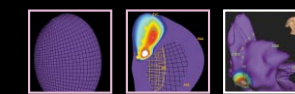


Advanced Diagnostic Solutions

2001 ANNUAL REPORT

Simplifying Arrhythmia Mapping

Endocardial Solutions develops, manufactures and markets innovative diagnostic technology that is rapidly changing the way patients are treated for cardiac arrhythmias. The EnSite 3000® System allows physicians to record cardiac signals from an entire heart chamber simultaneously. The recorded data is displayed as an accurate 3D map of the heart with an animated display of cardiac electrical activity. Because more data can be collected in a shorter period of time than through conventional mapping, both complex and simple procedures are easier to perform.



ESI's technology has undergone rapid changes since its early clinical testing. (Inset left, circa. 1996) shows simple ovoid-shaped heart maps created with our early software. More detailed maps of the heart were created in the first clinical release of the EnSite 3000® System software (Inset center, circa. 1998). In 2001, our Precision™ software was released, combining highly accurate anatomic maps with full-chamber electrical data (Inset right and above).



**ENDOCARDIAL
SOLUTIONS**

WORLD HEADQUARTERS

Endocardial Solutions, Inc.
1350 Energy Lane, Suite 110
Saint Paul, MN 55108-5254
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EUROPE

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**ENDOCARDIAL
SOLUTIONS**

LETTER TO SHAREHOLDERS

MOVING FORWARD 2001 was a remarkable year for our company. We achieved record growth for several quarters and for the year end, initiated a significant new clinical trial, achieved our year-long goal of placing 200 total systems worldwide, and launched a very successful software upgrade to the EnSite 3000® System. As 2002 begins, we see even greater potential for Endocardial Solutions.

STRONG FINANCIALS Throughout the year we consistently reported record-breaking quarters in all areas of our business, indicating that we are achieving widespread acceptance in the medical community as an alternative to conventional diagnosis of arrhythmias. Our 2001 revenue of \$22.9 million was a 57% increase over the previous year. We are also seeing increases in the use of our catheter in existing accounts. Our manufacturing efficiencies also continue to help us on the bottom line, where our gross margin of 59.6% increased over the year 2000 by nearly 20%.

PRODUCT IMPROVEMENTS Late in 2001, we announced the release of our Precision™ software upgrade—our most significant product improvement to date. The Precision™ software allows physicians to create 3D maps of the heart that nearly replicate each patient's unique anatomy. The software also accurately guides therapeutic catheters in 3D, which should dramatically reduce the amount of x-ray fluoroscopy necessary for ablation procedures. We have been very pleased with the overwhelming reception to this upgrade.

GLOBAL EXPANSION In September we began building our direct effort in Europe. With our core team in place, our customers are enjoying the same level of service that we provide in the U.S. Early in 2001, we reached a distribution agreement with Nihon Kohden to expand into the Japanese market. Nihon Kohden has a significant share of the Japanese market for electrophysiology devices and catheters. We also continue to grow in other areas of the Asia Pacific region, with many new systems sold in China, Taiwan, Korea, Malaysia, and New Zealand.

NEW CLINICAL TRIAL In 2001, we also began the first studies in our Left Atrial Mapping Protocol (LAMP) to study the efficacy of the EnSite 3000® System for mapping and guiding therapy in the left atrium of the heart. We are encouraged by the early results of this trial. Our technology provides unique advantages for the treatment of atrial fibrillation, one of the most common types of arrhythmias and also one of the most challenging to treat. We fully expect that the results of LAMP will allow us to help physicians treat and cure some of the more than 2.2 million patients who have been diagnosed with atrial fibrillation.

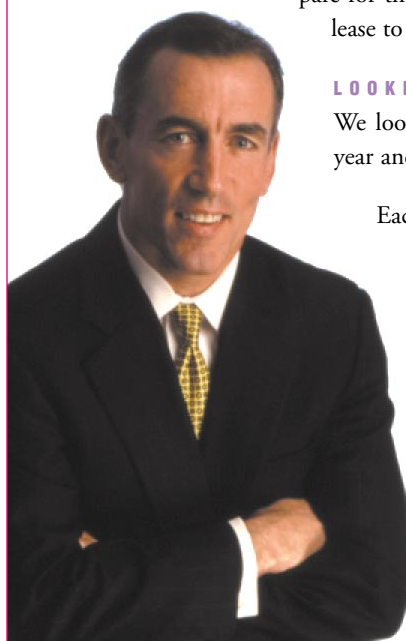
NEW GROWTH As 2002 begins, we are the leader in advanced mapping of arrhythmias, and we are turning our resources and technology to achieve similar success in the market for conventional mapping. To achieve this end, we sold \$10 million in stock early in 2002 to allow us to fund several key research and development projects. We are also exploring ways to incorporate advanced digital images into the EnSite 3000® System, which will permit even more accurate diagnosis. As the demand for our current product increases, we continue to prepare for the future. In 2001, we secured a \$3.5 million lease financing; we will use a portion of that lease to expand our catheter manufacturing capacity to meet our growing demand.

LOOKING AHEAD We expect 2002 to be even more eventful and productive than the past year. We look forward with great anticipation to achieving our first profitable quarter in the current year and to the next exciting generation of products.

Each day, I look forward to the case reports from our field engineers, who relate how physicians use our technology to either treat more patients or cure the impossible cases—patients with multiple failed ablations or very rapid arrhythmias. To play even a small part in the daily miracles that physicians like Dr. Gregory Buser perform (story on following page) is a reward that sustains me and all the employees at Endocardial Solutions.



James W. Bullock
President, Chief Executive Officer and Director

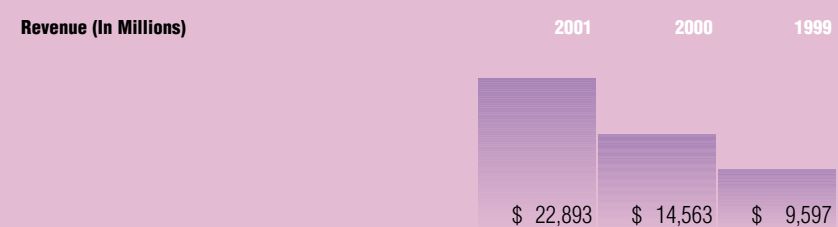


FINANCIAL HIGHLIGHTS

In thousands, except per share amounts

As of December 31,	2001	2000	1999
Statements of Operations			
Net Sales	\$ 22,893	\$ 14,563	\$ 9,597
Net Income (Loss)	\$ (8,479)	\$ (10,311)	\$ (11,729)
Net Income (Loss Per Share)-Basic and Diluted	\$ (0.60)	\$ (0.92)	\$ (1.23)
Weighted Average Shares Outstanding	14,211,318	11,212,420	9,559,494

As of December 31,	2001	2000	1999
Balance Sheet			
Cash and Cash Equivalents	\$ 4,550	\$ 10,759	\$ 7,087
Total Assets	\$ 15,797	\$ 21,356	\$ 17,578
Total Liabilities	\$ 7,081	\$ 11,492	\$ 9,324
Stockholder's Equity	\$ 8,716	\$ 9,864	\$ 8,254



Year	2001	2000	1999
Net Income (Loss Per Share)			
	\$ (.60)	\$ (.92)	\$ (1.23)



RESULTS OF OPERATIONS 2001

EXECUTIVE OFFICERS

James W. Bullock
President,
Chief Executive Officer
and Director

Graydon E. Beatty
Chief Technical Officer
and Director

Frank J. Callaghan
Vice President,
Research and Development

Michael D. Dale
Vice President,
Sales and Marketing

Richard J. Omilanowicz
Vice President,
Manufacturing and Operations

BOARD OF DIRECTORS

James W. Bullock
President and
Chief Executive Officer
Endocardial Solutions, Inc.

Graydon E. Beatty
Chief Technical Officer
Endocardial Solutions, Inc.

James E. Daverman
Managing General Partner
Marquette Venture Partners

Robert G. Hauser, M.D.
Cardiologist
Minneapolis Heart Institute

Richard D. Randall
President and Chief
Executive Officer
Incumed, Inc.

Mark T. Wagner
Chief Executive Officer
cMore Medical

Warren S. Watson
Vice President of Arrhythmia
Business Operations
Medtronic Cardiac Rhythm
Management

TRANSFER AGENT
AND REGISTRAR

Wells Fargo Bank
Minnesota, N.A.
South Saint Paul, MN
800-689-8788

AUDITORS

Ernst & Young LLP
Minneapolis, MN

LEGAL COUNSEL

Dorsey & Whitney LLP
Minneapolis, MN

ANNUAL MEETING

The Company's Annual Meeting of Stockholders will be held on May 14, 2002 at 9:00 A.M. at:

Hilton Minneapolis & Towers
1001 Marquette Avenue
Minneapolis, MN 55403

FORM 10-K

A copy of the Company's Form 10-K filed with the Securities and Exchange Commission is available free of charge by calling Investor Relations at the number below.

CORPORATE HEADQUARTERS

1350 Energy Lane, Suite 110
Saint Paul, MN 55108-5254

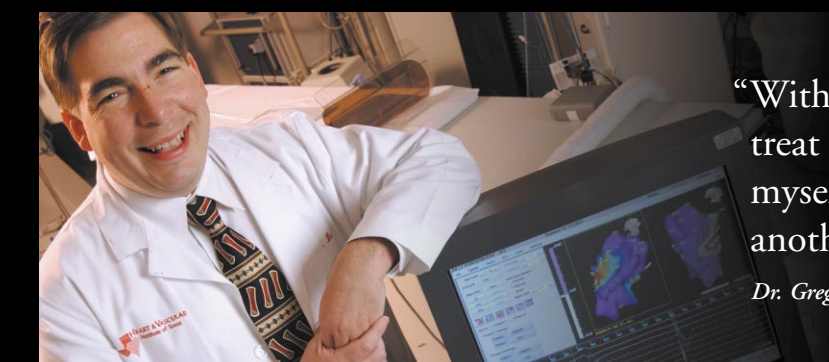
Telephone: 651-523-6900
Facsimile: 651-644-7897

INVESTOR INQUIRIES

Telephone: 651-523-6917
e-mail: investor@endocardial.com

LISTING

Trades on Nasdaq Stock Market® under the symbol "ECST"



"With the EnSite System, I am able to treat patients with complex arrhythmias myself rather than sending them to another facility for treatment."

Dr. Gregory Buser, Northeast Baptist Hospital

MILESTONE 200™ ENSITE 3000® SYSTEM

In October 2001, Endocardial Solutions achieved a milestone by placing the 200th worldwide EnSite 3000® System at Northeast Baptist Hospital in San Antonio, Texas. Dr. Gregory Buser, an electrophysiologist at Northeast Baptist, was instrumental in acquiring the first EnSite® System in the San Antonio area, after viewing cases and ultimately referring several patients to a center 80 miles away that offered the technology.