

Varian Medical Systems (VMS) is the world's leading manufacturer of integrated radiotherapy systems for treating cancer and a leading supplier of X-ray tubes for imaging in medical, scientific, and industrial applications. The company employs approximately 2,300 people at manufacturing sites in North America and Europe and in 40 sales and support offices worldwide.



^{*}Pro forma net earnings assume a 35 percent tax rate and exclude incremental expenses and gains on sales of assets related to the spin-offs of the Company's instruments and semiconductor equipment businesses on April 2, 1999.

Risk Factors Relating to Forward-Looking Information

Except for historical information, this summary annual report contains "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995 which provides a "safe harbor" for these types of statements. For this purpose, statements concerning industry outlook, including market acceptance of or transition to new products or technology such as IMRT, brachytherapy, software, treatment techniques, and advanced X-ray products, growth drivers; Varian Medical Systems, Inc.'s (the "Company" or "VMS") orders, sales, backlog or earnings growth; future financial results and any statements using the terms "anticipates," "believes," "expects," "appears," "should," "will," "point to" or similar statements are forward-looking statements that involve risks and uncertainties that could cause the Company's actual results to differ materially from those projected or management's current expectations. Such risks and uncertainties include, without limitation, market acceptance, demand for and possible obsolescence of VMS's products; the Company's ability to successfully develop and commercialize new products; the impact on VMS's sales and margins of competitive products and pricing; the effect of general economic conditions and foreign currency exchange rates; the Company's ability to increase operating margins on higher sales while controlling costs; the Company's ability to maintain manufacturing capacity to meet demand, including the potential risk of earthquake damage to its existing facilities; the effect of environmental claims and clean-up expenses on VMS's costs; the Company's ability to protect its intellectual property and the related competitive advantages of VMS's products; the Company's reliance on sole source or a limited number of suppliers; the impact of managed care initiatives or other healthcare reforms in the U.S. on capital expenditures and/or limitations on third party reimbursements and the resulting pressure on medical equipment pricing and user demand for VMSs products; the Companys ability to meet U.S. FDA and other domestic or foreign regulatory requirements or product clearances which might limit the products VMS can sell or subject it to fines or other regulatory actions; the use of distributors for a portion of the Company's sales, the loss of which could reduce sales and harm the Company's financial results, as could continued consolidation in the X-ray tube market; the possibility that material product liability claims could harm future sales, or require payment of uninsured claims; the availability and adequacy of VMS's insurance to cover future material liabilities, including any material product liability or product recall of General Electric manufactured products for which the Company provides customer service and has assumed such liabilities; the ability of the Company to attract and retain key employees in a highly competitive employment market; the effect fluctuations in VMS's operating results may have on the price of its common stock; the possibility that certain provisions of VMS's Certificate of Incorporation and its stockholder rights plan might discourage a takeover and therefore limit the price of the Company's common stock; the Company's ability to meet time requirements for and implement conversion to the Euro currency in its business dealings and operations in certain European countries; the effect of price transparency in countries of the European Community following implementation of Euro currency regulations; the effect on profit margins of product recycling and related regulatory requirements in European and other countries; the Company's potential responsibility for additional tax obligations and other liabilities arising out of the spin-off of segments of its former businesses; the effect on VMS's revenue recognition of changes in accounting standards; and other risks detailed from time to time in the Company's filings with the Securities and Exchange Commission. The Company assumes and undertakes no obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

BUSINESS OVERVIEW

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Oncology Systems

| (Dollars in Millions) | 2000 | | 1999 | 1998 |
|---|-----------|----|-------|-----------|
| Net Orders | \$ 597 | \$ | 504 | \$ 414 |
| Sales | \$ 534 | \$ | 459 | \$ 405 |
| Pretax Earnings—as Reported | \$ 93 | \$ | 70 | \$ 60 |
| Pretax Earnings—Pro Forma | n/a | \$ | 71 | \$ 60 |
| Pretax Earnings as % of Sales— as Reported Pretax Earnings as % of Sales— | 17.5% | | 15.2% | 14.8% |
| Pro Forma | n/a | ŧ | 15.5% | 14.8% |
| Backlog | \$ 424 | \$ | 361 | \$ 316 |
| Capital Expenditures | \$ 8 | \$ | 10 | \$ 7 |
| Depreciation & Amortization | \$ 9 | \$ | 9 | \$ 8 |
| | | | | |

FY99 pro forma pretax earnings exclude reorganization and non-recurring expenses related to the spin-off of the Company's instruments and semiconductor equipment businesses, on April 2, 1999.



Varian Oncology Systems is the world's leading supplier of radiotherapy systems for treating cancer. Its integrated medical systems include linear accelerators and accessories. and a broad range of interconnected software tools for planning and delivering the most sophisticated radiation treatments available to cancer patients. Thousands of patients all over the world are treated daily on Varian systems, Oncology Systems works closely with health care professionals in community clinics. hospitals, and universities to improve cancer outcomes. The business unit also supplies linear accelerators for industrial inspection applications.

SERVICES

DUCTS

- Oncology systems: Clinac® medical linear accelerators
- Millennium™ MI C multileaf collimators
- Exact[™] treatment couches
- Ximatron® treatment simulators
- CadPlan PLUS™/ Helios™ treatment planning software
- Vision[™] radiotherapy image management systems
- PortalVision[™] imaging
- VARiS® clinical/data management software
- · Varian customer service and product support

Industrial inspection:

Linatron® linear accelerators

Oncology Systems again set records for annual net orders, sales, and operating earnings. It launched the Silhouette™ Edition Clinac featuring a new compact, patientfriendly design for previously inaccessible small treatment rooms. It developed the Helios 6.2 inverse treatment planning software for IMRT and began volume shipments of new solid-state PortalVision imagers for treatment verification. The first installations of the fully integrated systems using Varian's Generation™ 6 architecture were completed and leading clinics began working with Varian's new Respiratory Gating System for improving treatment pre cision. Varian formed an alliance with GE Medical Systems, offering interfaced imaging equipment and See and Treat Cancer Care to North American radiation oncologists. Oncology Systems also shipped the first new Linatron M for industrial inspection.

HIGHLIGHTS

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A record backlog and continuing growth in net orders point to the potential of another year of strong growth for Oncology Systems. Growth should be driven by demand for IMRT-ready systems, particularly in North America, Western Europe, and Japan. Initiatives to upgrade and modernize cancer care for underserved populations should lead to growth in international markets. Product initiatives will focus on integrating systems to simplify complex treatments.

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Baden, Switzerland Buc. France Chicago, Illinois Crawley, England Espoo, Finland Milpitas, California Palo Alto, California (headquarters) Tokyo, Japan Zug, Switzerland



X-Ray Products

| (Dollars in Millions) | 2000 | 1999 | 1998 |
|---|-----------|-----------|-----------|
| Net Orders | \$ 147 | \$ 123 | \$ 128 |
| Sales | \$ 136 | \$ 123 | \$ 131 |
| Pretax Earnings—as Reported | \$ 18 | \$ 11 | \$ 20 |
| Pretax Earnings—Pro Forma | n/a | \$ 17 | \$ 20 |
| Pretax Earnings as % of Sales— as Reported Pretax Earnings as % of Sales— | 13.1% | 8.6% | 15.2% |
| Pro Forma | n/a | 13.9% | 15.2% |
| Backlog | \$ 40 | \$ 29 | \$ 30 |
| Capital Expenditures | \$ 6 | \$ 8 | \$ 6 |
| Depreciation & Amortization | \$ 7 | \$ 9 | \$ 7 |

FY99 pro forma pretax earnings exclude reorganization and non-recurring expenses related to the spin-off of the Company's instruments and semiconduc tor equipment businesses, on April 2, 1999, and restructuring expense related to the closure of the Arlington Heights X-ray tube facility.



Varian X-Ray Products is the world's premier independent supplier of X-ray tubes, serving manufacturers of radiology equipment and industrial inspection equipment as well as distributors of replacement tubes. This business provides the industry's broadest selection of X-ray tubes expressly designed for the most advanced diagnostic applications, including CT scanning, radiography, and mammography. These products meet evolving requirements for improved resolution, faster patient throughput, longer tube life, smaller dimensions, and greater cost efficiency. X-Ray Products also supplies a new line of amorphous silicon flat-panel X-ray detectors for medical and industrial applications.

X-ray tubes for:

- CT scanners · Radiographic and
- fluoroscopic imaging · Mammography
- · Angiography
- · Scientific instrumentation

PaxScan[™] amorphous silicon flat panel X-ray detectors for:

- · Industrial inspection
- · Medical diagnostic subsystems

X-Ray Products achieved double-digit growth in annual sales and orders. It tripled the operating life and manufacturing volume for its innovative 0.5 second CT scanner tube — the world's most powerful tube for high-speed, high-resolution CT scanning. Product development teams completed a unique integral housing design for compact, lightweight, oil-free tubes, putting a mammography unit into pre-production and prototyping a second unit for CT scanning. The business expanded its flat panel imaging line with larger, more sensitive receptors for medical applications. Consolidation of Arlington Heights manufacturing in Salt Lake City led to

an improved cost structure in our glass

tube products business.

Growth for the X-Ray Products business will be focused in the market for high-end CT scanning tubes, as manufacturers continue to demand higher X-ray tube capability for their next generation of fast CT scanners. Additional growth should come from an emerging business in filmless, flat panel imaging systems for industrial and medical applications. X-Ray Products will continue to expand its product line with new tube designs.

Charleston, South Carolina Salt Lake City, Utah (headquarters)



Ginzton Technology Center

| (Dollars in Millions) | | 2000 | 1999 | | 1998 | |
|-----------------------------|----|------|-----------|----|------|--|
| Net Orders | \$ | 18 | \$ 12 | \$ | 5 | |
| Sales | \$ | 20 | \$ 8 | \$ | 5 | |
| Pretax Losses—as Reported | \$ | (5) | \$ (8) | \$ | (9) | |
| Backlog | \$ | 8 | \$ 10 | \$ | 6 | |
| Capital Expenditures | \$ | 1 | \$ 3 | \$ | 1 | |
| Depreciation & Amortization | ş | 2 | \$ 1 | ş | 1 | |



The Ginzton Technology Center acts as Varian Medical Systems' research and development facility for breakthrough technologies and operates a growing brachytherapy business for the delivery of internal radiation to treat cancer and cardiovascular disease. In addition to brachytherapy, current efforts are focused on next-generation imaging systems and advanced targeting technologies for radiotherapy. The center is also investigating the combination of radiotherapy with other treatment modalities, such as bioengineered gene delivery systems.

Brachytherapy products:

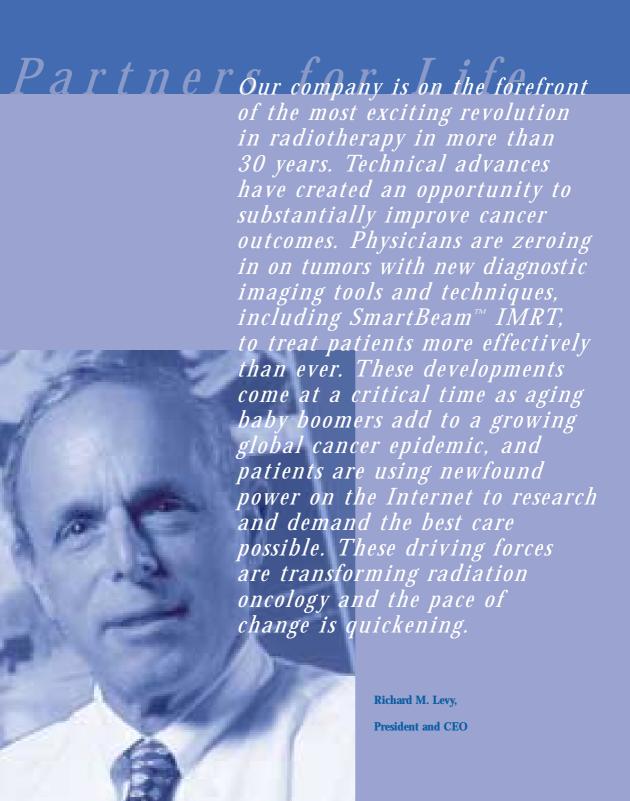
- VariSource[™] high-dose rate brachytherapy delivery
- VariSeed[™] treatment planning software
- BrachyVision[™] treatment planning software

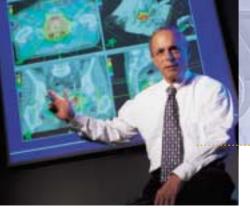
The Ginzton Technology Center increased sales of brachytherapy products by more than 200 percent over fiscal year 1999 totals. Two new products — the VariSource 200 Afterloader for high-dose rate brachytherapy and the BrachyVision 6.0 software - contributed to the higher sales. Production capacity for the VariSource product line tripled. Production commenced on a new longer-lasting and more flexible source wire for high-dose rate brachytherapy. The business formed an alliance with Cordis, a Johnson and Johnson Company, to supply and service radiation sources for cardiovascular brachytherapy.

The global market for brachytherapy products should continue to grow, partly with the help of new cardiovascular applications and the desire for less invasive therapeutic options. Ginzton Technology Center will compete in this market with a broad line of devices and software, including some new products that should be introduced during the year. Research will remain focused on advancing targeting technology for radiotherapy as well as the use of biotechnology to enhance outcomes with radiotherapy.

Charlottesville, Virginia Crawley, England Mountain View. California (headquarters)







To our shareholders

Fiscal 2000 was an outstanding year for Varian Medical Systems by almost every measure. We reported:

- A 28% increase in annual earnings per diluted share to \$1.64 over pro forma earnings per diluted share of \$1.28 for fiscal 1999
- A 17% or \$100 million increase in annual sales from fiscal 1999 levels to \$690 million
- A 19% increase in annual net orders to \$762 million
- An 18% increase in our year-ending backlog to a record \$473 million

All three of our businesses—Oncology Systems. X-Ray Products, and the Ginzton Technology Center—grew annual sales in double-digit percentages. We improved our gross margin; controlled our selling, general, and administrative expenses as a percentage of sales; increased our operating earnings; and boosted EBITDA (earnings before interest, taxes, depreciation, and amortization). Sales per employee rose significantly. On the balance sheet we eliminated virtually all short-term debt, substantially improved our cash position, and raised stockholders' equity in the company.

Our company is on the forefront of the most exciting revolution in radiotherapy that I have seen in more than 30 years of working in this industry. Major technical advances in diagnostic imaging and radiotherapy systems now enable physicians to see and treat tumors more effectively. Clinicians around the globe are developing and using new techniques, including multi-modality diagnostic imaging, IMRT (intensity modulated radiation therapy), respiratory gating, and brachytherapy, to substantially improve cancer outcomes. They are protecting healthy tissue while zeroing in with laser-like precision on tumors that heretofore would have been deemed untreatable. They are using this improved accuracy to safely deliver higher doses that they would never have considered prescribing until now.

As World Health Organization statistics show, cancer is a growing epidemic fueled in part by the aging of the baby boomer generation. The need for new and better treatments is more urgent than ever.

Medical Centers in all regions of the world are modernizing and expanding their radiotherapy systems to take advantage of the new digital technology and to address underserved populations. Adding impetus to this change are patients who have begun using the power of the Internet to research and demand the best care possible. These driving forces are transforming radiation oncology, and the pace of change is quickening.

Partners for Life

The need is clear for rapid development and deployment of better medical treatments for cancer. heart disease, and other illnesses. Helping to address this are physicians, physicists, therapists, researchers, patients, clinical administrators, financiers, governments, engineers, and suppliers like us -Partners for Life.

In these pages we describe people who are partnering with Varian and using our most advanced technology to treat prostate, breast, head and neck, brain, lung, pancreas, and other types of cancer. You will also learn about advances in our X-ray imaging technology, including our flat panel X-ray detectors for filmless imaging and our advanced CT scanner tube for faster, high-resolution CT scanning.

The Next Step for IMRT

After 10 years of intense development and collaboration with the clinical community, Varian has developed a reliable system for IMRT. We now have the world's only fully integrated system of hardware and software needed to make this promising technique a reality around the world. Clinical studies now show IMRT's great potential to dramatically improve outcomes with simultaneous increases in tumor control rates and reductions in complications.

Our challenge now is to move IMRT from leading universities into the clinical mainstream as a new treatment standard with consistent processes that are easy to implement. We have concentrated on developing user-friendly software for all aspects of patient treatment and clinical management. This includes a recent new release of our Helios inverse treatment-planning tool that should ease clinical transition to IMRT protocols. We are focusing on customer training programs, including very popular seminars for practitioners interested in learning

more about IMRT. More than 2500 clinicians have attended Varian IMRT presentations given by clinical peers in North America, Europe, and Asia.

We are simplifying system purchases by arranging financing for customers. This program, begun early in fiscal 2000, is off to a fast start with a long list of customers who have taken advantage of the help. Working with industry peers and customers, we are also supporting and enhancing already favorable IMRT reimbursement codes that make it possible to recover a system investment in just 18 to 36 months.

Continued integration of all aspects of cancer care will make implementation easier. During fiscal 2000 we formed an alliance with GE Medical Systems to sell its imaging equipment to radiation oncology departments in North America. This made it possible to offer our customers end-to-end solutions from diagnosis through treatment. The response has been excellent. GE Medical Systems imaging equipment is already a significant presence in the radiation oncology market. Through this alliance we have ushered in an era of See and Treat Cancer Care. Clinics can pinpoint cancerous tumors with GE diagnostic equipment and treat them using our SmartBeam IMRT system. We highlighted this in our virtual clinic at the recent annual meeting of the American Society of Therapeutic Radiology and Oncology (ASTRO) in Boston.

Our ASTRO exhibit also featured a completely redesigned medical linear accelerator. The Silhouette Edition Clinac enables customers to fit the most advanced radiotherapy systems into small treatment rooms now occupied by aging cobalt systems. Developed with considerable input from clinics, it is our most patient-friendly unit, with optional photographic murals, a stereo sound system, and toys for pediatric treatment centers.

The company is engaged in a patient-focused educational campaign. It concentrates on building awareness of IMRT with media relations, advertising, and a newly designed website that is attracting more than 1 million hits each month. We are committed to additional patient support through alliances with advocacy groups that are working for the prevention, detection, and treatment of cancer. The company also annually commits funds toward projects advancing radiotherapy technology with partners, including hospitals and universities with research capabilities.

New Alliances

Varian remains committed to advancing cancer care with a broad array of health care information products and new alliances. The company is also

embarking on new applications for radiotherapy. including the treatment of cardiovascular disease through an alliance with Cordis, a Johnson and Johnson Company. Cordis will market one of only two brachytherapy systems approved by the U.S. Food and Drug Administration for preventing restenosis in clogged arteries following balloon angioplasty procedures. Varian will supply and service radiation components for the system.

Partnerships also are playing a role in the growth of our X-Ray Products business. Varian engineers constantly work with diagnostic imaging equipment manufacturers to develop tubes for faster CT scanners. This has led to the commercialization of a new anode-grounded design used in our newest tube, the most powerful tube on the market for high-resolution, high-speed CT scanning. In the last year, our engineering team has tripled both tube life and manufacturing volume on this new product.

Formula for Success

The company has the resources in its Ginzton Technology Center to fund research in new breakthrough projects with high growth potential. In fiscal 2000, Varian's new amorphous-silicon-based digital X-ray detectors were successfully shifted from the Ginzton Center to the X-Ray Products business for commercialization. The Ginzton Center also developed the respiratory gating system that was among the newer products featured by Oncology Systems at ASTRO. This product could be a major breakthrough for more effective treatment of lung cancer. The Ginzton team is continuing to commercialize our brachytherapy business—another promising growth story for the company.

Our people are a big part of the Varian Medical Systems story. We owe our success to committed and energetic employees who make our partnerships work. They share a desire to help others while earning a good living and building a profitable business. We hope that our investors, customers, suppliers, and others who see this report share in a feeling of pride at being among the Partners for Life. Together, we have had a very good fiscal 2000 and we are looking forward to an even better fiscal 2001.

Richard M. Levy, President and CEO December 8, 2000

ZION.I

Half of all patients diagnosed with cancer today in North America receive radiotherapy at some stage. During the next 20 years, global cancer incidence will double* to 20 million new cancer patients annually. And cancer will, unfortunately, become the leading cause of death

There is a growing need for more radiotherapy instrumentation—particularly linear accelerators, the superior technology as recognized by the World Health Organization. Varian Medical Systems has dedicated itself to bringing this technology to academic centers, community hospitals, and underserved regions everywhere.

*Porter, A, et al, A Global Strategy for Radiotherapy: A WHC Consultation. Clinical Oncology 11 (1999):368-370. When William Reinka discovered he had prostate cancer at age 78, his local urologist suggested that he wait and see how the disease would progress. "But I didn't want to sit around and wait for the cancer to grow," Mr. Reinka says. So he turned to the Internet, helped by his daughter, who has a Ph.D. in public health.

He found that improved diagnostic techniques over the past 25 years had shown the disease to be far more common than previously thought. He also learned that prostate cancer patients now have several treatment options, often used in combination: surgical prostate removal, radiation therapy, brachytherapy, hormonal therapy, and even watchful waiting.

"I read about IMRT, a new method with minimal side effects, and I discovered that Varian

had an excellent instrument," says Mr. Reinka. He also discovered Dr. Bradley Kramer, Medical Director of Radiation Oncology at the Midwestern Regional Medical Center in nearby Zion, Illinois. Midwestern is one of the first community clinics to provide SmartBeam IMRT. Until recently, this advanced therapy has only been found in university or large, urban hospitals.

Dr. Kramer agreed with Mr. Reinka's treatment choice. He offered Mr. Reinka a regimen of external beam radiation using a combination of SmartBeam IMRT and brachytherapy, in which radiation is delivered internally through catheters. Compared to standard external beam radiation treatment, SmartBeam IMRT causes less damage to the surrounding tissue, hopefully decreasing the risk of impotence and injury to the adjacent bladder,

rectum, and intestine.

"IMRT may allow physicians to re-treat a patient with radiation using a more focused treatment, whereas this may not have been possible with standard conformal radiation therapy," says Dr. Kramer. He projects an expansive future for IMRT in prostate and other cancer therapy and praises Varian Medical Systems as his partner in therapy. "IMRT is probably the best way currently to deliver conformal photon irradiation, targeting the tumor more precisely."

As for Mr. Reinka, 30 days after IMRT treatment his PSA result had dropped to near zero, down from a high of 7.1 six months earlier. And just recently, he turned 80.

"We wanted the best radiation therapy center in our region, and we were looking for such a system to install in a community hospital."

Dr. Bradley Kramer, Midwestern Regional Medical Center, Zion. Illinois

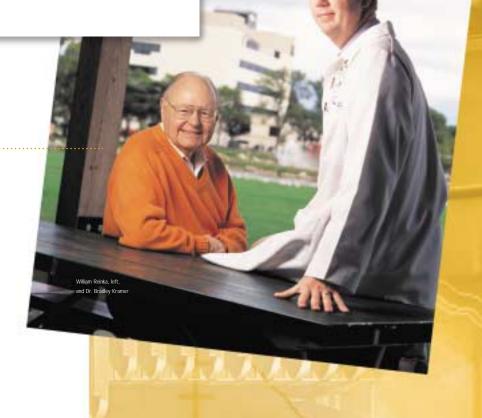




Partners for Life



VariSource, Varian's high dose rate brachytherapy system, delivers a controlled dose of radiation directly to the cancer site with computer precision. William Reinka's therapy included brachytherapy and IMRT.



ATLANTA

On April 26, 1999, Nancy Worthen the U.S. women-more than

About 44,000 of these women die from breast cancer each vear. a role.

After being diagnosed, Mrs. were closely following her progress.

Nancy Worthen, breast cancer survivor, feels very lucky to have received IMRT. When informed of her treatment options, however, she admits being apprehensive about the effects of radiation. With conventional radiation therapy, great care must be taken to avoid skin effects similar to sunburn, such as redness, blistering, itchiness, weepy sores, or peeling. Mrs. Worthen says that she had not known about the IMRT alternative. "Fortunately, my surgeon knew of Dr. Rad's work using IMRT to treat breast cancer at Emory University," she says.

"Dr. Rad" is Mrs. Worthen's nickname for Jerome Landry, M.D., Associate Professor of Radiation Oncology and head of the clinical IMRT program at Emory University in Atlanta, Georgia. He is an expert in the use of Varian's SmartBeam IMRT systems.

IMRT uses computer-generated images to plan and deliver more focused radiation to tumors than is currently possible with conventional cobalt or whole beam radiation. Physicians can draw and paint a precise radiation dose to the shape of the tumor while significantly reducing the harmful side effects of radiation on surrounding healthy tissue. IMRT also allows physicians to apply a more uniform radiation dose to the breast tumor, a challenge because of the varying tissue density and thickness in the breast itself.

"IMRT permits doctors to conserve the breast and provide a better cosmetic outcome," Dr. Landry says. "With 30 to 40 percent of all breast cancer patients undergoing a course of radiation therapy during the course of their

disease, this technology fosters a safer method to

Worthen's healthcare team, agrees with Dr. Landry. He has seen the inclusion of IMRT into new treatment protocols for breast, prostate, pancreatic, and head and neck cancers over the past few years.

"IMRT treats the cancer with significantly fewer radiation side effects than with conventional radiotherapy," says Dr. Ting. "I believe it will move into the mainstream of medicine quickly and will be adopted rapidly not only by university medical centers, but also by community hospitals as a standard of care to reach more patients."



Partners for Life



Varian's CadPlan PLUS/Helios software is an inverse treatment-planning tool that enables clinics to develop optimized plans for delivering IMRT to patients like Nancy Worthen. It enables physicians to target precise doses at cancerous tumors while protecting surrounding healthy tissues. Patient anatomies and treatment areas are shown using 3D images



' I believe IMRT will

move into the mainstream

HONG

River in Southern China near Canton as a central occurrence site of nasopharyngeal cancer (NPC). There, the median age of patients with this Differences among healthcare difficult-to-treat cancer is ten years younger than patients throughout most of the world. In Hong Kong, the nasopharyngeal cancer incidence is approximately 24 per 100,000, ranking NPC fifth after lung, liver, colon, and breast cancers. "Physicians in Hong Kong treat about 1000

Cancer demographers have identified the Pearl

new patients with nasopharyngeal cancer each year," says Dr. Peter Choi of the Prince of Wales Hospital in Hong Kong. "Our standard treatment has been radiotherapy, but we have to be very careful not to the Tan Kim Ching Cancer Center cause damage to the brainstem, upper spine, optic nerve, or parotid gland. This is particularly important with the parotid gland, where high doses with conventional radiotherapy could cause dry

mouth or permanent loss of saliva-unfortunate side effects that greatly diminish a patient's

Recently, Dr. Choi started treating patients at Prince of Wales Hospital with a newly installed SmartBeam IMRT system that concentrates higher doses of radiation to the tumor while avoiding surrounding healthy tissue.

According to Dr. K.Y. Cheung, Senior Physicist and Head of Medical Physics in the Department of Clinical Oncology at Prince of Wales Hospital, the Varian IMRT system is practical and user-friendly. "Planning IMRT treatments using the Helios inverse planning module is relatively easy and fast compared to three-dimensional conformal radiotherapy planning," says Dr. Cheung. "We can achieve much better dose distributions in IMRT treatments, and we have found the initial clinical

results in the first few NPC patients treated with the technique to be very encouraging."

One of these initial patients was Mrs. Chan King Ho, a 43-year-old wife and mother of four children. Mrs. Chan feels very fortunate to be one of the first of Dr. Choi's patients to receive this new type of radiation therapy. A six-and-a-half week treatment course of IMRT directed at the undifferentiated nasopharyngeal cancer achieved complete local and regional remission for Mrs. Chan.

champion and remains very pleased with the results of therapy," notes Dr. Choi. "I have great hopes and expectations for IMRT in these types of cancers, in view of its dosimetric advantage to highly irregular tumors that wrap around vital organs in the head and neck area."

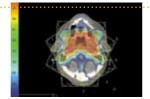
"We have found the initial clinical results in the first few NPC patients treated with the technique to be very encouraging."

> Dr. K.Y. Cheung, Senior Physicist, Head of Medical Physics. Prince of Wales Hospital, Hong Kong





Partners for Life



Chan King Ho's doctors used Helios Inverse Planning software to minimize the dose to her parotid glands, brainstem, upper spinal cord, and optic nerve. Helios works in conjunction with Varian's MLC-120 collimator to achieve unrivaled precision in cancer treatment





Cancer survivor Joan Harris chronicled her recovery in "My Story," a booklet that has raised substantial contributions for the Kenton Ward for terminally ill children at St. Bartholomew's Hospital in London

According to Mrs. Harris, the experience has resulted in permanently changing her outlook on life and people. "I no longer worry over trivial things, because I have found that with just a little patience and faith, little problems always seem to solve themselves in the end."

*From "My Story" by Joan Harris

"You have to trust your cancer team," says

Joan Harris, who fought and won her battle
against cancer – first in her breast and then later
in her head, requiring radiation treatment of brain
and lung tumors. "I was very, very fortunate to
have established an excellent personal relationship
with everyone at the cancer treatment center at
St. Bartholomew's Hospital. When you are ill with
cancer, you put your hope in these people."

Head and neck cancers represent 20% of all cancers diagnosed today. Tumors can be located close to the spinal cord, optic nerves, and the brain and may be very difficult to treat. Radiation delivered outside the target area risks damaging these critical structures or other surrounding tissues.

One of the first cancer treatment centers in England to incorporate Varian's SmartBeam IMRT system is St. Bartholomew's Hospital. According to Dr. Christopher Nutting, Clinical Oncologist there, the most effective treatments available to head and neck cancer patients are surgery and radiotherapy, sometimes combined with chemotherapy.

"IMRT can afford a significant reduction in radiation dose to the parotid gland and the spinal cord, or allow a higher, more effective radiation dose to be delivered to the tumor," Dr. Nutting says. "If these higher doses can be delivered more safely, we can expect both increased survival and reduced side effects for groups of cancer patients. The Varian IMRT system integrates treatment planning with the Helios radiotherapy inverse planning program and dynamic MLC delivery."

With the placement of IMRT systems at St. Bartholomew's and other hospitals, the United

Kingdom is among the nations leading Europe in improving radiation cancer therapy. Following the World Health Organization's guidelines for radiotherapy, the U.K. Department of the Treasury has announced the purchase of 45 linear accelerators for cancer care. In addition, the New Opportunities Fund, for projects not directly funded by the government, will sponsor another

These linear accelerators will upgrade cancer care in more than 60 treatment centers in England. Many other European centers including Amsterdam, Holland; Bern, Switzerland; and Leuven, Belgium are also modernizing systems for state-of-the-art cancer care.

56 new linear accelerators in the U.K.

"Using IMRT, we aim to give higher doses of radiation more safely, which should lead to increased survival and reduced side effects."

> Dr. Christopher Nutting, Clinical Oncologist, St. Bartholomew's Hospital, London Fredand

H.E.A.D. A.N.D. N.E.C.K. C.A.N.C.E.R



Partners for Life



Varian's RPM™ Respiratory Gating System adds a new level of precision to radiation therapies.

It controls dose delivery to compensate for tumor motion caused by breathing. This has potential in treatment of tumors in lungs and other areas affected by respiratory motion.



SANTIAGO

Latin American private healthcare institutions have launched a focused effort to install state-of-the-art radiation treatment systems. Like Chile's Catholic University, the Albert Einstein Hospital in São Paulo, Brazil has upgraded its capabilities with a Varian SmartBeam IMRT system. The National Cancer Institute of Brazil in Rio de Janeiro has improved its

Other Latin American cities with general hospitals upgrading their radiotherapy expertise include Bogota Colombia; Outio and Cuenca, Ecuador; and Montevideo, Uruguay. Recently, five public hospitals in Mexico have added new radiotherapy departments using Varian systems and some have also selected Varian's varisource brachytherapy system. The National Cancer Institute in Mexico City has added two linear accelerators.

"We want to be on the frontier of treating patients with cancer."

An earnest man, Dr. Pelayo Besa makes this statement a promise as much as a desire. Dr. Besa is Chief of Radiation Oncology at Pontifica Universidad Católica de Chile (Catholic University). He and his colleagues are partnering with Varian Medical Systems to form a Center of Excellence for radiotherapy in Santiago. "We want to offer state-of-the-art high quality medical care," he explains.

Chilean cancer demographics closely resemble those of the United States, except for a higher percentage of gastric cancers. Until recently, cobalt radiation instruments served as the primary source for radiotherapy in Chile's public hospitals. Now that linear accelerators have received the

World Health Organization's blessing as more effective in providing cancer therapy, Latin America's public hospitals have joined their private healthcare counterparts in setting up these units.

"Many doctors are beginning to realize that the latest advances in technology can help them to achieve the best results," says Dr. Besa, who received his training and practiced radiology at the M.D. Anderson Cancer Center in Houston, Texas.

Catholic University trains more than one hundred Latin American medical doctors and many physicists, dosimetrists, and technologists each year. Its Centro de Cáncer Nuestra Señora de la Esperanza, located in the medical school, has nearly four years of experience in using up-to-date conformal radiotherapy, having averaged more than 50 patients per day with this type of therapy.

"Chile's doctors want the best treatment for their patients. IMRT is part of the best treatment for cancer patients."

> Dr. Pelayo Besa, Chief of Radiotherapy, Catholic University, Santiago, Chile

Dr. Besa says IMRT is an important advance in cancer treatment. "With this technique, we can focus the dose of radiation, increase it if needed, decrease the dose of radiation to the surrounding important organs and achieve better outcomes for our rationt."

With its expertise in conformal therapy,

Catholic University will soon provide training for

physicians and medical researchers from various

The Centro de Cáncer is planning to expand its

radiology department and to add a new multileaf

collimator-equipped linear accelerator, including

the software and ancillary equipment for

SmartBeam IMRT.

Spanish-speaking countries, including Spain.

C.E.N.J.E.R. Q.F. .E.X.G.E.L.L.E.N.G.E.



Partners for Life



VARIS software is at the core of Varian's fully integrated system for radiotherapy. It uses a relational database to control treatment equipment, manage patient information, and link clinical and business processes. It gives clinicians ready access to information needed for treatment decisions.



CHARLESTON.SC

In the 1990s, researchers at digital replacement for X-ray film in diagnostic imaging. The final flat panel systems capable of both are now being used in diverse

Very premature babies desperately need oxygen, nourishment, and other life support.

The trick is precisely placing tubes and support lines into the tiny lungs and blood vessels of patients no bigger than your hand.

In most hospitals, X-ray films are taken to verify placement. But taking and developing film is a cumbersome, time-consuming process, especially when the radiology department is located several floors away from the neonatal intensive care unit (NNICU). In late 1999. Varian's X-Ray Products business installed a PaxScan 2520 amorphous silicon (a-Si) flat panel image receptor in the Pediatric Radiology Department at the Medical University of South Carolina (MUSC). The panel system is being tested for potential utility in radiological evaluation of premature infants.

"We are treating infants who are critically ill in the neonatal ICU," says Dr. Jeanne Hill, Director of Pediatric Radiology at MUSC and principal investigator in the clinical study. "The parents are overwhelmed and terrified. They don't know if their baby will live or die. Anything we can do to speed up accurate diagnosis and treatment is welcome." Preliminary results show that images obtained with the panel compare diagnostically to conventional X-ray film and therefore enable the ICU team to save a

"Nurses sometimes must sit still for as long as an hour, holding a line in a premature infant with a collapsed lung or other condition requiring immediate treatment, while they wait for X-ray results to come back from radiology,"

significant amount of time during the first

critical hours of a newborn's life.

says Dr. William Michael Southgate, Director of the NNICU Department at MUSC and collaborator in the study. Varian's receptor is placed directly under the infant. A portable X-ray unit is used to make an exposure. The images are displayed instantly on a monitor. In this way, doctors can adjust support lines

Dr. Hill says the flat panel system needs only one-third the radiation required by X-ray film. "These preemies have dozens of X-rays in the first years of their lives. We must remain concerned about cumulative radiation dose. and the a-Si flat panel technology relieves this concern.

"The benefits of the Varian PaxScan flat panel technology are clear cut. We can see the great benefit to these newborns in the ICU's day-to-day activities."

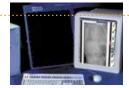
> Dr. William Michael (Mike) Southgate, Director, Neonatal Intensive Care Unit, Medical University of South Carolina, Charleston



N E O N A T A L C A R E



Partners for Life



Varian's PaxScan amorphous silicon image receptors could take the place of medical X-ray film, providing instant diagnostic images, reducing patients' exposure to radiation, and eliminating the need for film processing and storage

A company of firsts

CLINAC MEDICAL LINEAR ACCELERATOR Since commercializing the first standing wave medical linear accelerator, Varian has been at the forefront of advances in radiotherapy systems. Varian medical linear accelerators theorems technical innovations that make them the most reliable and versatile in the world. Today, more than 3,000 Varian systems are in service around the world, treating an estimated 1,000,000 cancer patients each year.

FINANCIAL REVIEW

Since its inception over 50 years ago, Varian has been known as a **company of firsts** – the first klystron microwave power source, the first standing wave medical linear accelerator, the first Vaclon pump, and much more. This success has been made possible through Varian's unique ability to attract some of the world's finest talent and to foster an atmosphere of innovation and creativity. Varian's focus on innovation is evidenced by the 188 patents the company holds worldwide. Another 146 patents are currently pending. Today, Varian is still a company of firsts, with a portfolio of cancer therapy hardware and software that is making a major difference in thousands of lives.

120 LEAF MULTILEAF COLLIMATOR Varian's 120 MultiLeaf Collimator, the only one of its kind in clinical use, allows the highest resolution treatment ever. With this sophisticated beam-shaping device clinics can deliver discrete doses to areas as small as 2 mm x 5 mm, and conform treatments to tumors of any size or shape.

INTEGRAL HOUSING TUBE
Varian has introduced patented
innovations into high performance
X-ray tube technology, substituting
tungsten for lead in the housing
and using air rather than oil to
cool the tube. These advances
make Varian's Integral Housing
Tube less costly, safer, more
durable, easier to use, lighter,
smaller, quieter, and friendlier
to the environment.

ADVANCED CT SCANNER TUBE
Varian developed the most powerful
tube on the market for highresolution, high-speed CT scanning.
It is capable of completing a scan in
just half a second to generate high
quality diagnostic images.

SYSTEM INTEGRATION
Generation 6 is the world's first
and only fully-integrated system from
a single supplier for managing all
aspects of external beam
radiotherapy. The Gen 6 software
architecture ties together treatment
planning, treatment delivery and
simulation, information management,
verification for quality assurance, and
department administration.

RESPIRATORY CATING
The Respiratory Gating System
adds a new level of precision to
radiation therapy. The first commercially
available system of its kind, it makes
cancer radiotherapy more accurate
and effective by adjusting beam delivery
for tumor movements caused by
breathing. The Varian system "gates"
or turns on the radiation beam only
when a targeted tumor is within a
prescribed area.

a-Si FLAT PANEL IMAGING The amorphous silicon flat panel image detection unit acquires both fluoroscopic and radiographic images on the same receptor and displays them digitally, eliminating the need for X-ray film. This technology is at the center of Varian's portal imaging product, which enables clinicians to instantly evaluate IMRT treatments and ensure that radiation beams are targeted correctly. It is also being used in other medical applications and for inspection in industrial settings.

The intent of this summary Annual Report is to provide useful information on Varian Medical Systems, Inc. in a format that is both concise and cost-effective. It is not intended as a substitute for the Company's quarterly and annual filings with the Securities and Exchange Commission. The Company's complete audited financial statements are included in the Company's fiscal year 2000 Annual Report on Form 10-K.

| Consolidated Statements of Earnings | 18 |
|--|----|
| Consolidated Balance Sheets | 19 |
| Consolidated Statements of Cash Flows | 20 |

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Fiscal Years

| (Amounts in thousands, except per share amounts) | 2000 | | 1999 | | 1998 |
|---|------------|----|----------|----|---------|
| Sales | \$ 689,700 | \$ | 590,440 | \$ | 541,461 |
| Operating costs and expenses | | | | | |
| Cost of sales | 432,603 | | 380,435 | | 346,298 |
| Research and development | 42,083 | | 39,895 | | 39,255 |
| Selling, general and administrative | 125,107 | | 116,131 | | 117,528 |
| Reorganization | 227 | | 29,668 | | _ |
| Acquisition-related expenses | 1,977 | _ | | _ | |
| Total operating costs and expenses | 601,977 | _ | 566,129 | _ | 503,081 |
| Operating earnings | 87,703 | | 24,311 | | 38,380 |
| Interest expense | (5,161) | | (9,980) | | (8,835) |
| Interest income | 2,333 | _ | 3,908 | _ | 6,418 |
| Earnings from continuing operations before taxes | 84,875 | | 18,239 | | 35,963 |
| Taxes on earnings | 31,826 | _ | 10,021 | _ | 9,819 |
| Earnings from continuing operations | 53,049 | | 8,218 | | 26,144 |
| Earnings (loss) from discontinued operations—net of taxes | | _ | (32,456) | _ | 47,696 |
| Net earnings (loss) | \$ 53,049 | s | (24,238) | \$ | 73,840 |
| Average shares outstanding—basic | 31,104 | _ | 30,219 | _ | 29,910 |
| Average shares outstanding—diluted | 32,432 | | 30,527 | _ | 30,419 |
| Net earnings (loss) per share—basic | | | | | |
| Continuing operations | \$ 1.71 | s | 0.27 | \$ | 0.87 |
| Discontinued operations | _ | | (1.07) | | 1.60 |
| Net earnings (loss) per share—basic | \$ 1.71 | \$ | (0.80) | \$ | 2.47 |
| Net earnings (loss) per share—diluted | | | | | |
| Continuing operations | \$ 1.64 | \$ | 0.27 | \$ | 0.86 |
| Discontinued operations | _ | | (1.06) | | 1.57 |
| Net earnings (loss) per share—diluted | \$ 1.64 | \$ | (0.79) | \$ | 2.43 |
| | | | | | |

On April 2, 1999, the Company spun off its instruments and semiconductor equipment businesses to its common stockholders. The operations of these businesses are reflected as discontinued operations for the fiscal year 1999 and fiscal 1998 periods presented. In association with the spin-offs, the Company also recorded significant reorganization charges in fiscal year 1999.

Fiscal Year-End

| (Dollars in thousands, except par values) | September 29, 2000 | October 1, 1999 |
|--|--|---|
| Assets | | |
| Current assets Cash and cash equivalents Accounts receivable, net Inventories Other current assets | \$ 83,321 226,442 92,482 48,343 | \$ 25,126 233,788 78,324 45,011 |
| Total current assets Property, plant and equipment Accumulated depreciation and amortization | 450,588 206,614 (126,515) | 382,246 200,386 (120,138 |
| Net property, plant and equipment Other assets | 80,099 71,863 | 80,248 76,689 |
| Total assets | \$ 602,550 | \$ 539,183 |
| Liabilities and stockholders' equity | | |
| Current liabilities Notes payable Accounts payable—trade Accrued expenses Product warranty Advance payments from customers Total current liabilities | \$ 616 41,351 128,391 19,975 59,563 249,896 | \$ 35,587 40,141 121,166 18,152 54,757 269,802 |
| Long-term accrued expenses Long-term debt Total liabilities | 23,795 58,500 332,191 | 25,890 58,500 354,192 |
| Commitments and contingencies Stockholders' equity Preferred stock Authorized 1,000,000 shares, par value \$1, issued and outstanding none Common stock Authorized 99,000,000 shares, par value \$1, issued and outstanding 31,769,000 shares at September 29, 2000, and | _ | _ |
| 30,563,000 shares at October 1, 1999 | 31,769 | 30,563 |
| Capital in excess of par value Retained earnings | 50,869 187,721 | 20,185 134,243 |
| Total stockholders' equity | 270,395 | 184,99 |
| Total liabilities and stockholders' equity | \$ 602,550 | \$ 539,183 |

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| (Dollars in thousands) | 2000 | 1999 | 1998 |
|--|-------------|-----------------------|------------|
| Operating activities | | | |
| Net cash provided/(used) by operating activities | \$ 83,839 | \$ (33,557) | \$ 127,753 |
| The easi provided (ased) by operating activities | 00,000 | ♥ (00,001) | 0 127,700 |
| Investing activities | | | |
| Proceeds from sale of property, plant and equipment | 1,786 | 54,260 | 2,321 |
| Purchase of property, plant and equipment | (19,234) | (39,402) | (46,954) |
| Purchase of businesses, net of cash acquired | _ | (5,849) | (105,470) |
| Other, net | (4,124) | 3,851 | 7,035 |
| Net cash (used)/provided by investing activities | (21,572) | 12,860 | (143,068) |
| Financing activities | | | |
| Net (repayments)/borrowings on short-term obligations | (34,971) | 11,253 | 27,624 |
| Proceeds from long-term borrowings | (5 1,5 1 2) | _ | 38,000 |
| Principal payments on long-term debt | _ | (12,138) | (96) |
| Proceeds from common stock issued to employees | 23,730 | 15,667 | 19,732 |
| Purchase of common stock | 20,700 | | (54,276) |
| Dividends paid | _ | (2,991) | (14,348) |
| Cash distributed in spin-off of businesses | _ | (119,273) | (14,540) |
| Other, net | | 2,792 | 2.692 |
| Net cash (used)/provided by financing activities | (11,241) | (104,690) | 19,328 |
| ivet cash (used)/provided by infancing activities | (11,241) | (104,090) | 19,326 |
| Effects of exchange rate changes on cash | 7,169 | 846_ | 3,356 |
| Net increase (decrease) in cash and cash equivalents | 58,195 | (124,541) | 7,369 |
| Cash and cash equivalents at beginning of fiscal year | 25,126 | 149,667 | 142,298 |
| Cash and cash equivalents at end of fiscal year | \$ 83,321 | \$ 25,126 | \$ 149,667 |
| Detail of net cash provided/(used) by operating activities | | | |
| Net earnings/(loss) | \$ 53,049 | \$ (24,238) | \$ 73,840 |
| Adjustments to reconcile net earnings/(loss) to net cash | , , , , , , | , , , , , , | |
| provided/(used) by operating activities: | | | |
| Depreciation | 17,794 | 30,879 | 42,663 |
| Allowances for doubtful accounts | 1,142 | 2,704 | 3,020 |
| Loss/(gain) from sale of assets | 73 | (30,565) | 62 |
| Amortization of intangibles | 4.162 | 6,519 | 4.993 |
| Deferred taxes | (1,062) | (20,850) | (5,166) |
| Non-cash stock-based compensation | 190 | (20,000) | (0,100) |
| Changes in assets and liabilities: | 130 | | |
| Accounts receivable | (8,802) | (32,600) | 30,770 |
| Inventories | (14,158) | 3,295 | (18,098) |
| | 1,811 | (14,098) | (2,458) |
| Other current assets Accounts payable—trade | 3,121 | (14,098) | (2,458) |
| 1 2 | 12,192 | · · | |
| Accrued expenses | - | 23,097 | (3,671) |
| Product warranty | 2,000 | (2,961) | 2,061 |
| Advance payments from customers | 5,938 | 13,319 | 186 |
| Long-term accrued expenses | (2,095) | | 9,019 |
| Tax benefits from employee stock option plan | 7,970 | 5,338 | 5,321 |
| Other | 514 | 3,102 | 1,939 |
| Net cash provided/(used) by operating activities | \$ 83,839 | \$ (33,557) | \$ 127,753 |
| | | | |

Officers

Richard M. Levy, Ph.D. President and Chief Executive Officer

Elisha W. Finney Vice President, Finance Chief Financial Officer and Treasurer

John C. Ford, Ph.D. Vice President, President, International Marketing Operations

Timothy E. Guertin Vice President, President, Oncology Systems

Robert H. Kluge Vice President, President, X-Ray Products

Keith E. Krugman Vice President, Oncology Systems Customer Support

Joseph B. Phair Vice President, Administration, General Counsel and Secretary

Crisanto C. Raimundo Corporate Controller

George A. Zdasiuk, Ph.D. Vice President, Ginzton Technology Center

Roard of Directors

Richard W. Vieser Chairman of the Board, Varian Medical Systems, Inc. Chairman, CEO, and President (Retired), Lear Siegler, Inc.

John Seely Brown, Ph.D. Chief Scientist and Vice President, Xerox Corporation

Samuel Hellman, M.D. A.N. Pritzker Distinguished Service Professor, Department of Radiation and Cellular Oncology, University of Chicago

Terry R. Lautenbach Senior Vice President (Retired), International Business Machines Corporation

Richard M. Levy, Ph.D. President and Chief Executive Officer, Varian Medical Systems, Inc.

David W. Martin, Jr., M.D. President and Chief Executive Officer, EOS Biotechnology, Inc.

Burton Richter, Ph.D.
Paul Pigott Professor in
Physical Sciences,
Stanford University;
Director Emeritus, Stanford
Linear Accelerator Center

World Headquarters

Varian Medical Systems, Inc. 3100 Hansen Way Palo Alto, CA 94304-1038 650.493.4000

Stockholder Relations

Copies of Varian's Annual Report on Form 10-K report filed with the Securities and Exchange Commission and other current financial information are available without charge by contacting Stockholder Relations: Varian Medical Systems, Inc. 3100 Hansen Way, M/S E-210 Palo Alto, CA 94304-1038 650.424.5855

To obtain information over the Internet, type www.varian.com at the URL prompt.

Listings

Varian's common stock is listed on the New York and Pacific Stock Exchanges. The symbol is VAR.

Transfer Agent and Registrar

First Chicago Trust Company of New York P.O. Box 2500 Jersey City, NJ 07303 1.800.756.8200

Stockholders' Meeting

The annual meeting of stockholders will be held February 8, 2001, at 1:00 p.m., at Little America Hotel & Towers, 500 So. Main Street, Salt Lake City, Utah

Stockholders of Record

There were 4,488 stockholders of record of the Company's common stock on 11/27/00.

