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MEDICINES CO/ MA
Form 424B2
June 21, 2002

Filed Pursuant to Rule 424(b) (2)
Registration No. 333-86762

PROSPECTUS SUPPLEMENT
(TO PROSPECTUS DATED MAY 1, 2002)

4,000,000 SHARES

[THE MEDICINES COMPANY LOGO]

COMMON STOCK

We are offering 4,000,000 shares of common stock. Our common stock is traded on the Nasdaq National Market under the symbol "MDCO." On June 19, 2002, the last reported sale price of our common stock was \$9.86 per share.

INVESTING IN OUR COMMON STOCK INVOLVES RISKS. SEE "RISK FACTORS" BEGINNING ON PAGE S-5 OF THIS PROSPECTUS SUPPLEMENT TO READ ABOUT RISKS THAT YOU SHOULD CONSIDER BEFORE BUYING SHARES OF OUR COMMON STOCK.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS SUPPLEMENT OR THE ACCOMPANYING PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

	PER SHARE	TOTAL
	-----	-----
Public offering price.....	\$8.20	\$32,800,000
Underwriting discounts and commissions.....	\$0.41	\$ 1,640,000
Proceeds, before expenses, to us.....	\$7.79	\$31,160,000

The underwriter expects to deliver the shares against payment in New York, New York, on or about June 25, 2002.

BEAR, STEARNS & CO. INC.

The date of this Prospectus Supplement is June 20, 2002

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PROSPECTUS

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You should read this prospectus supplement along with the accompanying prospectus carefully before you invest. Both documents contain important information you should consider when making your investment decision. This prospectus supplement contains information about the common stock offered in this offering and may add, update or change information in the prospectus.

You should rely on information contained in this prospectus supplement, the accompanying prospectus and the documents we incorporate by reference in the accompanying prospectus. We have not authorized anyone to provide you with information that is different. We are offering to sell and seeking offers to buy shares of common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus supplement and the accompanying prospectus is accurate only as of their respective dates, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or of any sale of our common stock.

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THE MEDICINES COMPANY

We operate as a pharmaceutical company selling and developing products for the treatment of hospital patients. We acquire, develop and commercialize biopharmaceutical products that are in late stages of development or have been approved for marketing. We began selling Angiomax, our lead product, in U.S. hospitals in January 2001 as an anticoagulant replacement for heparin. We sold \$14.2 million of Angiomax in 2001. In December 2000, we received marketing approval from the United States Food and Drug Administration, or FDA, for Angiomax for use as an anticoagulant in combination with aspirin in patients with unstable angina undergoing coronary balloon angioplasty. Coronary balloon angioplasty is a procedure that is used to restore normal blood flow in an obstructed artery in the heart. In the first quarter of 2002, we acquired rights from AstraZeneca AB to clevidipine, an intravenous compound for the short term control of high blood pressure, for which Phase 3 clinical trials are planned.

ANGIOMAX

We believe Angiomax will be a replacement for heparin, an anticoagulant used in almost all angioplasty procedures performed in the United States, used in most major cardiac and vascular surgical procedures in the United States and administered to a majority of patients treated in hospitals in the United States for acute coronary syndromes, including heart attack. As of March 15, 2002, clinical investigators had administered Angiomax to approximately 14,000 patients in clinical trials for the treatment and prevention of blood clots in a

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wide range of hospital applications. In clinical trials in angioplasty, use of Angiomax, compared to heparin, has resulted in fewer life-threatening coronary events and fewer bleeding events, including a reduction in the need for blood transfusion. The therapeutic effect of Angiomax is more predictable than heparin, which enables simplified dosing. This benefit is strongest in high-risk patients who have previously experienced a heart attack or unstable angina.

We believe that Angiomax has additional potential applications for the treatment of ischemic heart disease, a condition that occurs when organs receive an inadequate supply of oxygen as a result of decreased blood flow, and for use as a procedural anticoagulant. At present, we:

- are conducting a randomized, double blind Phase 3b/4 trial program in angioplasty comparing Angiomax with the provisional use, at the choice of the physician, of a GP IIb/IIIa inhibitor, which is a platelet inhibitor, to heparin plus a GP IIb/IIIa inhibitor;
- are conducting a Phase 3 trial program studying the use of Angiomax in the treatment of patients undergoing angioplasty who suffer from an immunological reaction to heparin, known as heparin-induced thrombocytopenia and heparin-induced thrombocytopenia and thrombosis syndrome, or HIT/HITTS;
- are conducting a Phase 2 trial program studying the use of Angiomax as an anticoagulant in patients undergoing coronary artery bypass graft surgery, or CABG, without the use of a bypass pump;
- are conducting a Phase 2 trial program in prematurely born babies with active thrombosis;
- plan to commence a Phase 3 trial program to study the use of Angiomax in HIT/HITTS patients undergoing CABG, with and without the use of a bypass pump; and
- plan to commence a randomized Phase 3 trial program to study the use of Angiomax in emergency patients for whom angioplasty is planned and who are at high risk due to a heart attack or unstable angina.

Through the Angiomax Foundation Program we also are supporting investigator-initiated studies of Angiomax in angioplasty patient groups where the clinical and economic limitations of heparin are likely to be most significant.

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CLEVIDIPINE

In March 2002, we entered into a study and exclusive option agreement with AstraZeneca AB relating to the licensing, development and commercialization of clevidipine, an intravenous compound for the short term control of high blood pressure, for which Phase 3 clinical trials are planned. Blood pressure control is frequently important in patients undergoing surgery or other interventional procedures in hospitals. These patients are often treated with multiple medications, which tends to increase the duration of the patient's stay in the intensive care unit. We plan to investigate the potential of clevidipine to simplify and improve the treatment of these patients.

Clevidipine belongs to a well-known class of drugs called calcium channel inhibitors which are used to reduce high blood pressure. Clevidipine acts by selectively relaxing the smooth muscle cells that line small arteries, resulting in widening of the artery opening and reducing the blood pressure within the

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artery. Unlike some other blood pressure reducing agents, including some other calcium channel inhibitors, clevidipine does not appear, based on animal studies, to have effects on muscles of the heart or the veins, has not been associated with quickening of the heart rate, and has been shown to improve the pumping performance of the heart.

Prior to our agreement, AstraZeneca conducted Phase 2 clinical trials of clevidipine. These clinical trials demonstrated that clevidipine acts to reduce blood pressure almost immediately after intravenous infusion. Clevidipine is metabolized rapidly by enzymes in the blood, which results in the drug being cleared from the blood stream in a short period of time. Therefore, the effects of clevidipine are short-lived, and in clinical trials it has been possible to demonstrate reductions in blood pressure that are dose-dependent and that cease rapidly after stopping clevidipine infusions.

We believe that attributes of clevidipine demonstrated in clinical trials to date, namely rapid, titratable onset of effect on blood pressure, simple preparation and administration, arterial selectivity and rapid metabolism and elimination, could potentially benefit patients with high blood pressure undergoing surgical procedures and patients with severely elevated blood pressure that requires rapid reduction.

We expect to commence Phase 3 studies of clevidipine in these clinical situations in 2002. We plan to study clevidipine in patients undergoing CABG. We believe that clevidipine can be sold by our hospital sales force efficiently to hospital customers, including Angiomax customers, when and if clevidipine is approved for sale by the FDA.

COMPANY INFORMATION

We were incorporated as a Delaware corporation in July 1996. Our principal executive offices are located at Five Sylvan Way, Suite 200, Parsippany, New Jersey 07054. Our telephone number is (973) 656-1616. We own or have rights to various trademarks and tradenames used in our business, including The Medicines Company name and logo and Angiomax(R).

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THE OFFERING

Common stock offered.....	4,000,000 shares
Common stock to be outstanding after this offering.....	39,025,958 shares
Use of Proceeds.....	We will use the net proceeds from the sale of the common stock offered hereby for working capital and other general corporate purposes, including funding additional clinical trials for Angiomax and clevidipine and other product development activities, further commercialization activities for Angiomax and potential acquisitions of additional product candidates and approved products. See "Use of Proceeds."
Nasdaq National Market symbol.....	MDCO

The number of shares of our common stock to be outstanding after this offering is based on the number of shares of common stock outstanding as of June

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17, 2002 and does not include:

- 4,799,108 shares of common stock issuable upon exercise of stock options outstanding under our stock option plans as of June 17, 2002;
- 2,435,399 shares of common stock available for future grant or issuance pursuant to our stock plans as of June 17, 2002, including an additional 1,750,000 shares of common stock issuable under our 1998 stock incentive plan that were approved for issuance at our annual meeting of stockholders on May 30, 2002; and
- 2,873,688 shares of common stock issuable upon exercise of common stock purchase warrants outstanding as of June 17, 2002.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of our common stock in this offering will be approximately \$31.0 million, after deducting underwriting discounts and commissions and our estimated offering expenses. We will use the net proceeds from the sale of common stock offered in this offering for working capital and other general corporate purposes, including funding:

- additional clinical trials for Angiomax and clevidipine and other product development activities;
- further commercialization activities for Angiomax; and
- potential acquisitions of additional product candidates and approved products.

Pending the application of the net proceeds, we expect to invest the offering proceeds in investment-grade interest-bearing securities.

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RISK FACTORS

If you purchase shares of our common stock, you will take on financial risk. In deciding whether to invest, you should consider carefully the following factors, the information contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference in the accompanying prospectus. Any of the following risks, as well as other risks and uncertainties, could seriously harm our business, financial condition and results of operations and cause the value of our stock to decline, which could cause you to lose all or part of your investment.

RISKS RELATED TO OUR BUSINESS

WE HAVE A HISTORY OF NET LOSSES, AND WE EXPECT TO CONTINUE TO INCUR NET LOSSES AND MAY NOT ACHIEVE OR MAINTAIN PROFITABILITY

We have incurred net losses since our inception, including net losses of approximately \$11.6 million for the three months ended March 31, 2002. As of March 31, 2002, we had an accumulated deficit of approximately \$263.1 million. We expect to make substantial expenditures to develop and commercialize our products further, including costs and expenses associated with clinical trials, regulatory approval and commercialization of products. As a result, we are unsure when we will become profitable, if at all, and if we do become profitable, we may not remain profitable for any substantial period of time. If we fail to achieve profitability within the time frame expected by investors or securities analysts, the market price of our common stock may decline.

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OUR BUSINESS IS VERY DEPENDENT ON THE COMMERCIAL SUCCESS OF ANGIOMAX

Other than Angiomax, our products are in clinical phases of development and, even if approved by the FDA, are a number of years away from entering the market. As a result, Angiomax will account for almost all of our revenues for the foreseeable future. The commercial success of Angiomax will depend upon its acceptance by physicians, patients and other key decision-makers as a safe, therapeutic and cost-effective alternative to heparin and other products used in current practice. If Angiomax is not commercially successful, we will have to find additional sources of revenues or curtail or cease operations.

FAILURE TO RAISE ADDITIONAL FUNDS IN THE FUTURE MAY AFFECT THE DEVELOPMENT, MANUFACTURE AND SALE OF OUR PRODUCTS

Our operations to date have generated substantial and increasing needs for cash. Our negative cash flow from operations is expected to continue into the foreseeable future. The clinical development and regulatory approval of Angiomax for additional indications, the development and regulatory approval of our other product candidates and the acquisition and development of additional product candidates by us will require a commitment of substantial funds. Our future capital requirements depend upon many factors and may be significantly greater than we expect.

As of the date of this prospectus supplement, we believe, based on our current operating plan, plus anticipated sales of Angiomax and interest income, that our current cash, cash equivalents and available for sale securities, together with the proceeds of this offering, will be sufficient to fund our operations for at least 18 months. If our existing resources are insufficient to satisfy our liquidity requirements due to slower than anticipated sales of Angiomax or otherwise, or if we acquire additional product candidates, we may need to sell additional equity or debt securities or seek additional financing through other arrangements. The sale of additional equity or debt securities may result in additional dilution to our stockholders, and we cannot be certain that additional public or private financing will be available in amounts or on terms acceptable to us, if at all. If we are unable to obtain this additional financing, we may be required to delay, reduce the scope of, or eliminate one or more of our planned research, development and commercialization activities, which could harm our financial condition and operating results. In addition, in order to obtain additional financing, we may be required to relinquish rights to products, product candidates or technologies that we would not otherwise relinquish.

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WE CANNOT EXPAND THE INDICATIONS FOR ANGIOMAX UNLESS WE RECEIVE FDA APPROVAL FOR EACH ADDITIONAL INDICATION. FAILURE TO EXPAND THESE INDICATIONS WILL LIMIT THE SIZE OF THE COMMERCIAL MARKET FOR ANGIOMAX

In December 2000, we received approval from the FDA for the use of Angiomax as an anticoagulant in combination with aspirin in patients with unstable angina undergoing coronary balloon angioplasty. One of our key objectives is to expand the indications for which the FDA will approve Angiomax. In order to do this, we will need to conduct additional clinical trials and obtain FDA approval for each proposed indication. If we fail to expand the approved indications for the use of Angiomax, the size of the commercial market for Angiomax will be limited.

FAILURE TO OBTAIN REGULATORY APPROVAL IN FOREIGN JURISDICTIONS WILL PREVENT US FROM MARKETING ANGIOMAX ABROAD

We intend to market our products in international markets, including

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Europe. In order to market our products in the European Union and many other foreign jurisdictions, we or our distribution agents must obtain separate regulatory approvals. In February 1998, we submitted a Marketing Authorization Application, or MAA, to the European Agency for the Evaluations of Medicinal Products, or the EMEA, for use of Angiomax in unstable angina patients undergoing angioplasty. Following extended interaction with European regulatory authorities, the Committee of Proprietary Medicinal Products of the EMEA voted in October 1999 not to recommend Angiomax for approval for use in angioplasty. The United Kingdom and Ireland dissented from this decision. We have withdrawn our application to the EMEA and, as of the date of this prospectus supplement, plan to resubmit an MAA with the results of our clinical trial program in angioplasty, the REPLACE-2 program, if positive. We may not be able to obtain approval from any or all of the jurisdictions in which we seek approval to market Angiomax. Obtaining foreign approvals may require additional trials and additional expense.

THE DEVELOPMENT AND COMMERCIALIZATION OF OUR PRODUCTS MAY BE TERMINATED OR DELAYED, AND THE COSTS OF DEVELOPMENT AND COMMERCIALIZATION MAY INCREASE, IF THIRD PARTIES WHO WE RELY ON TO MANUFACTURE AND SUPPORT THE DEVELOPMENT AND COMMERCIALIZATION OF OUR PRODUCTS DO NOT FULFILL THEIR OBLIGATIONS

Our development and commercialization strategy entails entering into arrangements with corporate and academic collaborators, contract research organizations, distributors, third-party manufacturers, licensors, licensees and others to conduct development work, manage our clinical trials, manufacture our products and market and sell our products outside of the United States. Although we manage these services, we do not have the expertise or the resources to conduct these activities on our own and, as a result, are particularly dependent on third parties in most areas.

We may not be able to maintain our existing arrangements with respect to the commercialization of Angiomax or establish and maintain arrangements to develop and commercialize clevidipine or any additional product candidates or products on terms that are acceptable to us. Any current or future arrangements for the development and commercialization of our products may not be successful. If we are not able to establish or maintain agreements relating to Angiomax, clevidipine or any additional products on terms which we deem favorable, our financial condition would be materially adversely affected.

Third parties may not perform their obligations as expected. The amount and timing of resources that third parties devote to developing, manufacturing and commercializing our products may not be within our control. Furthermore, our interests may differ from those of third parties that manufacture or commercialize our products. Disagreements that may arise with these third parties could delay or lead to the termination of the development or commercialization of our product candidates, or result in litigation or arbitration, which would be time consuming and expensive.

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If any third party that manufactures or supports the development or commercialization of our products breaches or terminates its agreement with us, or fails to conduct its activities in a timely manner, such breach, termination or failure could:

- delay or otherwise adversely impact the development or commercialization of Angiomax, clevidipine, our other product candidates or any additional product candidates that we may acquire or develop;
- require us to undertake unforeseen additional responsibilities or devote unforeseen additional resources to the development or commercialization

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of our products; or

- result in the termination of the development or commercialization of our products.

WE ARE DEPENDENT ON A SINGLE SUPPLIER FOR THE PRODUCTION OF ANGIOMAX BULK DRUG SUBSTANCE AND A DIFFERENT SINGLE SUPPLIER TO CARRY OUT ALL FILL-FINISH ACTIVITIES FOR ANGIOMAX

We have no experience in manufacturing, and we lack the facilities and personnel to manufacture products in accordance with FDA regulations. As of the date of this prospectus supplement, we obtain all of our Angiomax bulk drug substance from one manufacturer, UCB Bioproducts S.A., and rely on another manufacturer, Ben Venue Laboratories, Inc., to carry out all fill-finish activities for Angiomax, which includes final formulation and transfer of the drug into vials where it is then freeze-dried and sealed.

The FDA requires that all manufacturers of pharmaceuticals for sale in or from the United States achieve and maintain compliance with the FDA's current Good Manufacturing Practice, or cGMP, regulations and guidelines. There are a limited number of manufacturers that operate under cGMP regulations capable of manufacturing Angiomax. As of the date of this prospectus supplement, we do not have alternative sources for production of Angiomax bulk drug substance or to carry out fill-finish activities. If either of our current manufacturers is unable to carry out its respective manufacturing obligations to our satisfaction, we may be unable to obtain alternative manufacturing, or obtain such manufacturing on commercially reasonable terms or on a timely basis. If we were required to transfer manufacturing processes to other third party manufacturers, we would be required to satisfy various regulatory requirements, which could cause us to experience significant delays in receiving an adequate supply of Angiomax. Any delays in the manufacturing process may adversely impact our ability to meet commercial demands for Angiomax on a timely basis and supply product for clinical trials of Angiomax.

IF WE DO NOT SUCCEED IN DEVELOPING A SECOND-GENERATION PROCESS FOR THE PRODUCTION OF BULK ANGIOMAX DRUG SUBSTANCE, OUR GROSS MARGINS MAY BE BELOW INDUSTRY AVERAGES

As of the date of this prospectus supplement, we are developing with UCB Bioproducts a second-generation process for the production of bulk Angiomax drug substance. This process, for which we have received an approvable letter from the FDA, involves changes to the early manufacturing steps of our current process in order to improve our gross margins on the future sales of Angiomax. If regulatory approval of the process is not obtained or is delayed, then our ability to improve our gross margins on future sales of Angiomax may be limited.

CLINICAL TRIALS OF OUR PRODUCT CANDIDATES ARE EXPENSIVE AND TIME-CONSUMING, AND THE RESULTS OF THESE TRIALS ARE UNCERTAIN

Before we can obtain regulatory approvals for the commercial sale of any product that we wish to develop, we will be required to complete pre-clinical studies and extensive clinical trials in humans to demonstrate the safety and efficacy of such product. As of the date of this prospectus supplement, we are conducting clinical trials of Angiomax for use in the treatment of ischemic heart disease and for additional potential hospital applications as a procedural anticoagulant. There are numerous factors that could delay our clinical trials or prevent us from completing our trials successfully. We, or the FDA, may suspend a clinical trial at any time on various grounds, including a finding that patients are being exposed to unacceptable health risks.

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The rate of completion of clinical trials depends in part upon the rate of enrollment of patients. Patient enrollment is a function of many factors, including the size of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the trial, the existence of competing clinical trials and the availability of alternative or new treatments. In particular, the patient population targeted by some of our clinical trials may be small. Delays in future planned patient enrollment may result in increased costs and program delays.

In addition, clinical trials, if completed, may not show any potential product to be safe or effective. Results obtained in pre-clinical studies or early clinical trials are not always indicative of results that will be obtained in later clinical trials. Moreover, data obtained from pre-clinical studies and clinical trials may be subject to varying interpretations. As a result, the FDA or other applicable regulatory authorities may not approve a product in a timely fashion, or at all. Even if regulatory approval to market a product is granted, the regulatory approval may impose limitations on the indicated use for which the drug may be marketed.

OUR FAILURE TO ACQUIRE AND DEVELOP ADDITIONAL PRODUCT CANDIDATES OR APPROVED PRODUCTS WILL IMPAIR OUR ABILITY TO GROW

As part of our growth strategy, we intend to acquire and develop additional pharmaceutical product candidates or approved products. The success of this strategy depends upon our ability to identify, select and acquire pharmaceutical products in late-stage development or that have been approved and that meet the criteria we have established. Because we neither have, nor intend to establish, internal scientific research capabilities, we are dependent upon pharmaceutical and biotechnology companies and other researchers to sell or license product candidates to us.

Any product candidate we acquire will require additional research and development efforts prior to commercial sale, including extensive pre-clinical and/or clinical testing and approval by the FDA and corresponding foreign regulatory authorities. All of our product candidates are prone to the risks of failure inherent in pharmaceutical product development, including the possibility that the product candidate will not be safe, non-toxic and effective or approved by regulatory authorities. In addition, we cannot assure you that any approved products that we develop or acquire will be:

- manufactured or produced economically;
- commercialized successfully; or
- widely accepted in the marketplace.

In addition, proposing, negotiating and implementing an economically viable acquisition is a lengthy and complex process. Other companies, including those with substantially greater financial, marketing and sales resources, may compete with us for the acquisition of product candidates and approved products. We may not be able to acquire the rights to additional product candidates and approved products on terms that we find acceptable, or at all.

IF WE BREACH ANY OF THE AGREEMENTS UNDER WHICH WE LICENSE COMMERCIALIZATION RIGHTS TO PRODUCTS OR TECHNOLOGY FROM OTHERS, WE COULD LOSE LICENSE RIGHTS THAT ARE IMPORTANT TO OUR BUSINESS

We license commercialization rights to products and technology that are important to our business, and we expect to enter into additional licenses in the future. For instance, we acquired our first four products through exclusive licensing arrangements. Under these licenses we are subject to commercialization

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and development, sublicensing, royalty, insurance and other obligations. If we fail to comply with any of these requirements, or otherwise breach these license agreements, the licensor may have the right to terminate the license in whole or to terminate the exclusive nature of the license. In addition, upon the termination of the license we may be required to license to the licensor the intellectual property that we developed.

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OUR ABILITY TO MANAGE OUR BUSINESS EFFECTIVELY COULD BE HAMPERED IF WE ARE UNABLE TO ATTRACT AND RETAIN KEY PERSONNEL AND CONSULTANTS

The biopharmaceutical industry has experienced a high rate of turnover of management personnel in recent years. We are highly dependent on our ability to attract and retain qualified personnel for the acquisition, development and commercialization activities we conduct or sponsor. If we lose one or more of the members of our senior management, including our executive chairman, Dr. Clive A. Meanwell, or our chief executive officer, David M. Stack, or other key employees or consultants, our ability to implement successfully our business strategy could be seriously harmed. Our ability to replace these key employees may be difficult and may take an extended period of time because of the limited number of individuals in the biotechnology industry with the breadth of skills and experience required to develop and commercialize products successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate such additional personnel.

WE FACE SUBSTANTIAL COMPETITION, WHICH MAY RESULT IN OTHERS DISCOVERING, DEVELOPING OR COMMERCIALIZING COMPETING PRODUCTS BEFORE OR MORE SUCCESSFULLY THAN WE DO

The biopharmaceutical industry is highly competitive. Our success will depend on our ability to acquire and develop products and apply technology and our ability to establish and maintain a market for our products. Potential competitors in the United States and other countries include major pharmaceutical and chemical companies, specialized biotechnology firms, universities and other research institutions. Many of our competitors have substantially greater research and development capabilities and experience, and greater manufacturing, marketing and financial resources, than we do. Accordingly, our competitors may develop or license products or other novel technologies that are more effective, safer or less costly than existing products or technologies or products or technologies that are being developed by us or may obtain FDA approval for products more rapidly than we are able. Technological development by others may render our products or product candidates noncompetitive. We may not be successful in establishing or maintaining technological competitiveness.

BECAUSE THE MARKET FOR THROMBIN INHIBITORS IS COMPETITIVE, OUR PRODUCT MAY NOT OBTAIN WIDESPREAD USE

We have positioned Angiomax as a replacement for heparin, which is widely used and inexpensive, for use in patients with ischemic heart disease. Because heparin is inexpensive and has been widely used for many years, medical decision-makers may be hesitant to adopt our alternative treatment. In addition, due to the high incidence and severity of cardiovascular diseases, competition in the market for thrombin inhibitors is intense and growing. There are a number of thrombin inhibitors currently on the market, awaiting regulatory approval and in development, including orally administered agents.

THE LIMITED RESOURCES OF THIRD-PARTY PAYERS MAY LIMIT THE USE OF OUR PRODUCTS

In general, anticoagulant drugs may be classified in three groups: drugs

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that directly or indirectly target and inhibit thrombin, drugs that target and inhibit platelets and drugs that break down fibrin. Because each group of anticoagulants acts on different components of the clotting process, we believe that there will be continued clinical work to determine the best combination of drugs for clinical use. We expect Angiomax to be used with aspirin alone or in conjunction with other therapies. Although we are not positioning Angiomax as a direct competitor to platelet inhibitors or fibrinolytic drugs, platelet inhibitors and fibrinolytic drugs may compete with Angiomax for the use of hospital financial resources. Many U.S. hospitals receive a fixed reimbursement amount per procedure for the angioplasties and other treatment therapies they perform. Because this amount is not based on the actual expenses the hospital incurs, U.S. hospitals may have to choose among Angiomax, platelet inhibitors and fibrinolytic drugs.

FLUCTUATIONS IN OUR OPERATING RESULTS COULD AFFECT THE PRICE OF OUR COMMON STOCK

Our operating results may vary from period to period based on the amount and timing of sales of Angiomax, the availability and timely delivery of a sufficient supply of Angiomax, the timing and expenses

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of clinical trials, announcements regarding clinical trial results and product introductions by our competitors, the availability and timing of third-party reimbursement and the timing of approval for our product candidates. If our operating results do not match the expectations of securities analysts and investors as a result of these and other factors, the trading price of our common stock will likely decrease.

WE MAY UNDERTAKE STRATEGIC ACQUISITIONS IN THE FUTURE AND ANY DIFFICULTIES FROM INTEGRATING SUCH ACQUISITIONS COULD DAMAGE OUR ABILITY TO ATTAIN OR MAINTAIN PROFITABILITY

We may acquire additional businesses and products that complement or augment our existing business. Integrating any newly acquired businesses or product could be expensive and time-consuming. We may not be able to integrate any acquired business or product successfully or operate any acquired business profitably. Moreover, we may need to raise additional funds through public or private debt or equity financing to acquire any businesses, which may result in dilution for stockholders and the incurrence of indebtedness.

OUR REVENUES ARE SUBSTANTIALLY DEPENDENT ON A LIMITED NUMBER OF WHOLESALERS TO WHICH WE SELL ANGIOMAX, AND SUCH REVENUES MAY FLUCTUATE FROM QUARTER TO QUARTER BASED ON THE BUYING PATTERNS OF THESE WHOLESALERS

We sell Angiomax primarily to a limited number of national medical and pharmaceutical distributors and wholesalers with distribution centers located throughout the United States. During the three months ended March 31, 2002, revenues from the sale of Angiomax to four wholesalers totaled approximately 97% of our net revenues. Our reliance on this small number of wholesalers could cause our revenues to fluctuate from quarter to quarter based on the buying patterns of these wholesalers. In addition, if any of these wholesalers fail to pay us on a timely basis or at all, our financial position and results of operations could be materially adversely affected.

RISKS RELATED TO OUR INDUSTRY

IF WE DO NOT OBTAIN FDA APPROVALS FOR OUR PRODUCTS OR COMPLY WITH GOVERNMENT REGULATIONS, WE MAY NOT BE ABLE TO MARKET OUR PRODUCTS AND MAY BE SUBJECT TO STRINGENT PENALTIES

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Except for Angiomax, which has been approved for sale in the United States and New Zealand, we do not have another product approved for sale in the United States or any foreign market. We must obtain approval from the FDA in order to sell our product candidates in the United States and from foreign regulatory authorities in order to sell our product candidates in other countries. We must complete our clinical trials successfully and demonstrate manufacturing capability before we can file with the FDA for approval to sell our products. The FDA could require us to repeat clinical trials as part of the regulatory review process. Delays in obtaining or failure to obtain regulatory approvals may:

- delay or prevent the successful commercialization of any of our product candidates;
- diminish our competitive advantage; and
- defer or decrease our receipt of revenues or royalties.

The regulatory review and approval process is lengthy, expensive and uncertain. Extensive pre-clinical data, clinical data and supporting information must be submitted to the FDA for each additional indication to obtain such approvals, and we cannot be certain when we will receive these regulatory approvals, if ever.

In addition to initial regulatory approval, our products and product candidates will be subject to extensive and rigorous ongoing domestic and foreign government regulation. Any approvals, once obtained, may be withdrawn if compliance with regulatory requirements is not maintained or safety problems are identified. Failure to comply with these requirements may also subject us to stringent penalties.

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WE MAY NOT BE ABLE TO OBTAIN OR MAINTAIN PATENT PROTECTION FOR OUR PRODUCTS, AND WE MAY INFRINGE THE PATENT RIGHTS OF OTHERS

The patent positions of pharmaceutical and biotechnology companies like us are generally uncertain and involve complex legal, scientific and factual issues. Our success depends significantly on our ability to:

- obtain U.S. and foreign patents;
- protect trade secrets;
- operate without infringing the proprietary rights of others; and
- prevent others from infringing our proprietary rights.

We may not have any patents issued from any patent applications that we own or license. If patents are granted, the claims allowed may not be sufficiently broad to protect our technology. In addition, issued patents that we own or license may be challenged, invalidated or circumvented. Our patents also may not afford us protection against competitors with similar technology. Because patent applications in the United States and many foreign jurisdictions are typically not published until eighteen months after filing, and because publications of discoveries in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed or maintained patent applications for technology used by us or covered by our pending patent applications without our being aware of these applications.

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We exclusively license U.S. patents and patent applications and corresponding foreign patents and patent applications relating to Angiomax, IS-159 and CTV-05. In all, as of the date of this prospectus supplement, we exclusively license nine issued U.S. patents. The principal U.S. patent that covers Angiomax expires in 2010. The U.S. Patent and Trademark Office has rejected our application for an extension of the term of the patent beyond 2010 because the application was not filed on time. We filed the application in connection with FDA approval of Angiomax. We are exploring an alternative to extend the term of the patent, but we can provide no assurance that we will be successful. We have not yet filed any independent patent applications.

We may not hold proprietary rights to some patents related to our product candidates. In some cases, others may own or control these patents. As a result, we may be required to obtain licenses under third-party patents to market some of our product candidates. If licenses are not available to us on acceptable terms, we will not be able to market these products.

We may become a party to patent litigation or other proceedings regarding intellectual property rights. The cost to us of any patent litigation or other proceeding, even if resolved in our favor, could be substantial. If any patent litigation or other intellectual property proceeding in which we are involved is resolved unfavorably to us, we may be enjoined from manufacturing or selling our products without a license from the other party, and we may be held liable for significant damages. We may not be able to obtain any required license on commercially acceptable terms, or at all.

IF WE ARE NOT ABLE TO KEEP OUR TRADE SECRETS CONFIDENTIAL, OUR TECHNOLOGY AND INFORMATION MAY BE USED BY OTHERS TO COMPETE AGAINST US

We rely significantly upon unpatented proprietary technology, information, processes and know-how. We seek to protect this information by confidentiality agreements with our employees, consultants and other third-party contractors, as well as through other security measures. We may not have adequate remedies for any breach by a party to these confidentiality agreements. In addition, our competitors may learn or independently develop our trade secrets.

WE COULD BE EXPOSED TO SIGNIFICANT LIABILITY CLAIMS IF WE ARE UNABLE TO OBTAIN INSURANCE AT ACCEPTABLE COSTS AND ADEQUATE LEVELS OR OTHERWISE PROTECT OURSELVES AGAINST POTENTIAL PRODUCT LIABILITY CLAIMS

Our business exposes us to potential product liability risks, which are inherent in the testing, manufacturing, marketing and sale of human healthcare products. Product liability claims might be made by patients in clinical trials, consumers, health care providers or pharmaceutical companies or others that

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sell our products. These claims may be made even with respect to those products that are manufactured in licensed and regulated facilities or otherwise possess regulatory approval for commercial sale.

These claims could expose us to significant liabilities that could prevent or interfere with the development or commercialization of our products. Product liability claims could require us to spend significant time and money in litigation or pay significant damages. As of the date of this prospectus supplement, we are covered, with respect to our commercial sales in the United States and New Zealand and our clinical trials, by primary product liability insurance in the amount of \$20.0 million per occurrence and \$20.0 million annually in the aggregate on a claims-made basis. This coverage may not be adequate to cover any product liability claims.

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As we commercialize our products, we may wish to increase our product liability insurance. Product liability coverage is expensive. In the future, we may not be able to maintain or obtain such product liability insurance on reasonable terms, at a reasonable cost or in sufficient amounts to protect us against losses due to product liability claims.

OUR ABILITY TO GENERATE FUTURE REVENUE FROM PRODUCTS WILL DEPEND ON REIMBURSEMENT AND DRUG PRICING

Acceptable levels of reimbursement of the cost of developing and manufacturing of drugs and treatments related to those drugs by government authorities, private health insurers and other organizations will have an effect on the successful commercialization of, and attracting collaborative partners to invest in the development of, our product candidates. We cannot be sure that reimbursement in the United States or elsewhere will be available for any products we may develop or, if already available, will not be decreased in the future. If reimbursement is not available or is available only to limited levels, we may not be able to commercialize our products, and may not be able to obtain a satisfactory financial return on our products.

Third-party payors increasingly are challenging prices charged for medical products and services. Also, the trend toward managed health care in the United States and the changes in health insurance programs, as well as legislative proposals to reform health care or reduce government insurance programs, may result in lower prices for pharmaceutical products, including any products that may be offered by us in the future. Cost-cutting measures that health care providers are instituting, and the effect of any health care reform, could materially adversely affect our ability to sell any products that are successfully developed by us and approved by regulators. Moreover, we are unable to predict what additional legislation or regulation, if any, relating to the health care industry or third-party coverage and reimbursement may be enacted in the future or what effect such legislation or regulation would have on our business.

RISKS RELATED TO THIS OFFERING AND OWNERSHIP OF OUR COMMON STOCK

VOLATILITY OF OUR STOCK PRICE COULD CAUSE YOU TO LOSE ALL OR PART OF YOUR INVESTMENT

The market price of our common stock, like that of the common stock of many other biotechnology companies, may be highly volatile. The stock market in general has recently experienced extreme price and volume fluctuations, and this volatility has affected the market prices of securities of many biotechnology and pharmaceutical companies for reasons frequently unrelated, or disproportionate, to the operating performance of those companies. The market price of our common stock may fluctuate significantly in response to the following factors, some of which are beyond our control:

- changes in securities analysts' estimates of our financial performance;
- changes in market valuations of similar companies;
- variations in our quarterly operating results;
- acquisitions and strategic partnerships;
- announcements of technological innovations or new commercial products by us or our competitors;
- disclosure of results of clinical testing or regulatory proceedings;

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- changes in our management;
- broad fluctuations in stock market prices and volume; and
- general economic conditions, including inflation and unemployment rates.

Investors may not be able to resell their shares of our common stock following periods of volatility because of the market's adverse reaction to the volatility. We cannot assure you that our stock will trade at the same levels as the stock of other companies in our industry or that the market in general will sustain its current prices.

FUTURE SALES OF COMMON STOCK BY OUR EXISTING STOCKHOLDERS COULD CAUSE OUR STOCK PRICE TO FALL

Sales of substantial amounts of our common stock in the public market after the completion of this offering, or the perception that those sales could occur, could adversely affect the market price of our common stock and could materially impair our future ability to raise capital through offerings of our common stock.

OUR OFFICERS AND DIRECTORS AND THEIR AFFILIATES MAY BE ABLE TO CONTROL THE OUTCOME OF MOST CORPORATE ACTIONS REQUIRING STOCKHOLDER APPROVAL

After this offering, our directors and executive officers and their affiliates will beneficially own approximately 35% of our common stock. As a result, these stockholders, if they act together, will be able to influence our management and affairs and all matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. This concentration of ownership may have the effect of delaying or preventing a change in control of our company and might affect the market price of our common stock.

WE MAY ALLOCATE THE NET PROCEEDS FROM THIS OFFERING IN WAYS WITH WHICH YOU MAY NOT AGREE

Our business plan is general in nature and is subject to change based upon changing conditions and opportunities. Our management has broad discretion in applying the net proceeds we estimate we will receive in this offering. Because the net proceeds are not required to be allocated to any specific investment or transaction, you cannot determine at this time the value or propriety of our application of the proceeds. Moreover, you will not have the opportunity to evaluate the economic, financial or other information on which we base our decisions on how to use our proceeds. As a result, you and other stockholders may not agree with our decisions.

OUR CORPORATE DOCUMENTS AND PROVISIONS OF DELAWARE LAW MAY PREVENT A CHANGE IN CONTROL OR MANAGEMENT THAT STOCKHOLDERS MAY CONSIDER DESIRABLE

Section 203 of the Delaware General Corporation Law and our charter and by-laws contain provisions that might enable our management to resist a takeover of our company. These provisions could have the effect of delaying, deferring, or preventing a change in control of us or a change in our management that stockholders may consider favorable or beneficial. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors and take other corporate actions. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock.

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CAPITALIZATION

The following table summarizes as of March 31, 2002 our cash, cash equivalents, marketable securities and accrued interest receivable and our capitalization:

- on an actual basis; and
- on a pro forma basis to give effect to the sale of 4,000,000 shares of common stock offered by us in this offering at a public offering price of \$8.20 per share, and the receipt of net proceeds of approximately \$31.0 million from the sale of the shares, after deducting underwriting discounts and commissions and our estimated offering expenses.

This table does not include:

- 4,548,677 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2002 at a weighted average exercise price of \$10.29 per share or any stock options issued subsequent to March 31, 2002;
- 2,873,688 shares of common stock issuable upon exercise of common stock purchase warrants outstanding as of March 31, 2002 at an exercise price of \$5.92 per share; or
- 1,040,111 additional shares of common stock that we could issue under our stock plans as of March 31, 2002 or any additional shares available for grants subsequent to March 31, 2002 under our stock plans.

	MARCH 31, 2002	
	----- ACTUAL -----	PRO FORMA -----
In thousands, except share data		
Cash, cash equivalents, marketable securities and accrued interest receivable.....	\$ 55,589(1)	\$ 86,589(1)
	=====	=====
Stockholders' equity:		
Common Stock, \$0.001 par value, 75,000,000 shares authorized at March 31, 2002, actual and pro forma; 34,921,677 shares issued and outstanding at March 31, 2002, actual and 38,921,677 shares issued and outstanding, pro forma.....	35	39
Additional paid-in capital.....	320,933	351,929
Deferred stock compensation.....	(6,215)	(6,215)
Accumulated deficit.....	(263,085)	(263,085)
Accumulated other comprehensive income, principally foreign currency translation.....	81	81
	-----	-----
Total stockholders' equity.....	51,749	82,749
	-----	-----
Total capitalization.....	\$ 51,749	\$ 82,749
	=====	=====

(1) Includes \$10.0 million that we borrowed under our loan and security agreement with Comerica Bank-California. Subsequent to March 31, 2002, we

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repaid in full the borrowing under this facility.

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SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION

This prospectus supplement and the documents we incorporate by reference in the accompanying prospectus contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act that involve substantial risks and uncertainties. You can identify these statements by forward-looking words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "should," "will," and "would" or similar words. You should carefully read statements that contain these words because they discuss our future expectations, contain projections of our future results of operations or of our financial position or state other "forward-looking" information. We believe that it is important to communicate our future expectations to our investors. However, there may be events in the future that we are not able to accurately predict or control. There are a number of important factors that could cause our actual results to differ materially from the results anticipated by our forward-looking statements. The factors referenced in the section captioned "Risk Factors," as well as any cautionary language in this prospectus supplement and in the documents we incorporate by reference in this prospectus supplement, provide examples of risks, uncertainties and events that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements. Before you invest, you should be aware that the occurrence of the events described in these risk factors and elsewhere in this prospectus supplement and in the documents we incorporate by reference could have a material adverse effect on our business, results of operations and financial position.

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UNDERWRITING

Subject to the terms and conditions set forth in an underwriting agreement dated June 20, 2002, Bear, Stearns & Co. Inc., the underwriter, has agreed to purchase from us 4,000,000 shares of common stock at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus.

The underwriting agreement provides that the obligations of the underwriter thereunder are subject to approval of certain legal matters by its counsel and various other conditions.

The underwriter has advised us that it proposes to offer the shares directly to the public at the offering price set forth on the cover page of this prospectus supplement. After the initial offering of the shares to the public, the underwriter may change the offering price and other selling terms.

We have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act, or to contribute to payments that the underwriter may be required to make in respect of those liabilities.

Our directors, executive officers and certain other officers, who collectively beneficially hold a total of 1,508,993 shares of common stock or common stock equivalents, have agreed not to sell or offer to sell or otherwise dispose of any such securities for a period of 90 days after the date of this prospectus supplement, without the prior written consent of the underwriter. Our largest stockholder, who beneficially holds 10,655,256 shares of common stock or common stock equivalents, has agreed not to sell or offer to sell or otherwise

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dispose of such securities for a period of 30 days after the date of this prospectus supplement, without the consent of the underwriter. We have also agreed that, without the prior written consent of the underwriter, we will not issue, sell or offer to issue or sell or otherwise dispose of any shares of common stock or securities convertible into or exercisable or exchangeable for our common stock, for a period of 90 days after the date of this prospectus supplement. Our agreement with the underwriter provides, however, that we may, without consent, (a) issue shares of our common stock upon the exercise of currently outstanding stock options and warrants and (b) grant options under, and issue and sell shares pursuant to, our stock plans.

In order to facilitate this offering, the underwriter may engage in transactions that stabilize, maintain, or otherwise affect the price of the common stock during and after this offering. Specifically, the underwriter may over-allot or otherwise create a short position in the common stock for its own account by selling more shares of common stock than we have actually sold to the underwriter. The underwriter may elect to cover any short position by purchasing shares of common stock in the open market. In addition, the underwriter may stabilize or maintain the price of the common stock by bidding for or purchasing shares of common stock in the open market and may impose penalty bids, under which selling concessions allowed to syndicate members or other broker-dealers participating in this offering are reclaimed if shares of common stock previously distributed in this offering are repurchased in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price at a level above that which might otherwise prevail in the open market and these transactions may be discontinued at any time. The imposition of a penalty bid also may affect the price of the common stock to the extent that it discourages resales. No representation is made as to the magnitude or effect of these activities.

The underwriter may, from time to time, engage in transactions with, and perform services for, us in the ordinary course of its business.

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The following table shows the underwriting discount to be paid to the underwriter by us in connection with this offering.

	PER SHARE	TOTAL
	-----	-----
Offering price.....	\$8.20	\$32,800,000
Underwriting discounts and commissions.....	\$0.41	\$ 1,640,000
Proceeds, before expenses, to us.....	\$7.79	\$31,160,000

Other expenses of this offering, including the registration fees and the fees of financial printers, legal counsel, and accountants, payable by us are expected to total approximately \$160,000.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed on for us by Hale and Dorr LLP, Boston, Massachusetts. As of June 18, 2002, partners of Hale and Dorr LLP beneficially owned an aggregate of 18,844 shares of our common stock and warrants exercisable for 1,554 additional shares of our common stock. Stroock & Stroock & Lavan LLP, New York, New York, will pass upon certain matters for the underwriter.

PROSPECTUS

4,000,000 SHARES

THE MEDICINES COMPANY

COMMON STOCK

We may offer from time to time shares of our common stock in amounts, at prices and on terms to be determined in light of market conditions at the time of sale and set forth in a prospectus supplement.

The common stock is quoted on the Nasdaq National Market under the symbol "MDCO." On April 22, 2002, the closing sale price of our common stock was \$10.09 per share.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

This prospectus may not be used to sell shares of our common stock unless it is accompanied by a prospectus supplement.

Prospectus dated May 1, 2002.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration

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process. Under this shelf process, we may offer from time to time in one or more offerings up to a total of 4,000,000 shares of our common stock. Each time we use this prospectus to offer shares of common stock, we will provide a prospectus supplement that will contain specific information about the terms of that offering. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with the additional information described under the headings "Where You Can Find More Information" and "Incorporation of Certain Documents by Reference."

THE MEDICINES COMPANY

We operate as a pharmaceutical company selling and developing products for the treatment of hospital patients. We acquire, develop and commercialize biopharmaceutical products that are in late stages of development or have been approved for marketing. We began selling Angiomax, our lead product, in U.S. hospitals in January 2001 as an anticoagulant replacement for heparin, selling \$14.2 million of Angiomax in 2001. In December 2000, we received marketing approval from the United States Food and Drug Administration, or FDA, for Angiomax for use as an anticoagulant in combination with aspirin in patients with unstable angina undergoing coronary balloon angioplasty. Coronary balloon angioplasty is a procedure that is used to restore normal blood flow in an obstructed artery in the heart.

Our sales force and marketing team are dedicated full time to selling Angiomax. These professionals are all experienced in acute care hospital marketing and are aligned to cover the 750 hospitals in the United States that perform 200 or more coronary angioplasties per year. We are seeking to broaden Angiomax sales using educational programs, preceptorships in leading medical centers, publications, clinical trials and support for investigator-initiated studies. We plan to leverage our sales presence in these hospitals by expanding the uses of Angiomax beyond the cardiac catheterization laboratory into the operating room and for the emergency treatment of ischemic heart disease patients, and by seeking to acquire and develop additional pharmaceutical products that our hospital sales force can sell. In 2002, we acquired rights from AstraZeneca AB to clevidipine, an intravenous compound for the short term control of high blood pressure, for which Phase 3 clinical trials are planned.

We are developing Angiomax for additional potential hospital applications as a procedural anticoagulant and for use in the treatment of ischemic heart disease, a condition which occurs when organs receive an inadequate supply of oxygen as a result of decreased blood flow. As of March 15, 2002, clinical investigators had administered Angiomax to approximately 14,000 patients in clinical trials in the treatment and prevention of blood clots in a wide range of hospital applications. We believe that Angiomax can become the leading replacement for heparin in hospital care. In the United States, heparin is the most widely-used acute care anticoagulant and is used to treat over seven million hospitalized patients per year.

Angiomax directly blocks or inhibits the actions of thrombin, a key component in the formation and growth of blood clots. Thrombin is a factor central to the clotting process because it plays an essential role in the formation of fibrin, a protein that forms the mesh of a blood clot, and because thrombin is a potent activator of platelets which clump around fibrin as a blood clot forms. By blocking thrombin directly, rather than indirectly like heparin, Angiomax inhibits the actions of thrombin both in the clot and in the blood. The inhibition of thrombin by Angiomax is reversible, which means that its thrombin-blocking effect wears off over time, allowing thrombin to again work in the clotting process. This reversibility is associated with a reduced risk of bleeding.

In clinical trials in angioplasty, Angiomax has:

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- reduced the frequency of life-threatening coronary events including heart attack and the need for emergency coronary procedures;

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- reduced the likelihood of major bleeding and the need for blood transfusion;
- demonstrated a predictable anticoagulant response to a specific Angiomax dose, which enables simplified dosing; and
- been used in combination with GP IIb/IIIa inhibitors and other products used in angioplasty, demonstrating no evidence of significant interactions.

Our strategy is to build a commercial biopharmaceutical operation by acquiring, developing and commercializing development-stage or approved products that make a clinical difference to hospitalized patients. In acquiring development-stage products, we seek to acquire late-stage products with (1) existing clinical data which provides reasonable evidence of safety and efficacy, (2) an anticipated time to market of four years or less and (3) potential cost savings to payors or improved efficiency of patient care.

We were incorporated as a Delaware corporation in July 1996. Our principal executive offices are located at Five Sylvan Way, Suite 200, Parsippany, New Jersey 07054. Our telephone number is (973) 656-1616. We own or have rights to various trademarks and tradenames used in our business, including The Medicines Company name and logo and Angiomax(R).

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RISK FACTORS

Investing in our common stock involves a high degree of risk. Please see the risk factors set forth in the prospectus supplement which accompanies this prospectus as well as our periodic reports, which have been filed with the SEC and are incorporated by reference in this prospectus. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus. The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION

This prospectus, any prospectus supplement and the documents we incorporate by reference in this prospectus contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act that involve substantial risks and uncertainties. You can identify these statements by forward-looking words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "should," "will," and "would" or similar words. You should carefully read statements that contain these words because they discuss our future expectations, contain projections of our future results of operations or of our financial position or state other "forward-looking" information. We believe that it is important to communicate our future expectations to our investors. However, there may be events in the future that we are not able to accurately predict or control. There are a number of important factors that could cause our actual results to differ materially from the results anticipated by our forward-looking statements. The factors

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referenced in the section captioned "Risk Factors," as well as any cautionary language in this prospectus and in the documents we incorporate by reference in this prospectus, provide examples of risks, uncertainties and events that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements. Before you invest, you should be aware that the occurrence of the events described in these risk factors and elsewhere in this prospectus and in the documents we incorporate by reference could have a material adverse effect on our business, results of operations and financial position.

USE OF PROCEEDS

Unless we otherwise indicate in the applicable prospectus supplement, we currently intend to use the net proceeds from the sale of the common stock offered by this prospectus for working capital and other general corporate purposes, including funding:

- additional clinical trials of Angiomax and other product development activities;
- further commercialization activities of Angiomax for use in patients undergoing angioplasty; and
- the acquisition of additional product candidates and approved products.

We may set forth additional information on the use of net proceeds from the sale of the common stock offered by this prospectus in a prospectus supplement relating to the specific offering.

PLAN OF DISTRIBUTION

We may sell the common stock offered by this prospectus in one or more of the following ways from time to time:

- through agents to the public or to investors;
- to underwriters for resale to the public or to investors; or
- directly to investors.

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We will set forth in a prospectus supplement the terms of the offering of the common stock, including the name or names of any agents or underwriters, the purchase price of the common stock being offered and the proceeds we will receive from the sale, any over-allotment options under which underwriters may purchase additional common stock from us, any delayed delivery arrangements, any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation, any public offering price, and any discounts or concessions allowed or reallocated or paid to dealers. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time.

AGENTS

We may designate agents who agree to use their reasonable efforts to solicit purchases for the period of their appointment or to sell common stock on a continuing basis.

UNDERWRITERS

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If we use underwriters for a sale of common stock, the underwriters will acquire the common stock for their own account. The underwriters may resell the common stock in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the common stock will be subject to the conditions set forth in the applicable underwriting agreement. The underwriters will be obligated to purchase all the common stock offered in an offering if they purchase any of the common stock in such offering. We may change from time to time any public offering price and any discounts or concessions the underwriters allow or reallow or pay to dealers. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement naming the underwriter the nature of any such relationship.

DIRECT SALES

We may also sell common stock directly to one or more purchasers without using underwriters or agents.

Underwriters, dealers and agents that participate in the distribution of the common stock may be underwriters as defined in the Securities Act and any discounts or commissions they receive from us and any profit on their resale of the common stock may be treated as underwriting discounts and commissions under the Securities Act. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us or our subsidiaries in the ordinary course of their businesses.

TRADING MARKET

Our common stock is listed on the Nasdaq National Market. It is possible that one or more underwriters may make a market in our common stock, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice. We cannot give any assurance as to the liquidity of the trading market for our common stock.

STABILIZATION ACTIVITIES

Any underwriter may engage in over-allotment, stabilizing transactions, short covering transactions and penalty bids, which stabilize, maintain or otherwise affect the market price of the common stock at levels above those which might otherwise prevail in the open market. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase common stock so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of common stock in the open market after the distribution is completed to

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cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the common stock originally sold by the dealer is purchased in a covering transaction to cover short positions. These transactions may be effected on the Nasdaq National Market, in the over-the-counter market, or otherwise. If commenced, the underwriters may discontinue any of the activities at any time.

PASSIVE MARKET MAKING

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Any underwriters and selling group members who are qualified market makers on the Nasdaq National Market may engage in passive market making transactions in the common stock on the Nasdaq National Market in accordance with Rule 103 of Regulation M. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for the common stock; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid then must be lowered when certain purchase limits are exceeded.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed on for us by Hale and Dorr LLP, Boston, Massachusetts. As of April 22, 2002, partners of Hale and Dorr LLP beneficially owned an aggregate of 19,055 shares of our common stock and warrants exercisable for 1,554 additional shares of our common stock.

EXPERTS

Ernst & Young LLP, independent auditors, have audited our consolidated financial statements and schedule included in our Annual Report on Form 10-K for the year ended December 31, 2001, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements and schedule are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file reports, proxy statements and other documents with the SEC. You may read and copy any document we file with the SEC at the public reference facility the SEC maintains at:

Room 1024, Judiciary Plaza
450 Fifth Street, N.W.
Washington, D.C. 20549

and you may also obtain copies of these materials by mail from the Public Reference Section of the SEC at:

40 Fifth Street, N.W.
Washington, D.C. 20549

at prescribed rates. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms.

The SEC also maintains a Web site, the address of which is <http://www.sec.gov>. That site contains our annual, quarterly and special reports, proxy statements, information statements and other filings we make with the SEC.

This prospectus is part of a registration statement that we filed with the SEC. The registration statement contains more information than this prospectus regarding us and our common stock, including exhibits and schedules. You can obtain a copy of the registration statement from the SEC at any address listed above or from the SEC's Web site.

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The SEC allows us to "incorporate" into this prospectus information that we file with the SEC in other documents. This means that we can disclose important information to you by referring to other documents that contain that information. Any information that we incorporate by reference is considered to be part of this prospectus. The SEC filings listed below are incorporated by reference into this prospectus. In addition, all future filings that we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act after the date of this prospectus are incorporated by reference in this prospectus as of the respective filing dates of these documents. Information contained in this prospectus and information contained in our SEC filings in the future that are incorporated by reference in this prospectus automatically update and supersede information previously filed, to the extent the new information differs from or is inconsistent with the old information.

We have filed the following documents with the SEC. These documents are incorporated herein by reference as of their respective dates of filing:

- (1) Our Annual Report on Form 10-K for the year ended December 31, 2001;
- (2) The description of our common stock contained in our Registration Statement on Form 8-A declared effective on July 28, 2000; and
- (3) All of our filings pursuant to the Exchange Act after the date of the filing of the initial registration statement and prior to the effectiveness of the registration statement.

You may request a copy of these documents, which will be provided to you at no cost, by contacting:

The Medicines Company
One Cambridge Center
Cambridge, Massachusetts 02142
Attention: Investor Relations
Telephone: (617) 225-9099

You should rely only on the information contained in this prospectus, including information incorporated by reference as described above, or any prospectus supplement that we have specifically referred you to. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents or that any document incorporated by reference is accurate as of any date other than its filing date. You should not consider this prospectus to be an offer or solicitation relating to the securities in any jurisdiction in which such an offer or solicitation relating to the securities is not authorized. Furthermore, you should not consider this prospectus to be an offer or solicitation relating to the securities if the person making the offer or solicitation is not qualified to do so, or if it is unlawful for you to receive such an offer or solicitation.

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4,000,000 SHARES

[THE MEDICINES COMPANY LOGO]

COMMON STOCK

PROSPECTUS SUPPLEMENT

BEAR, STEARNS & CO. INC.

JUNE 20, 2002