FORE-SIGHT® Absolute Tissue Oximeter and sensors, and our Traditional Monitoring products which include MAXNIBP® blood pressure measurement technology, bedside monitoring products and supplies for neonatal intensive care. These products are designed to provide accurate, non-invasive, biologic measurements that guide healthcare providers to deliver improved patient care. Our products are sold by CASMED through its own sales force, via distributors, manufacturers' representatives and pursuant to original equipment manufacturer ("OEM") agreements both internationally and in the United States.

(2) Basis of Presentation

The condensed consolidated financial statements included herein have been prepared, without audit, pursuant to the rules and regulations of the Securities and Exchange Commission. Certain information and disclosures included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America have been condensed or omitted pursuant to such rules and regulations. These condensed consolidated financial statements should be read in conjunction with the financial statements and notes thereto included in the Company's Annual Report filed on Form 10-K for the year ended December 31, 2010. The condensed consolidated balance sheet as of December 31, 2010 was derived from the audited financial statements.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of sales and expenses during the reporting period. Estimates that are particularly sensitive to change in the near-term are inventory valuation allowances, deferred income tax asset valuation allowances and allowances for doubtful accounts. Actual results could differ from those estimates. In the opinion of the Company, all adjustments (consisting of normal recurring accruals) necessary to present fairly the consolidated financial position of the Company and its consolidated results of operations and cash flows have been included in the accompanying financial statements. The results of operations for interim periods are not necessarily indicative of the expected results for the full year.

(3) Inventories; Property and Equipment; Intangible and Other Assets

Inventories consist of:

	March 31, 2011	December 31, 2010
Raw materials	$ 3,878,768	$ 3,733,550
Work in process	9,996	2,950
Finished goods	945,479	1,076,465
	$ 4,834,243	$ 4,812,965

Property and equipment are stated at cost and include FORE-SIGHT® cerebral oximetry monitors located at customer sites primarily within the United States. Such equipment is held under a no-cost program whereby customers purchase disposable sensors for use with the Company's equipment. The Company retains title to the monitors shipped to its customers under this program. Other property and equipment is depreciated using the straight-line method over the estimated useful lives of the assets.

Intangible assets consist of patents issued, patents pending, trademarks, purchased technology and other deferred charges which are recorded at cost. Patents are amortized on a straight-line basis over 20 years. Capitalized costs are amortized over their estimated useful lives. Deferred financing costs are amortized over the term of the related debt. Other deferred charges are amortized over their estimated useful lives.

Intangible and other assets consist of the following:

	March 31, 2011	December 31, 2010
Patents and other assets	$ 648,289	$ 593,166
Patents pending	260,002	254,975
Purchased technology	46,026	46,026
Deferred finance charges	180,205	170,205
	1,134,522	1,064,372
Accumulated amortization	(459,906)	(412,746)
	$ 674,616	$ 651,626

Amortization expense of intangible and other assets for the three months ended March 31, 2011 was $47,000. Estimated amortization expense for the calendar year 2011 is $98,000. Expected amortization expense of intangible and other assets for the next five calendar years follows:

2012	$ 56,000
2013	40,000
2014	18,000
2015	14,000
2016	14,000
	$ 142,000

The Company reviews its intangibles and other assets for impairment at least annually or whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The Company believes that the carrying amounts of its long-lived assets are fully recoverable.

(4) Principal Products and Services

The Company has categorized its sales of products and services into the following categories:

- Tissue oximetry monitoring products – includes sales of the FORE-SIGHT® cerebral monitors, sensors and accessories.

- Traditional monitoring products includes:

1) Vital signs bedside monitors and accessories incorporating various combinations of measurement parameters for both human and veterinary use. Parameters found in these monitors include the Company's proprietary MAXNIBP® non-invasive blood pressure, pulse oximetry, electro-cardiography, temperature, and capnography.

2) Blood pressure measurement technology – includes sales to OEM manufacturers of the Company's proprietary MAXNIBP non-invasive blood pressure technology, sold as a discrete module to be included in the OEM customers own multi-parameter monitors, and related license fees.

3) Supplies and service – includes sales of neonatal intensive care supplies including electrodes and skin temperature probes, and service repair.

(5) Discontinued Operations

On November 5, 2010, the Company sold certain assets and liabilities related to its Statcorp business unit, which included its blood pressure and infusor cuff product lines, in exchange for $3,200,000 in cash at closing. As provided in the purchase agreement, the aggregate consideration paid to the Company at closing was subject to an adjustment based upon changes in the net working capital of the business as of the closing date relative to a net working capital target. The adjustment resulted in $78,964 of additional consideration paid to the Company. Further, the agreement provides for the buyer to pay up to an additional $350,000 in earn-out payments if certain net revenue thresholds are achieved in the six-month period following the closing. As of March 31, 2011, the Company has not recorded an accrual for potential earn-out revenues due to the uncertainty associated with reaching the net revenue targets.

The following table represents the financial results of the discontinued operations for the three months ended March 31, 2011 and 2010.

	March 31, 2011	March 31, 2010
Revenues	$ —	$ 2,386,588
Cost of products sold	—	2,084,874
Gross profit	—	301,714
Operating expenses	—	78,874
Interest expense	—	24,067
Other income	(60,140)	—
Income from discontinued operations before income taxes	60,140	198,773
Income tax expense	20,448	30,131
Income from discontinued operations	$ 39,692	$ 168,642

Interest expense allocated to discontinued operations relates to the Company's bank term note which was originated to finance the acquisition of the Statcorp business unit in May 2005. The term note was repaid in full commensurate with the sale of the business unit in November 2010.

Income from discontinued operations of $60,140 for the three months ended March 31, 2011 primarily includes fees paid by the buyer for transitional support services provided by the Company. Transitional services are not expected to be significant in future periods.

(6) Income (Loss) per Common Share

A summary of the denominators used to compute basic and diluted income (loss) per share follows:

	Three Months Ended March 31,	
	2011	2010
Weighted average shares outstanding, net of unvested restricted common shares – used to compute basic income (loss) per share	13,011,198	11,343,363
Dilutive effect of unvested restricted common shares, and outstanding warrants and options	—	903,592
Weighted average shares of dilutive securities outstanding – used to compute diluted income (loss) per share	13,011,198	12,246,955

Basic earnings per share is calculated by dividing net income (loss) by the weighted average number of shares of common stock outstanding during the period. Diluted earnings per share assumes the exercise or conversion of dilutive securities using the treasury stock method.

Weighted average shares outstanding, net of restricted shares, used to compute basic and diluted loss per share for the three months ended March 31, 2011 excludes common stock equivalents such as unvested restricted common shares, outstanding warrants and options which are excluded from the computation of diluted earnings per share as their inclusion would be anti-dilutive. At March 31, 2010, stock options to purchase 242,500 shares were excluded from the diluted earnings per share calculation as they would have been anti-dilutive.

(7) Stock-Based Compensation

Stock compensation expense was $210,189 and $19,267 for the three-month periods ended March 31, 2011 and 2010, respectively. Stock compensation for the three months ended March 31, 2010 includes a forfeiture adjustment of ($48,619).

As of March 31, 2011, the unrecognized stock-based compensation cost related to stock option awards and unvested restricted common stock was $2,128,000. Such amount, net of estimated forfeitures, will be recognized in operations through the first quarter of 2015.

The following table summarizes the Company's stock option information as of and for the three-month period ended March 31, 2011:

	Option Shares	Weighted-Average Exercise Price	Aggregate Intrinsic Value (1)	Weighted-Average Contractual Life Remaining in Years
Outstanding at December 31, 2010	935,875	$ 2.29	$ 877,788	7.3
Granted	200,000	3.16		
Cancelled	(16,667)	3.49		
Exercised	(300)	1.50		
Outstanding at March 31, 2011	1,118,908	$ 2.45	$ 922,647	7.6
Exercisable at March 31, 2011	418,614	$ 2.34	$ 494,540	4.4
Expected to vest at March 31, 2011	1,109,628	$ 2.45	$ 915,988	7.6

(1) The intrinsic value of a stock option is the amount by which the market value, as of the applicable date, of the underlying stock exceeds the option exercise price.

The exercise period for all outstanding stock options may not exceed ten years from the date of grant. Stock options granted to employees and members of the board of directors vest typically not less than three years from the grant date. The Company attributes stock-based compensation cost to operations using the straight-line method over the applicable vesting period.

During the three months ended March 31, 2011, stock options for 200,000 shares of common stock were granted to executive officers of the Company including an inducement stock option grant of 150,000 shares issued to our Vice President of Sales and Marketing commensurate with the start of his employment with the Company as of January 7, 2011. The fair value of each option granted was estimated on the date of grant using the Black-Scholes option-pricing model assuming a weighted average expected stock price volatility of 93.3%, a weighted average expected option life of 4.4 years, an average risk-free interest rate of 3.4% and a 0.0% average dividend yield. The weighted average fair value of the stock options granted during the three months ended March 31, 2011 was $2.20 per share. Certain of the stock options vest 25% at twelve months from date of grant and thereafter vest monthly over the next thirty-six months while one of the stock options vests 25% per year from date of grant.

Restricted stock granted to employees vests typically over a period of not less than three years while restricted stock granted to members of the board of directors vests ratably over twelve months from date of grant. During the

three months ended March 31, 2011, 60,000 shares of restricted common stock were granted including 50,000 shares to executive officers of the Company. Our Vice President of Sales and Marketing was awarded an inducement restricted stock grant of 25,000 shares commensurate with the start of his employment. As of March 31, 2011, 524,624 restricted shares issued to employees and members of the board of directors remain issued and non-vested.

The unamortized stock compensation expense associated with the restricted shares as of March 31, 2011 was $942,000 and will be recognized through March 2015.

A summary of the restricted shares outstanding and changes for the relevant periods follow:

	Three Months Ended March 31, 2011	Weighted Average Grant Date Fair-Value	Twelve Months Ended December 31, 2010	Weighted Average Grant Date Fair-Value
Outstanding at beginning of period	484,070	$ 1.87	190,265	$ 2.56
Granted	60,000	3.12	451,222	2.04
Cancelled	(3,334)	2.09	(18,501)	1.85
Vested	(16,112)	2.42	(138,916)	2.56
Outstanding at end of period	524,624	$ 2.32	484,070	$ 1.87

(8) Financing Arrangements and Liquidity

The Company's line-of-credit agreement (the "Agreement"), as amended, with its bank lender, NewAlliance Bank (the "Bank") expired on April 1, 2011. The Company has executed a non-binding financing proposal with its lender and issued a deposit toward consummating an agreement with respect to a new line-of-credit. While management is confident it will be able to secure an agreement with its lender, there can be no assurance that we will enter into such an agreement or that the terms will be substantially equivalent to the recently expired Agreement. Under the Agreement, the maximum borrowing limit was $5,000,000 and was derived from a formula which included eligible inventory and accounts receivable. The interest rate was the Bank's Base Rate (as defined in the Agreement) plus 2.0% with a minimum interest rate of 5.0% per annum. Additionally, the Agreement established certain financial covenants that the Company was required to achieve.

As of and for the three months ended March 31, 2011, there was no outstanding balance under the Agreement. In addition, the Company held approximately $2,201,000 in cash and cash equivalents as of March 31, 2011.

The Company's ordinary short-term operating needs for 2011 could be met from our current cash on hand. Our 2011 business plans, however, which we began executing during the first quarter, call for additional discretionary expenditures primarily to increase our efforts to develop and market our FORE-SIGHT tissue oximetry technology. Those business plans are expected to be funded from our current cash on hand and additional capital which the Company is expecting to raise. Although the Company expects to successfully raise additional funding, to the extent that the Company is unable to do so, it will be required to alter its 2011 business plans and substantially reduce its planned level of spending.

(9) Income Taxes

The Company does not expect to record taxable income during its 2011 fiscal year. Further, income tax benefits that may be generated during 2011 would be offset by a deferred income tax asset valuation allowance. Management established the valuation allowance at December 31, 2009 as a result of then recent cumulative pre-tax losses and its estimates of future taxable income. Management has continued to perform the required analysis regarding the realization of our deferred income tax assets concluding that a full valuation allowance is warranted. As of March 31, 2011, the deferred income tax asset valuation allowance balance was $1,699,000.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Certain statements included in this report, including without limitation statements in Management's Discussion and Analysis of Financial Condition and Results of Operations, which are not historical facts, are "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements represent the Company's current expectations regarding future events. The Company cautions that such statements are qualified by important factors that could cause actual results to differ materially from expected results which may be contained in the forward-looking statements. All forward-looking statements involve risks and uncertainties, including, but not limited to, the following: foreign currency fluctuations, regulations and other economic and political factors which affect the Company's ability to market its products internationally, changes in economic conditions that adversely affect demand for the Company's products, potential liquidity constraints, new product introductions by the Company's competitors, increased price competition, rapid technological changes, dependence upon significant customers, availability and cost of components for the Company's products, the impact of any product liability or other adverse litigation, marketplace acceptance for the Company's new products, FDA and other governmental regulatory and enforcement actions, changes in reimbursement levels from third-party payors, changes to federal research and development grant programs presently utilized by the Company and other factors described in greater detail in the Company's most recent annual report on Form 10-K.

Results of Operations

For the three months ended March 31, 2011, the Company reported a net loss of $1,206,000 or $(0.09) per basic and diluted share compared to net income of $208,000 or $0.02 per basic and diluted share for the three months ended March 31, 2010. The net loss from continuing operations was $1,246,000 or ($0.10) per basic and diluted common share compared to net income from continuing operations of $39,000 or $0.00 per basic and diluted common share reported for the three months ended March 31, 2010. Income from discontinued operations was $40,000 or $0.01 per share for the three months ended March 31, 2011 compared to income from discontinued operations of $169,000 or $0.02 per share for the same period of the prior year.

The Company generated revenues of $5,643,000 for the three months ended March 31, 2011, a decrease of $465,000 or 8%, compared to revenues of $6,108,000 for the three months ended March 31, 2010. The following table provides information with respect to revenues by major category:

($000's)	**Three Months Ended March 31, 2011**	**Three Months Ended March 31, 2010**	**Increase/ (Decrease)**
Traditional Vital Signs Monitoring	$ 4,053	$ 4,581	$ (528)
Tissue Oximetry Monitoring	1,562	1,364	198
	5,615	5,945	(330)
Discontinued Products – Apnea/Analogic	28	163	(135)
	$ 5,643	$ 6,108	$ (465)
Domestic Sales	$ 4,058	$ 3,940	$ 118
International Sales	1,585	2,168	(583)
	$ 5,643	$ 6,108	$ (465)

Tissue oximetry product revenues of $1,562,000 for the three months ended March 31, 2011 were 15% or $198,000 above the $1,364,000 reported for the same period in the prior year. As of March 31, 2011, the Company's worldwide installed base of oximetry monitors was 419 units. Details of tissue oximetry sales are as follows:

($000's)	Three Months Ended March 31, 2011	Three Months Ended March 31, 2010	Increase/ (Decrease)
Monitors & Accessories Sales	$ 393	$ 625	$ (232)
Sensors Sales	1,169	739	430
	$ 1,562	$ 1,364	$ 198
Domestic Sales	$ 926	$ 691	$ 235
International Sales	636	673	(37)
	$ 1,562	$ 1,364	$ 198

Worldwide sales of monitors and accessories declined $232,000 to $393,000 from $625,000 reported for the first quarter of 2010. The first quarter of 2010 included a significant sale to a key international customer. Worldwide sensor sales were $1,169,000 or 75% of total tissue oximetry product revenues, an increase of $430,000, or 58%, over worldwide tissue oximetry sensors sales of $739,000 recorded for the first three months of 2010. Domestic tissue oximetry product sales were $926,000, or 59% of total tissue oximetry product sales which represented an increase of $235,000 or 34% over the $691,000 recorded for the first three months of 2010. International tissue oximetry product sales were $636,000 or 41% of total tissue oximetry product sales for the first quarter of 2011.

Traditional vital signs monitoring product revenues for the three months ended March 31, 2011 decreased $528,000 or 12% to $4,053,000 from $4,581,000 reported for the same period in the prior year. The decrease was associated with reductions in sales of the Company's MAXNIBP® technology.

Sales to the U.S. market accounted for $4,058,000 or 72% of the total revenues reported for the three months ended March 31, 2011, an increase of $118,000 or 3% from the $3,940,000 of sales reported for the three months ended March 31, 2010. Sales were led by a 34% increase in U.S. tissue oximetry sales partially offset by reductions in OEM technology sales. International sales accounted for $1,585,000 or 28% of the total revenues reported for the three months ended March 31, 2011, a decrease of $583,000 or 27% from the $2,168,000 reported for the same period of the prior year. Decreases in international sales occurred in nearly all product categories including the discontinued infant sleep apnea and Analogic products.

Cost of sales was $3,509,000 or 62.2% of revenues for the three months ended March 31, 2011 compared to $3,454,000 or 56.5% for the same period in the prior year. Unfavorable product mix driven by lower OEM technology sales and warranty costs were primarily responsible for the increased cost of sales as a percentage of sales.

Total operating expenses for the three months ended March 31, 2011 increased $819,000 or 32% to $3,403,000 from $2,584,000 for the three months ended March 31, 2010. Operating expenses increased as expected over 2010 levels as a result of planned increases in R&D expenditures and incremental sales and marketing costs related to planned expansion of sales management and field sales personnel for the Company's tissue oximetry product line.

Research and development expenses increased $248,000 or 53% to $712,000 for the three months ended March 31, 2011 compared to $464,000 for the three months ended March 31, 2010. The increase resulted from additional salaries and related fringe benefits due to personnel additions effected during the fourth quarter of 2010, increased consulting costs, clinical research efforts and reductions in reimbursements from the National Institutes of Health ("NIH") pertaining to the Company's Near-Infrared Spectroscopy ("NIRS") technology compared to the same period of the prior year. For the three months ended March 31, 2011, NIH reimbursements totaled $78,000 compared to $122,000 for the three months ended March 31, 2010. As of March 31, 2011, a maximum of approximately $600,000 remains available under the $2.8 million multi-year NIH award received in 2007.

Selling, general and administrative expenses increased $571,000 or 27% to $2,691,000 for the three months ended March 31, 2011 compared to $2,120,000 for the three months ended March 31, 2010. Sales and marketing expenses increased $330,000 or 26% to $1,606,000 from $1,276,000 primarily from increases in third party sales commissions, field sales consulting costs, recruitment and relocation expenses. G&A expenses increased $241,000 or

29% to $1,085,000 from $844,000 primarily due to a $191,000 increase in stock compensation amortization and accrued incentive costs which were partially offset by reduced legal expenses.

Other (income)/expense improved to $3,000 of income for the three months ended March 31, 2011 compared to $25,000 of expense for the three months ended March 31, 2010. The Company did not incur interest expense during the first quarter of 2011 as a result of retiring its bank term debt and eliminating its outstanding balance on its line-of-credit during the fourth quarter of 2010.

The income tax benefit was $20,000 for continuing operations for the first three months of 2011. Such benefit was offset by related income tax expense for discontinued operations. The Company does not expect to record taxable income during its 2011 fiscal year. Income tax benefits that may be generated during 2011 would be offset by a deferred income tax asset valuation allowance. Management established the valuation allowance as of December 31, 2009 as a result of then recent cumulative pre-tax losses and its estimates of future taxable income. Management has continued to perform the required analysis regarding the realization of our deferred income tax assets concluding that a full valuation allowance is warranted. As of March 31, 2011, the deferred income tax asset valuation allowance balance was $1,699,000.

Financial Condition, Liquidity and Capital Resources

At March 31, 2011, the Company's cash and cash equivalents totaled $2,201,000 compared to $4,493,000 at December 31, 2010. Working capital decreased $1,087,000 to $7,956,000 at March 31, 2011, from $9,043,000 on December 31, 2010. The Company's current ratio decreased to 2.87 to 1 from 3.83 to 1.

Cash used in continuing operations for the three months ended March 31, 2011 was $2,050,000 compared to cash provided by operations of $981,000 for the same period in the prior year. Losses from continuing operations of $811,000 before depreciation, amortization, stock compensation expenses and deferred income taxes, increases in accounts receivable of $572,000 and decreases in accounts payable and accrued expenses of $591,000 were primarily responsible for the cash used by continuing operations. Cash provided by operations of $981,000 for the three months ended March 31, 2010 resulted primarily from income from continuing operations of $293,000 before depreciation, amortization and stock compensation expenses, reductions in inventory of $615,000 and increases in accounts payable and accrued expenses of $193,000.

Cash used in investing activities was $307,000 for the three months ended March 31, 2011 compared to cash used in investing activities of $41,000 for the same period in the prior year. Expenditures for property and equipment of $237,000 for the three months ended March 31, 2011 were driven by FORE-SIGHT cerebral oximeter demonstration equipment requirements. Purchases of intangible assets of $70,000 for the first three months of 2011 primarily represent translation costs.

Cash provided by financing activities for the three months ended March 31, 2011 was $5,000 compared to cash used in financing activities of $1,005,000 for the first three months of the prior year. During the three months ended March 31, 2010, the Company repaid $695,000 against the line-of-credit and repaid $210,000 toward its long-term debt and note payable. Deferred financing costs of $111,000 were associated with the Company's bank debt refinancing completed during March 2010.

The Company's line-of-credit agreement, as amended, with its bank lender, NewAlliance Bank, expired on April 1, 2011. The Company has executed a non-binding financing proposal and issued a deposit toward consummating a new agreement. While management is confident it will be able to secure an agreement with its lender, there can be no assurance that we will enter into such an agreement or that the terms will be substantially equivalent to the recently expired agreement.

As of and throughout the three month period ended March 31, 2011, there was no outstanding balance under the line-of-credit. In addition, the Company held approximately $2,201,000 in cash and cash equivalents as of March 31, 2011.

The Company's ordinary short-term operating needs for 2011 could be met from our current cash on hand. Our 2011 business plans, however, which we began executing during the first quarter, call for additional discretionary expenditures primarily to increase our efforts to develop and market our FORE-SIGHT tissue oximetry technology. Those business plans are expected to be funded from our current cash on hand and additional capital which the Company is expecting to raise. Although the Company expects to successfully raise additional funding, to the extent that the Company is unable to do so, it will be required to alter its 2011 business plans and substantially reduce its planned level of spending.

Cash flows may be influenced by a number of factors, including changing market conditions, market acceptance of the FORE-SIGHT system, and the loss of one or more key customers. Borrowings under any future loan agreement may be impacted by our failure to meet financial covenants or the discretionary actions of our lender. There can be no assurance that we will be successful in raising additional capital or entering into a new line-of-credit agreement.

Critical Accounting Policies and Estimates

The Company's discussion and analysis of financial condition and results of operations are based on the condensed consolidated financial statements. The preparation of these financial statements requires the Company to make estimates and judgments that affect the amounts reported in them. The Company's critical accounting policies and estimates include those related to revenue recognition, the valuations of inventories and deferred income tax assets, measuring stock compensation, and warranty costs, determining useful lives of intangible assets, and making asset impairment valuations. The Company bases its estimates on historical experience and on various other assumptions that management believes to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. For additional information about the Company's critical accounting policies and estimates, see Item 7 and Note 2 to the financial statements included in the Company's Form 10-K for the year ended December 31, 2010. There were no significant changes in critical accounting policies and estimates during the three months ended March 31, 2011.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The Company at times has certain exposures to market risk related to changes in interest rates. The Company had an outstanding line-of-credit at March 31, 2011, however there was no outstanding balance under the agreement which expired April 1, 2011. The Company holds no derivative securities for trading or other purposes and is not subject in any material respect to currency or other commodity risk.

ITEM 4. CONTROLS AND PROCEDURES

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in the Company's Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to the Company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure based on the definition of "disclosure controls and procedures" in Rule 13a-15(e). In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management necessarily is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

The Company carried out an evaluation, under the supervision and with the participation of the Company's management, including the Company's Chief Executive Officer and the Company's Chief Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures as of March 31, 2011. Based upon the foregoing evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures were effective as of that date.

There have been no changes in the Company's internal control over financial reporting during the quarter ended March 31, 2011 that have materially affected, or are reasonably likely to materially affect the Company's internal control over financial reporting.

Reference is made to the Certifications of the Chief Executive Officer and the Chief Financial Officer about these and other matters attached as Exhibits 31.1, 31.2 and 32.1 to this quarterly report on Form 10-Q.

PART II – OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

The manufacture and sale of our products exposes us to product liability claims and product recalls, including those which may arise from misuse or malfunction of, or design flaws in, our products or use of our products with components or systems not manufactured or sold by us. Product liability claims or product recalls, regardless of their ultimate outcome, could require us to spend significant time and money in litigation or to pay significant damages. We are currently a defendant in a pending product liability action. We believe that our product liability insurance is sufficient to cover any damages and costs that are likely with respect to this matter. There can be no assurance however that this will be the case with respect to this or any future matters. Furthermore, we may not be able to obtain insurance in the future at satisfactory rates or in adequate amounts. In addition, publicity pertaining to the misuse or malfunction of, or design flaws in, our products could impair our ability to successfully market and sell our products and could lead to product recalls.

In addition, we may become, in the normal course of our business operations, a party to other legal proceedings in addition to those described in the paragraph above. None of these other proceedings would be expected to have a material adverse impact on our consolidated results of operations, financial conditions, or cash flows.

ITEM 6. EXHIBITS

10.1 Employment agreement with Matthew J. Herwig dated January 7, 2011 "(Incorporated by reference to the Company's Form 8-K filed on January 10, 2011)"

10.2 Inducement Non-Qualified Stock Option Agreement with Matthew J. Herwig dated January 7, 2011 ("Incorporated by reference to the Company's Form 8-K filed on January 10, 2011)"

10.3 Inducement Restricted Stock Agreement with Matthew J. Herwig dated January 7, 2011 ("Incorporated by reference to the Company's Form 8-K filed on January 10, 2011)"

31.1 Certification pursuant to Rule 13a-14(a) of Thomas M. Patton, President and Chief Executive Officer

31.2 Certification pursuant to Rule 13a-14(a) of Jeffery A. Baird, Chief Financial Officer

32.1 Certification pursuant to 18 U.S.C. 1350 of Periodic Financial Report of Thomas M. Patton, President and Chief Executive Officer and Jeffery A. Baird, Chief Financial Officer

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 thereunto duly authorized.

CAS MEDICAL SYSTEMS, INC.
(Registrant)

/s/ Thomas M. Patton — Date: May 11, 2011

By: Thomas M. Patton
President and Chief Executive Officer

/s/ Jeffery A. Baird — Date: May 11, 2011

By: Jeffery A. Baird
Chief Financial Officer

EXHIBIT 31.1

CERTIFICATION

I, Thomas M. Patton, certify that:

1. I have reviewed this quarterly report on Form 10-Q of CAS Medical Systems, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15 (f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Thomas M. Patton Date: May 11, 2011

Thomas M. Patton
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION

I, Jeffery A. Baird, certify that:

1. I have reviewed this quarterly report on Form 10-Q of CAS Medical Systems, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15 (f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Jeffery A. Baird Date: May 11, 2011

Jeffery A. Baird
Chief Financial Officer

EXHIBIT 32.1

Certification of Periodic Financial Report

Pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, Thomas M. Patton, the President and Chief Executive Officer, and Jeffery A. Baird, the Chief Financial Officer of CAS Medical Systems, Inc. (the "issuer"), do hereby certify that the quarterly report on Form 10-Q accompanying this certification (the "report") fully complies with the requirements of section 13 (a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and that information contained in the report fairly presents, in all material respects, the financial condition and results of operations of the issuer.

/s/ Thomas M. Patton

Thomas M. Patton
President and Chief Executive Officer
CAS Medical Systems, Inc.

May 11, 2011

/s/ Jeffery A. Baird

Jeffery A. Baird
Chief Financial Officer
CAS Medical Systems, Inc.

May 11, 2011