

LMS Medical Systems

# Annual Report 2005





“Patient safety, when margins of safety are shrinking, is created by increased situational awareness, superb communication and high reliability team performance. We must acknowledge that human error is inevitable. Strategies aimed at recognition, mitigation, and recovery of error are worthy of careful implementation.”

G. Eric Knox, MD



## Message to Shareholders



*Diane Côté  
President & Chief Executive Officer*

2004 was a landmark year for LMS. Several key milestones were met and the company has started on its path for growth with a clinical and business presence in the marketplace.

LMS has doubled its install base to over 20 hospitals running either its clinical information systems and/or the first module of its exclusive Decision Support Suite (DSS). The company has obtained clearance for a second module of the DSS, CALM Patterns, a major enhancement to obstetrical practice and risk management alike that focuses on the fetus. In addition, the company started trading on the Toronto Stock Exchange and as of February 2005, is now also listed on the American Stock Exchange.

2004 was a year of positioning and preparation. It was the launching pad for LMS activities in the deployment of its leadership in the obstetrical risk management arena. This is where LMS differentiates itself. Various disciplines, knowledge and expertise need to converge in order to improve care, measure and manage risk and increase patient safety. LMS has chosen to accelerate this convergence and articulate value proposals that can resonate with all stakeholders in the OB risk management arena, whether clinical, administrative or financial.

We therefore look to the coming year to produce a sequence of statements in several areas. In clinical terms, we will continue to drive the delivery of new modules of the DSS and work toward their regulatory clearance in multiple jurisdictions. In product terms, we will increase the ease and flexibility of use of our product offerings.

Our market presence will be bolstered by the recently completed alliance with Aon Risk Services. As a major healthcare consultant and insurance broker, Aon is keenly aware of the cost and impact of unmanaged risk and of the necessity to provide the highest quality of care at all times. We have chosen to join arms in stepping up to the challenge of identifying areas of risk, building successful risk reduction strategies and ultimately programs that support better access and affordability of insurance for institutions and practitioners alike.

We have also formed a Risk and Patient Safety Advisory Board. This group will provide guidance to LMS on how to achieve widespread adoption of its sophisticated risk management tools in obstetrics. To date, the Board includes a roster of opinion leaders in OB clinical care, risk management, understanding of causes of medical errors and insurance. We are delighted to have access to this expertise and look forward to their assistance in the coming year.

In 2005, these thrusts will translate into implementations in hospitals of all sizes and collaborations with systems and networks of institutions looking to improve care and patient safety.

LMS is thankful for the opportunity its shareholders provide to focus on innovation, define new strategies and assist hospital teams in stepping up to the challenge of improving care and increasing patient safety in obstetrics.



*Dr. Emily F. Hamilton  
Vice President & Founder, LMS Medical Systems*

A handwritten signature in black ink, appearing to read "Diane Côté". The signature is stylized and fluid.

*Diane Côté  
President and Chief Executive Officer*

A handwritten signature in black ink, appearing to read "Emily Hamilton". The signature is elegant and cursive.

*Dr. Emily F. Hamilton  
Vice President and Founder, LMS Medical Systems*

## Risk Management

No one means to make mistakes or to unduly alarm mothers during birth, an intense process that almost always has a happy ending. During labor it is the responsibility of medical staff to evaluate and respond to the progression of labor and the tolerance of the baby to the stresses of labor. The progression from normal to abnormal is often gradual and considerable uncertainty exists as to where to draw the line between them. In addition to the difficulty of this assessment, perinatal units are prone to at least three human factors that carry an increased risk of medical error: work overload (which has been associated with up to an 11 fold increase in perinatal error rates), poor communication (10 fold increase), and misperception of risk (4 fold increase).

CALM tools perform multidimensional analysis of clinical and monitoring data. The resulting repeatable and objective results give clinical teams a common and shared model to understand and better communicate risk, helping them anticipate and respond before a crisis develops. Just as instrumentation has greatly reduced medication errors and improved adherence to chronic care clinical pathways, these computerized tools can help in obstetrics, where the ramifications of medical errors are exceptional.



*Dr. Hugh Mighty  
Associate Professor  
Department of Obstetrics and Gynecology  
University of Maryland Health Center  
Head, Department of OB/GYN  
University of Maryland  
Baltimore, Maryland.*



CALM Patterns software applies advanced mathematical techniques to identify the fetal heart rate features that clinicians use to assess fetal tolerance to labor. CALM Patterns also displays the level of risk associated with a fetal heart rate tracing, based on rule-based practice guidelines established by obstetrical professionals. Objective evaluation of fetal heart rate tracings can be difficult, particularly when fatigued, inexperienced or overworked clinicians must deal with unpredictable and heavy caseloads.

CALM Patterns has recently received clearance from FDA and Health Canada. It will be made available within a suite of risk management tools that classify the risk of injury due to slow labor progress, fetal distress and other prominent birthing challenges.

Another application to be added to the risk management product suite relates to shoulder dystocia, which refers to excessive difficulty in delivering a baby because the shoulders are trapped within the birth canal. Once the condition becomes evident during birth, the clinician may attempt one or more maneuvers that may injure the nerves leading to the baby's arm. Injuries associated with severe shoulder dystocia can include nerve damage and clavicular fracture or may result in permanent weakness or paralysis of the arm. Failure to anticipate and respond to shoulder dystocia ranks as a leading cause of obstetrical litigation.



*Marcia Patterson, RNC, MS  
Unit Director, Obstetrics  
Rush University Medical Center  
Chicago, Illinois*

“Rush University Medical Center, through an extensive survey, has established goals to find a standard method for assessing labor progress that provides real-time data, considers a patient’s individual variables, provides clear and objective data, and is relevant to the patient population seen at Rush. The CALM Labor Curve provides Rush an opportunity to meet this goal and we are very pleased to partner with LMS in this endeavor.”

**Linda Koehl, RNC, APN/CNS, MS  
Education/Quality Coordinator  
Departments of Nursing Systems and Women and Children  
Rush University Medical Center  
Chicago, Illinois**

The CALM Labor Curve is a proprietary product that quantifies labor progression and makes interpretation easier by distinguishing labor which is abnormally slow from labor in which progression is within expected limits, considering an individual mother's own particular labor parameters. The Curve also shows trends over time, helping clinicians more correctly anticipate next steps.

Cesarean sections are among the top surgical interventions in the US today. In 2003, close to 27% of all babies were born by cesarean, with rates as high as 50% in some institutions, and there is no reason to believe that the upward trend will slow. The leading reason for the procedure is a medical judgment that labor is progressing too slowly. There is wide variation in how clinicians assess labor progression. Delays or failure to recognize abnormally prolonged labor can be compounded by fetal distress, requiring an emergency delivery. At the other end of the spectrum, uncertainty may result in excessive use of intervention despite there being little evidence that such interventions bring sufficient added benefit to justify the extra costs and complication rates. The unwarranted use of cesarean sections is thought to add over a billion dollars in costs to the US healthcare system annually.



*Cheryl Stone, RN, BSN  
Clinical Nurse Coordinator, L & D  
Rush University Medical Center*



*Linda Koehl, RNC, APN/CNS, MS  
Education/Quality Coordinator  
Rush University Medical Center*



*Matthew B. Rice, Aon Risk Services*

“Today, the healthcare industry faces an unprecedented combination of challenges: staff shortages, demand for higher quality, tightening financial constraints, stiffer regulation, increasing liability exposure and difficult insurance markets all arriving at once.”

**Matthew B. Rice, Aon Risk Services**

A quick glance at the state of insurance coverage in obstetrics will indicate that this area of healthcare is ripe for improvement. It is so well known that medical professionals face record high premiums for malpractice insurance that the issue formed part of the 2004 televised presidential campaign debates. At the hospital level one only needs to consult the balance sheet of those publicly traded HMOs to find that insurance is hard to come by, creating the need to segregate funds against contingent insurance liabilities and / or to self-insure.

A key focus has become how to reduce the risk through the use of tools that can help improve outcomes. Hospital and insurance industry stakeholders at both the primary and reinsurance level have a direct interest in reducing litigation rates.

The CALM product suite directly addresses ways and means of reducing the risk, thereby providing a satisfactory outcome for patients, medical professionals and the insurance industry.

# Corporate Directory and Information

## Board of Directors

Élaine Beaudoin, CA  
André Bérard  
Diane Côté  
Terrance H. Gregg  
Harry G. Hohn  
Benoit La Salle, CA - Chairman

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## Scientific Advisory Board

Dr. André Lalonde  
Dr. Michele Lauria  
Dr. James Low  
Dr. Helen MacNamara  
Dr. Michelle Murray  
Dr. John Spencer

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BCE Place, Suite 2500  
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Toronto, Ontario  
Canada M5J 2T7

## Risk & Patient Safety Advisory Board

Harry G. Hohn - Chairman  
Dr. Thomas J. Garite  
Dr. Eric Knox  
Dr. Marilyn Sue Bogner

Stock Lists - Symbol "LMZ":  
American Stock Exchange  
Toronto Stock Exchange

Banker:  
Banque Nationale du Canada  
600 De La Gauchetière Street West  
Main Floor, Montreal, Quebec  
Canada H3B 4L2

## Management

Bruno Bendavid  
*Technical Operations*

Tim Betts  
*Product Development*

Diane Côté  
*President & CEO*

Yves Grou, CA  
*Chief Financial Officer*

Emily Hamilton, MDCM FRCS(C)  
*Medical Research*

Pamela Haswell  
*Regulatory Affairs*

Dennis McClinton  
*Sales*

JD Miller  
*Corporate Development*

Matson Sewell  
*Risk Management & Patient Safety*

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## Annual Meeting

Shareholders are invited to attend the Company's Annual Meeting at 2:00 p.m. (E.S.T) on September 14, 2005 at the Queen Elizabeth Hotel, 900 Rene-Levesque West, Montreal, Quebec Canada H3B 4A5.

*Statements contained in this Annual Report, including those pertaining to scientific and clinical research, commercialization plans, distribution channels, strategic alliances and intellectual property protection, other than statements of historical fact, are forward-looking statements subject to a number of uncertainties that could cause actual results to differ materially from statements made. These include risks associated with the success of the research and development programs, the regulatory approval process, competition, and financing capability.*



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