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Market Studies of United States

A report on a study of the market for
cardiac products in the Mid-Atlantic States



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A REPORT ON A STUDY OF THE MARKET FOR CARDIAC PRODUCTS
IN THE MID-ATLANTIC STATES OF THE UNITED STATES

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INTRODUCTION

This report summarizes the results of a market study carried out by Wind Associates Inc. for the Department of Industry, Trade and Commerce.

The study explores the market for three categories of health care products:

- (i) consumable and disposable hospital products,
- (ii) clinical laboratory and diagnostic products and,
- (iii) non-invasive cardiac diagnostic products.

The report covers the non-invasive cardiac diagnostics group. The other two product groups are covered in separate reports.

The study was carried out in 1981 in conjunction with the Canadian Consulate in Philadelphia and assesses the market potential for the above product categories of the Mid-Atlantic states of the United States. This region of the U.S. has been selected for study as a potential market for Canadian exports of health care products.

A BRIEF NOTE ON REGULATORY REQUIREMENTS

The study of the Mid-Atlantic market for health care products does not include any reference to the regulatory requirements which must be met by exports to the U.S. This was done to focus the study on the commercial aspect of the market. A summary of these regulatory requirements may be found in a background entitled:

Summary of Regulatory Requirements for
Medical Devices in Canada and the United States

Prepared by: Sector Analysis Division
Chemicals Branch
Department of Industry, Trade and Commerce
Ottawa, Canada

These papers are available from the Department of Industry, Trade and Commerce.

OBJECTIVES

The primary objective of this report is to assess the Mid-Atlantic market potential for cardiac equipment.

Two secondary objectives are to provide:

- (a) initial guidelines for the long-term export development to the U.S. of the Canadian health care products industry, and
- (b) initial guidelines for the design of marketing entry strategies.

APPROACH

A five-phase approach was utilized:

- (a) A telephone survey to assess the needs and export experience of selected Canadian manufacturers.
- (b) Analysis of available secondary data to assess the market potential for the three product categories and their current market structure.
- (c) A survey among key decision makers with respect to the acquisition of new equipment and supplies. This survey was based on in-depth personal interviews with purchasing agents and physicians in hospitals and labs.
- (d) A survey among distributors to assess their mode of operation and the conditions under which they will carry and promote Canadian products.
- (e) Integration of the above.

GENERAL FINDINGS

1. The U.S. market for hospital and lab products and supplies is large and growing. There are 7,200 hospitals and more than 14,000 hospital and commercial clinical laboratories.
2. The U.S. market for the three product categories - disposable and consumable hospital products, cardiac equipment and clinical lab and diagnostic products -- is large and growing. Total 1978 sales of these three product categories are 19.4 billion dollars -- \$16.5 billion in consumable/disposables; \$2.25 billion in lab products and \$650 million in cardiac equipment and supplies. All three markets have enjoyed real growth. Yet, there is a large variance across products and product categories. There is a strong movement toward the use of disposable products and increased emphasis on diagnostic and preventive medicine.
3. The Mid-Atlantic states -- Eastern Pennsylvania, Virginia, Maryland, Washington, D.C., Delaware and Southern New Jersey, are a large and attractive market for hospital and lab products and supplies. It has a large population base (29.6 million individuals) and a large hospital base (699 hospitals with 199,920 beds). (Appendix B shows a detailed breakdown of hospital statistics for this region). In addition, most of the major laboratories (SK&F, Med Path, Denam and others) are concentrated in an area within 100 miles of Philadelphia, with easy access to most of the Northeast and Southeastern U.S. This market also has a large number of distributors who would consider carrying Canadian products. Furthermore, this market can be viewed as a good test market for the entire U.S. It is large and varied enough to include all forms of medical care, and an entry strategy which is successful here can be implemented nationally. This market is also a sophisticated one and success here can be used as a strong "selling" point in other parts of the country.
4. Hospital and lab purchase decisions involve a number of participants. For medical equipment more than \$100,000, HSA approval is also required (see Appendix A for a brief discussion of HSA).
5. In all three product categories, distributors play an important role and should be considered as one of the ways of entering the U.S. market.
6. Canadian manufacturers overall have a good image in this market, but they have to compete effectively against U.S. and other manufacturers; i.e., being Canadian does not offer any competitive advantage. It is also important for the Canadian manufacturers to overcome certain perceived obstacles to entry into the U.S. market (for a summary of these concerns, see Appendix C).

7. The trend among local distributors is one of constriction rather than expansion. Distributors are trying to reduce the number of brands per product category, and express reluctance to add new products. This is primarily due to the desire to simplify inventory and to focus their marketing activities on a reduced number of brands. Their reluctance to add new products does have some important exceptions. They are willing to adopt a new product if: (a) it is innovative, (b) they can get an exclusive distribution agreement, and or (c) hospitals specifically request it.

8. The distributors interviewed showed no specific resistance to adding foreign products, either Canadian (with whom they've had little experience) or Japanese (with whom they have had mostly favourable experience). Predictably, distributors specified that these foreign products must show some specific, significant advantage in profitability or quality. Although there was no specific resistance to adding Canadian or Japanese products, their adoption was conditional on the same factors that distributors said were necessary of adoption of any new product: (a) innovativeness and (b) exclusivity. Because of a highly competitive distribution environment, there is a preoccupation with exclusivity as a competitive weapon.

9. The market for all products is quite heterogeneous.

10. Major opportunities for a new manufacturer entering the market, as perceived by the key buyers are by:
 - having better products with competitive prices
 - improve delivery
 - provide new information
 - improve relationship among all participants in the system.

OVERALL STRATEGIC GUIDELINES

1. The first question facing any Canadian manufacturer is obviously "should we enter the U.S. market"? The size and growth of the U.S. market makes it a very attractive market. Yet, the market is highly competitive and the buyers sophisticated. Success would require, therefore, a unique positioning (or real cost advantages). If such a positioning can be provided by Canadian manufacturers the opportunities of operating in the U.S. are very high. The risk of failure can be reduced if the entry into the U.S. market is based on a good understanding of the market and its needs and follows an adaptive experimentation approach; i.e., design at least two major entry strategies (either for the same or different products) and experiment with them.
2. The first and most critical question facing each Canadian manufacturer is "what is the differential advantage his/her product offers the buying organization"? The two major positioning options are:
 - a. unique product performance -- typically associated with an innovative product, or for established products on those cases in which the superior performance of the Canadian product can be demonstrated to the key hospital and lab decision makers.
 - b. price -- offer a product similar to the one offered by competitors but at significant cost savings.

If a given product does not have a unique positioning and does not offer a cost advantage, there is little reason to expect successful entry into the U.S. market.

On the other hand, an ideal situation is the one in which a manufacturer can offer an improved/innovative product at a price which offers U.S. buyers significant cost savings.

3. Related to the positioning decision is the question of "what is the competitive advantage of the Canadian manufacturer"? If it is in production, quality and or cost, it would have different implications than if it were in R&D. In the first case, it might even be beneficial to consider the purchase (licence) of new innovative products in the U.S. and elsewhere and manufacturing them in Canada. If on the other hand the advantage of a Canadian firm is in the R&D area, it should specialize in this aspect and consider the production aspect as a separate one (which can either be developed or farmed outside to another firm).
4. The second critical decision, is the decision whether to sell directly to the hospitals and labs or through distributors. Both options should be considered.

Selling through distributors. There are major advantages for selling through distributors -- they have an access to the market, local presence and are typically lower cost method of distribution than employing one's own sales-force. Yet, getting a distributor to carry and promote the products of Canadian manufacturers is not an easy task. The basic task facing the Canadian manufacturer is to develop a strategy to sell the distributor and motivate him/her to promote the Canadian products. Assuring reliable supplies, offering exclusive rights for a given territory and competitive financial terms are all necessary conditions for getting acceptance by distributors. Furthermore, the more unique the product positioning the easier it is to get their acceptance. It is important to note, however, that employing a distributor still requires continuous service of his needs (after sales service, information, reliable delivery, etc.).

Selling direct. This option is viable for some of the larger customers (hospitals and labs). It is typically more expensive than operating through distributors. Yet, it offers greater opportunity to "push" the product more effectively. The cost of such an option especially when considering a single region such as the Mid-Atlantic states, can be quite reasonable since a single salesperson can cover the area quite effectively and a compensation scheme based primarily on commission can help control the cost.

Mixed pattern. Given the advantages (and disadvantages) of the two major approaches to distribution, it is strongly suggested that the Canadian manufacturer consider experimenting with both methods. Furthermore, the proposed mixed pattern can include both using the two methods of distribution as competing approaches (testing to establish which is more effective) as well as cooperative approach primarily in the form of a joint venture between Canadian manufacturers and U.S. distributors.

5. The U.S. market for hospital and lab products is highly competitive. Any new entry into this market has first of all to create awareness for its products and services. Even if one has a unique and innovative product, efforts should be directed toward creating awareness of the product and preference for it among the relevant decision makers in hospitals and labs. The need to heavily promote new products (assuming they do have a unique positioning) is especially critical given that most buyers are very satisfied with their current products and suppliers and, hence, perceive little need for change and adding a new supplier.

It is desirable, therefore, to experiment with different levels of promotional efforts. In planning the necessary promotion campaign, one should take advantage of the word of mouth communication among physicians in a given area and concentrate in one area rather than spread the efforts in a number of areas. It is strongly suggested that unless a national distributor can be obtained to carry and promote the given products, a regional entry strategy be employed.

6. In considering the development of a promotional campaign, the Canadian manufacturers should consider all available promotional tools ranging from the conventional magazine advertising, direct mail, trade shows and sales calls to the newer telephone promotions and other innovative promotional methods.
7. If a co-operative effort among a number of Canadian manufacturers can be co-ordinated, another mode of entry into the U.S. should be considered -- establishing a marketing and trading company. Such a company would combine the Japanese trading company concept with modern marketing strategy concepts and approaches and would be designed to compete with local distributors and manufacturers.
8. Short-term export strategy should involve at the minimum a four-stage approach:
 - (a) Evaluation of current products to identify those with a potential competitive advantage in the U.S. market (either in terms of cost or unique positioning).
 - (b) Test the market acceptability for these products. This can be done either informally by promoting the product to a number of distributors and hospitals and lab personnel and getting their reaction to it or in a more formal way by conducting a concept/product testing approach.
 - (c) Decide on a distribution option and design an associated marketing strategy for testing in the Mid-Atlantic states.
 - (d) Implement the test market program, monitor results and modify the program accordingly.
9. The long-range export development strategy differs from the short-term strategy (point #8) with respect to the first phase. Instead of limiting the export activities to the firm's current products, the long-term strategy should consider as viable option the development of new products to meet the specific needs of customers (hospitals and labs) which are not met by U.S. and other competitors.

For this strategy, more effort should be placed on R&D activities and possible extension of current supply capabilities. This would require more testing of early concepts in the U.S. market. A Canadian marketing and trading company, if established, could serve as an important vehicle to facilitate the development and subsequent marketing of the new products.

SPECIFIC FINDINGS

1. Market Composition, Size and Growth

An analysis of the secondary data was performed in order to assess the market potential for noninvasive cardiac diagnostic equipment in the United States.

In 1979, the total U.S. sales volume for noninvasive diagnostic equipment was \$72.8 million. This volume was divided among electrocardiograph equipment (\$32.7 million), echocardiograph equipment (\$20 million), diagnostic computers (\$14.3 million), and stress testing equipment (\$5.8 million). Projected growth rates for these four products differ substantially. Stress testing equipment is expected to show extremely high growth -- 65% in constant sales dollars. Diagnostic computers and echocardiograph equipment are expected to show very high growth (37% and 20% respectively). Electrocardiograph equipment is expected to show a low growth rate of 3%.

The sales volume for all cardiac equipment (including patient monitoring and microprocessor controlled systems, as well as the categories mentioned above) is estimated to be \$650 million in 1981.

2. The Competitive Environment

The competitive structure of the markets for these product categories is characterized by rapid corporate acquisition of small proprietary companies. In the electrocardiograph market, composition is very concentrated with the top three manufacturers of single-channel EKG equipment holding 84% of the market, and the top three manufacturers of three-channel EKG equipment holding 77% of the three-channel market.

The competitive structure of the echocardiograph market is slightly less concentrated with the top three manufacturers of M-mode echocardiograph equipment holding 63% of the M-mode market, and the top three manufacturers of two-dimensional echocardiograph equipment holding 71% of that market. Seventy-nine percent of the stress testing equipment market is owned by the top three manufacturers. The market for computer systems for the diagnosis of electrocardiographs is the most concentrated. Ninety-three percent of this market is held by the top three manufacturers, and the market leader, Hewlett Packard, accounts for 63% of share.

In the Mid-Atlantic market, the predominant purchase pattern for cardiac equipment is one in which almost half (49%) of purchases are made directly from the manufacturer. Cardiac equipment is purchased from a range of more than 35 suppliers. Predominant suppliers were Hewlett Packard (the definite market leader), Marquette, and Avionics.

3. Market Segments

The hospital market for cardiac equipment was segmented first on the basis of the major benefits sought in cardiac equipment and second, on the basis of the hospital personnel's attitudes toward Canadian manufacturers.

Three benefit segments were identified:

The Pro-U.S. Segment (15%). This segment consists of hospital personnel who strongly prefer U.S. manufacturers. Hospitals in this category tend to be relatively small and have a tendency to be growing more slowly than hospitals in the other segments. The occupancy rate in this segment has shown a greater increase in the last two years relative to the other segments.

The Cost/Quality Segment (49%). The two major purchase criteria for this segment are "will the product enhance productivity and cost savings?" and "will use of the product enhance quality of medical care?" hospitals in this segment are large, yet have less tendency to show an increase in occupancy than the other segments. In fact, several hospitals in this segment actually showed a decrease in occupancy rate in the last two years. On the other hand, this segment had a high representation of hospitals which finished 1977 in the black.

The Quality Segment (37%). This segment's major purchase criterion is "will use of the product enhance quality of medical care?" Hospitals in this segment tend to be larger than those in the other segments, and this segment finished 1977 in the red.

When further examined, based on their attitude toward Canadian manufacturers, about two-thirds of the respondents have a positive attitude toward Canadian manufacturers (this is primarily vs. Japanese firms -- they tend to prefer U.S. firms about equally). These hospitals are on the average larger and are primarily concerned with quality of medical care, operating costs (prefer high initial and low operating costs (vs. the opposite case of low initial cost and high operating cost) and are concerned with the hospitals' image.

4. Buying Process

The buying process involves a number of participants. The most active participants by stage of the buying decision process are:

<u>Stage</u>	<u>Most Active Participants</u>
Request Supplies	Chief of Lab
Set Specifications	Chief of Lab, Radiology Department
Seek Information	Chief of Lab, Purchasing Agent, Rad. Dept.
Set Criteria	Chief of Lab, Purch. Agt., Rad. Dept.
Evaluate Suppliers	Chief of Lab, Rad. Dept.
Set Budget	Administrative Committee
Negotiate w/Suppliers	Purch. Agt.
Make Purchase Decision	Administrative Committee, Chief of Lab, Rad. Dept.
Postpurchase Evaluation	Chief of Lab, Rad. Dept.

Benefit Segments and the Buying Process

Some characteristics of the buying process vary somewhat among the Pro-U.S., Cost-Quality, and Quality segments. The Cost/Quality segment hospitals have a significantly greater tendency to use resource allocation committees than the other two segments. Moreover, the Quality segment shows a much higher expectation for an increase in the amount of capital equipment purchased than the other segments.

5. Purchase Pattern

The predominant purchase pattern of cardiac equipment is one in which purchases are made directly from the manufacturer. Less than 10% of the respondents purchase solely from distributors. The Anti-Foreign segment hospitals tend to buy from distributors more and manufacturers less. Hospital purchasing groups are used by the Price/Quality and Quality segments, but not by the Anti-Foreign segment. Major suppliers for all cardiac equipment are Hewlett Packard, Marquette, and Avionics. More than 40 companies were mentioned as suppliers. The average current spent on cardiac supplies by hospitals was about \$130,000 a year.

About two-thirds of the respondents indicated that their hospitals had increased spending on cardiac equipment in the past two years, with an average dollar increase of 35%. Two-thirds of the hospitals expect the amount spent on cardiac equipment to increase within the next year, and only 15% expect it to decrease.

Purchase patterns differ by type of cardiac equipment. For example, about 70% of EKG purchases are made direct from the manufacturer, while the percentage corresponding to other types of equipment are: echocardiogram (51%), radio telemetry monitoring equipment (46%), patient monitoring equipment (49%). In addition, the percentage of hospitals expecting increases in next year's dollar purchase volume varies by product category: echocardiogram (57%), EKG (55%), patient monitoring equipment (53%), radio telemetry monitoring equipment (39%).

6. Criteria Used in Purchase Decisions

In the aggregate, there were four key criteria in their purchases of cardiac equipment:

Enhances quality of care	31%
Cost savings	19%
Involvement of medical staff	13%
Enhances hospital's image	13%

Financing terms were of little importance and overall hospitals prefer a high initial and low operating costs over the alternative situation. The country of origin of the manufacturer is of little importance but Japanese firms are the least preferred compared to U.S. and Canadian firms.

The criteria used in making purchase decisions vary among the hospitals as can easily be seen from the benefit segments discussed earlier.

7. Problems and Opportunities

When asked what factors could simplify and improve their purchase operations, the respondents suggested the following: (1) improve red tape/paperwork, (2) improve relations among vendors, staff, and purchasers, and (3) leave more photos and information to permit more extensive evaluation of equipment.

Respondents were also asked what advice they would give to new manufacturers to increase their chances of selling. The most frequently mentioned advice was: (1) leave more photos/information to permit more extensive evaluation of equipment, (2) offer a new and better product with competitive prices, and (3) improve relations among vendors, staff, and purchasers. Respondents said their advice would not differ if the firms were Canadian.

8. Attitudes of Hospital Personnel

- Seventy-three percent of all respondents indicated that they are very satisfied with their current suppliers. This percentage was highest in the Pro U.S. segment (100%) and lowest in the Quality segment (67%).
- More than half (56%) of respondents have a strong preference for known distributors and about one in four prefer group buying.
- Forty-two percent have both a strong preference for local firms and a strong preference for U.S. firms. These preferences are especially strong in the Pro U.S. segment. Only a small percentage of the respondents perceive foreign products to be as good as U.S. ones -- 17% for Canadian, 14% for European and 12% for Japanese.
- Respondents in the Pro U.S. segment have a high propensity of claiming that their hospitals' decision making is highly centralized (67%) relative to those in the Quality segment (20%).
- About two-thirds of the hospitals expect their hospital to be more cost conscious in the near future.
- The quality and price/quality segments perceive themselves as considerably more innovative hospitals than the Pro U.S. segment.

GENERAL MARKET DATA

The objective of this section is to present information from secondary sources on the U.S. market for cardiac diagnostic products. Specifically, information was sought and is presented on:

- market composition (in terms of product categories)
- market size
- market growth
- major competitors
- other market factors

This section of the report is based on standard industry information, recognized sources, and interviews.

Overview

The U.S. cardiac equipment market for noninvasive techniques consists of five major product categories: electrocardiograph, echocardiograph, phonocardiograph, stress testing equipment, and diagnostic computers.*

The long domination of cardiac diagnostic equipment by electrocardiograph (EKG) equipment has been challenged in the past two decades by three innovations: (1) the application of ultrasound technology to cardiac diagnosis, resulting in echocardiograph equipment; (2) development of computer-assisted interpretation of EKG results; and (3) packaging of products into stress testing packages.

The various types of cardiac diagnostic equipment represent different levels of sophistication. Purchasers are showing a trend toward preferring three-channel EKG equipment over single-channel EKG equipment. Similarly, 2-dimensional echocardiograph equipment is preferred to unidimensional (M-mode) echocardiograph equipment. In addition, these products feature a high degree of modularization. For example, most echocardiograph equipment has an EKG trace which runs simultaneously with the ultrasound scan.

Stress testing equipment has been marketed recently to fill the need for systematic cardiac evaluation of patients after controlled levels of activity. Stress testing packages vary widely. For example, Hewlett Packard offers various combinations of single and 3-channel EKG with a Hewlett Packard monitor and recommends purchase of a treadmill from Quinton Instrument Company.

Computer-assisted interpretation of EKG results, after a long struggle for physician approval, is currently showing rapid acceptance. The use of computers to interpret echocardiograms is still in its infancy but is expected to show rapid growth by the middle of the 1980s.

Phonocardiograph equipment shows the poorest profile among the product categories described here, primarily due to its low popularity. This equipment, which records heart sounds on a chart, is offered as an option to EKG and echocardiograph equipment, rather than being sold as self-standing equipment. 1979 U.S. sales volume for this option was \$2 million. Phonocardiograph equipment will not be emphasized in this report.

* It should be noted that these five product categories account for \$72.8 million of the estimated total cardiac equipment market of \$650 million.

Market Composition

The 1981 total U.S. sales volume for cardiac diagnostic equipment and products was estimated in the neighbourhood of \$650 million. The sales volume of the five products of interest in 1979 were:

	<u>Units</u>	<u>Dollars</u> (000)
(1) Electrocardiographs:		
single-channel	4,200	\$ 6,800
three-channel	3,900	<u>25,900</u>
		32,700
(2) Echocardiographs:		
M-mode	400	7,000
2-dimensional	240	<u>13,000</u>
		20,000
(3) Phonocardiographs	*	*
(4) Stress testing equipment	600	5,800
(5) Programmable diagnostic computers	40	<u>14,300</u>
		\$72,800

* Figures for this item are included in other items as "options".

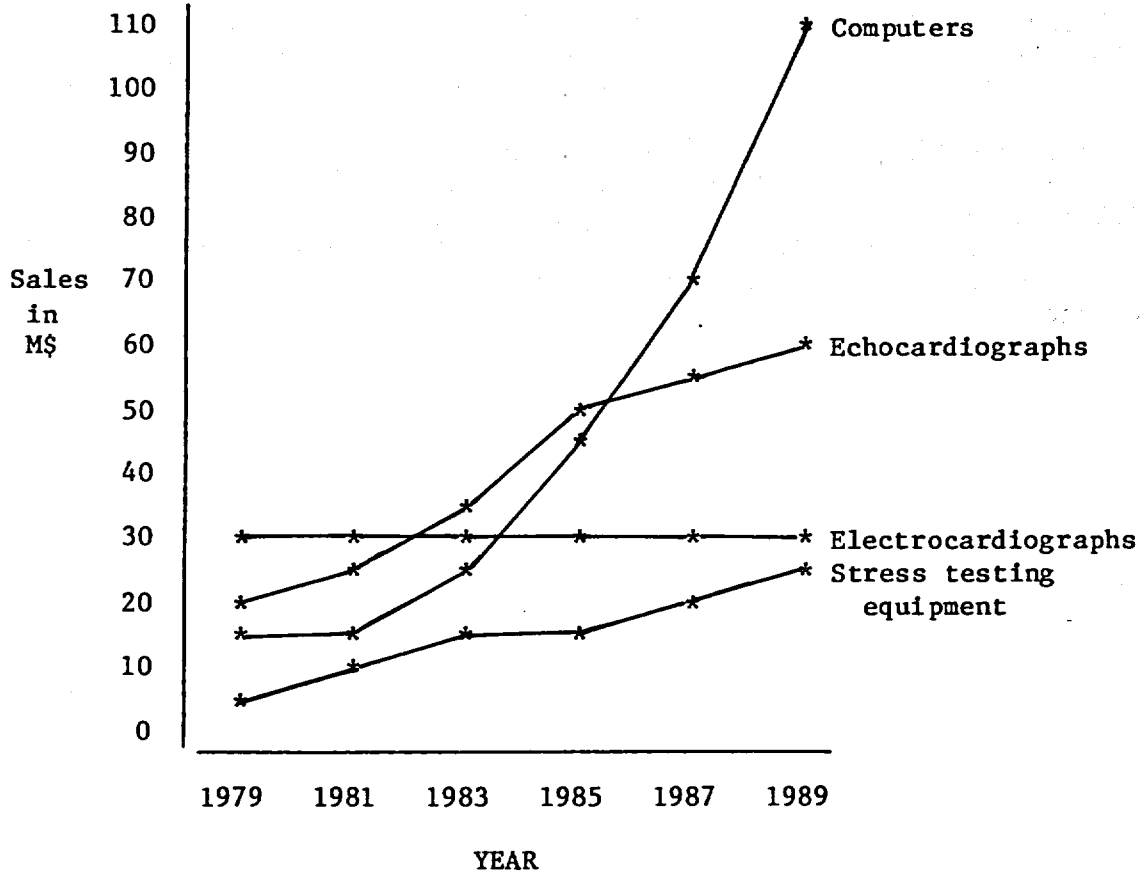
Comparative Size and Growth of Major Categories

Sales data for the major product categories are presented in Figure 1. In 1979, two of the largest categories were electrocardiographs and echocardiographs, showing 1979 U.S. sales volumes of \$32.7 million and \$20 million respectively. Sales volume for diagnostic computers was \$14.3 million, and for stress testing equipment it was \$5.8 million.

Projected sales growth of the diagnostic computers category is extremely high with projected U.S. sales volume at \$46 million in 1985. Echocardiographs and stress testing equipment are expected to show significant growth. The projected sales volume for electrocardiographs is essentially flat, indicating no further growth in this product category.

Figure 1

Project Size of Major Product Categories



<u>Diagnostic Computers</u>		<u>Echo-cardiographs</u>		<u>Electro-cardiographs</u>		<u>Stress Testing Equipment</u>	
Year	\$000	Year	\$000	Year	\$000	Year	\$000
1979	14,300	1979	20,000	1979	32,700	1979	5,800
1981	19,600	1981	27,800	1981	35,300	1981	13,300
1983	29,300	1983	36,700	1983	34,800	1983	17,900
1985	46,200	1985	47,400	1985	36,100	1985	21,700
1987	73,800	1987	60,000	1987	36,300	1987	24,800
1989	112,100	1989	65,500	1989	36,100	1989	27,600

Electrocardiograph

The total 1979 U.S. sales volume for electrocardiograph equipment was \$32.7 million. Of this total, single-channel EKG equipment accounted for \$6.8 million, while three-channel EKG equipment accounted for \$25.9 million. Projected short-term growth rate for EKG equipment is 4-7% in constant dollars.

Sales projections for the two different types of EKG equipment are shown in Figure 2. Three-channel EKG equipment is projected to show a very small sales volume increase, while the single-channel equipment is expected to show a gradual decline in sales volume.

Several factors account for the projection of low growth rate for three-channel units and negative growth for single-channel EKG units. First, there will be a small increase in the number of EKG procedures performed by physicians. The rate of this increase is expected to be about 7% through 1980 and 3% annually through 1989. Second, there is a tendency for physicians to prefer 3-channel units to single-channel units, both for initial sale and for replacement purchase. Third, there is increasing utilization of computer-assisted interpretation of 3-channel results. This trend of computer-assisted interpretation of 3-channel results is expected to permit handling of the increased magnitude of EKG procedures without a comparative increase in the number of EKG units sold. The resulting tightening of the market will cause increased competition, decline in price, and barriers to entry of new competitors.

In 1979, shares of the \$6.8 million single-channel U.S. electrocardiograph market were distributed among the following competitors:

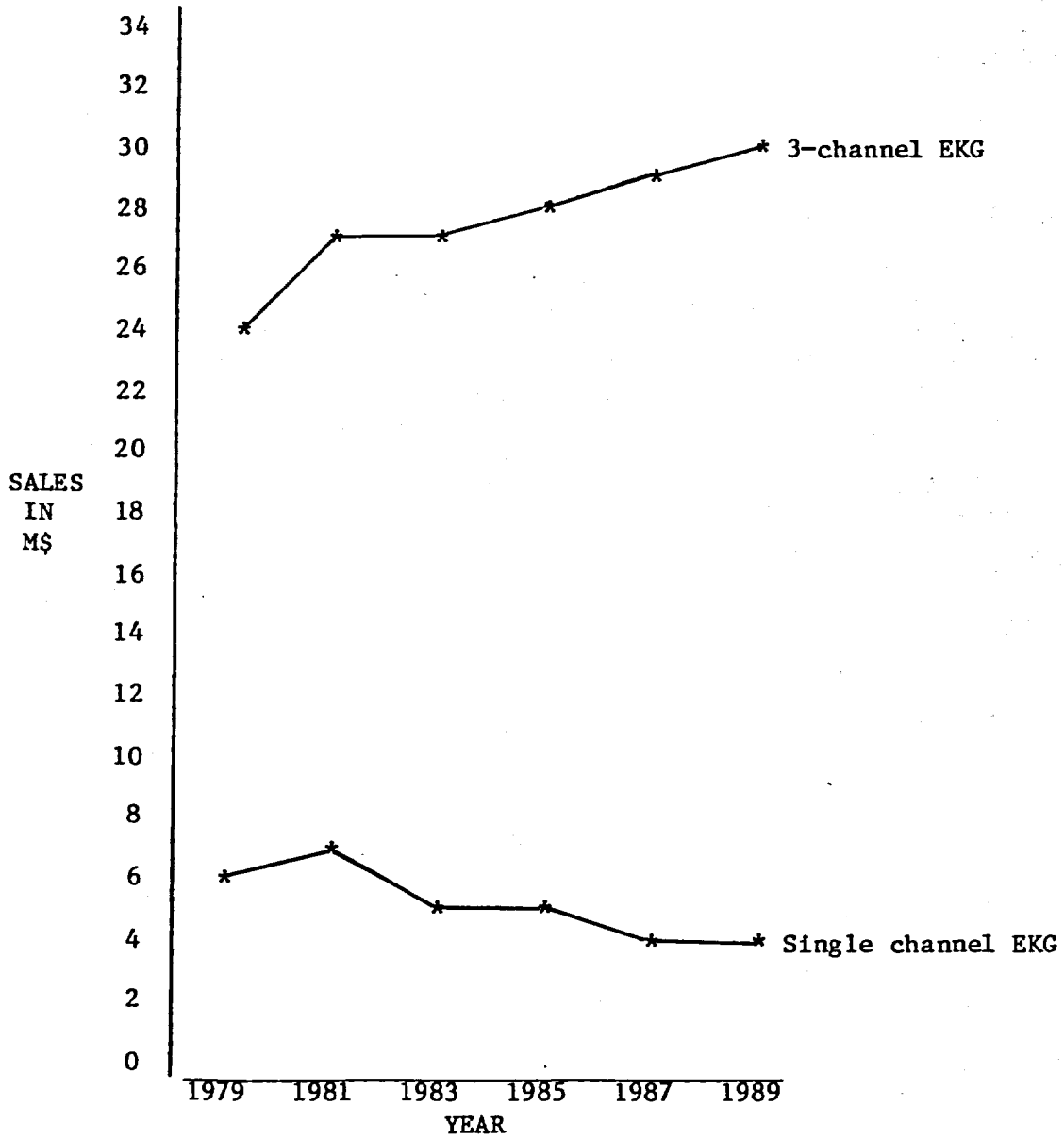
	<u>Market Share</u>
The Burdick Corporation	32%
Cambridge Instruments	31
Hewlett Packard	21
Others	16

The \$25.9 million sales of three-channel EKG machines were accounted for by the following companies:

	<u>Market Share</u>
Hewlett Packard	28%
Cambridge Instruments	25
Marquette Electronics	24
The Burdick Corporation	16
Others	7

Figure 2

Projected Sales Volume of Single Channel
vs. 3-Channel EKG Equipment



<u>Three-channel EKG</u>		<u>Single channel EKG</u>	
<u>YEAR</u>	<u>\$000</u>	<u>YEAR</u>	<u>\$000</u>
1979	25,900	1979	6,800
1981	28,200	1981	7,100
1983	28,200	1983	6,600
1985	30,100	1985	6,000
1987	31,300	1987	5,000
1989	32,600	1989	3,500

Echocardiograph

The total 1979 U.S. sales volume for echocardiograph equipment was \$20 million. Of this total, M-mode echocardiograph units accounted for \$7 million, and 2-dimensional echocardiograph units accounted for \$13 million. Projected short-term growth rate for echocardiograph equipment is 18-20% in constant dollars.

Sales projections for the two different types of echocardiograph equipment are shown in Figure 3. The 2-dimensional units are expected to show a very substantial sales increase, while the sales volume of the M-mode units is expected to show no growth as the trend toward preference for 2-dimensional units increases.

Echocardiograph equipment projections are relatively volatile. This equipment has been developed and marketed only within the past two decades. Because echocardiograph tests are able to detect cardiac anomalies before symptoms become obvious, this equipment is claimed by its supporters to be a breakthrough in diagnostics. Currently, echocardiograph is in an early stage of development and there is room in technological features, interpretation of results, and cost. Computer interelectrocardiograph of echocardiogram results is in its early stages of development. Most electrocardiograph equipment includes echocardiograph traces.

In 1979, the following major competitors shared in the \$7 million sales volume for M-mode echocardiograph equipment:

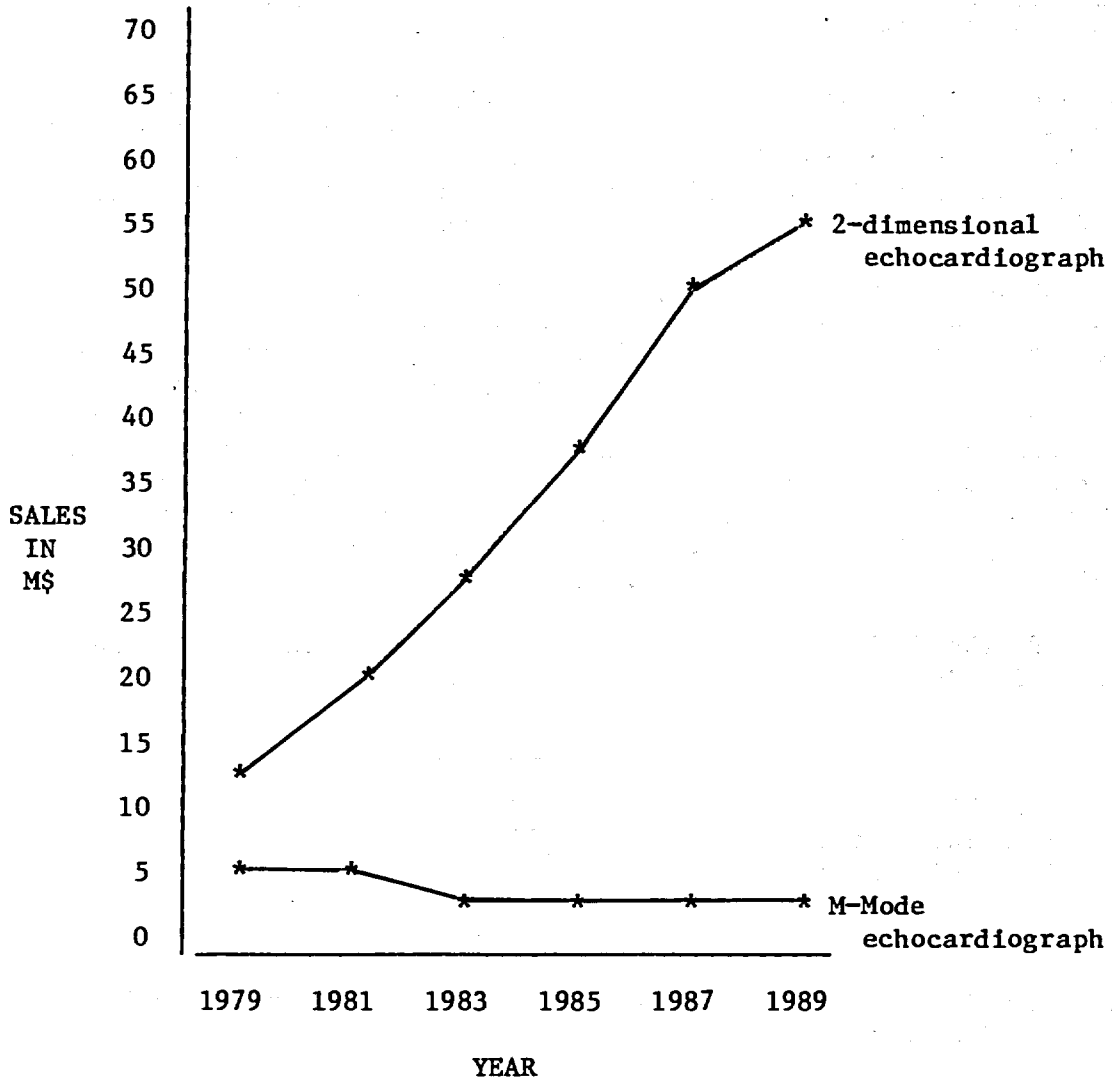
	<u>Market Share</u>
Smithkline Instruments	29%
IREX International	23
Advanced Technology Labs	11
Hoffrel Instruments	9
Others	29

The \$13 million in 1979 sales of 2-dimensional echocardiographic units was shared among:

Advanced Technology Labs	41%
Smithkline Instruments	17
Picker Corporation	13
Varian Associates	12
Hoffrel Instruments	3
IREX International	1
Others	13

Figure 3

Projected Sales Volumes of M-Mode vs.
2-Dimensional Echocardiograph Equipment



2-dimensional echocardiograph

YEAR	\$000
1979	13,000
1981	20,400
1983	29,900
1985	41,200
1987	54,200
1989	59,800

M-mode echocardiograph

YEAR	\$000
1979	7,000
1981	7,400
1983	6,800
1985	6,200
1987	5,800
1989	5,700

Stress Testing Equipment

The total 1979 U.S. sales volume for stress testing equipment was \$5.8 million. Figure 1 shows a graphical representation of the projected volume of sales for this equipment. The data points in Figure 1 indicate that stress testing equipment sales are expected to increase to \$17.9 million by 1983, an increase of more than 30% relative to 1979. Projected short-term growth rate for stress testing equipment is 55-65% in constant dollars.

Stress testing equipment is packaged in various ways, ranging from a simple EKG unit to a fully integrated system. Most packages include some combination of exercise equipment (e.g., treadmill), EKG unit, and a monitor. Most EKG suppliers offer complete stress testing systems.

The substantial increase in stress testing equipment sales will be due primarily to a very large increase in the number of tests given with this equipment. The number of these tests is expected to increase from 2 million annually in 1979 to 16 million in 1989.

In 1979, the following major competitors shared in the \$5.8 million sales volume for stress testing equipment:

	<u>Market Share</u>
Quinton Instrument Company	55%
Cambridge Instrument Company	14
The Burdick Corporation	10
Hewlett Packard	9
Others	12

Diagnostic Computer Systems

The total 1979 U.S. sales volume for diagnostic computer systems was \$14.3 million. Figure 1 shows a graphical representation of the projected volume of sales for these systems. The graph indicates that these systems are expected to experience very high sales growth. Projected short-term growth rate for diagnostic computer systems is 17-19% in constant dollars.

Currently diagnostic computer systems are used primarily for interpretation of EKG results. Use of these systems for interpretation of echocardiograph results is in the early stages of development, but is showing rapid acceptance. Sales volume forecasts, then, are based primarily on sales of systems for EKG interpretation in the first half of the 1980s and primarily on sales of systems for echocardiogram interpretation in the latter half of the decade.

Users of diagnostic computer systems have several purchase options. A user can purchase an in-house dedicated system, a program for use in the hospital's main frame computer, or a contract for service from a bureau or other hospital.

One of the major variables in this market is the quality of software. It is expected that this software will increase the number of systems sold.

In 1979 the following competitors shared in the \$14.3 million sales volume of computer systems for the diagnosis of electrocardiograph results:

	<u>Market Share</u>
Hewlett Packard	63%
Marquette Electronics	21
Telemed Corp.	9

SPECIFIC MARKET DATA

This section summarizes the results of a survey of 40 hospitals selected in Eastern Pennsylvania, Virginia, Maryland, Washington, D.C., Delaware, and South Jersey. These hospitals included about an equal number of small (less than 400 beds) and large hospitals.

The contact person in each hospital was the director of purchasing/materials management who was selected as a respondent only if he/she indicated involvement in the purchase of cardiac products.

The Buying Process

Information about the cardiac equipment buying process is divided into three topics:

1. The hospital personnel participating in the buying process and their specific roles.
2. The hospital resource allocation committee.
3. The hospital's relationship with the Health System Agency.

Respondents were asked to indicate which hospital personnel were involved at each stage of the buying process for cardiac equipment and supplies.

In summary, the most active participants in each stage are perceived to be:

<u>Stage</u>	<u>Most Active Participants</u>
Request Supplies	Chief of Lab
Set Specifications	Chief of Lab, Radiology Department
Seek Information	Chief of Lab, Purchasing Agent, Rad. Dept.
Set Criteria	Chief of Lab, Purch. Agt., Rad. Dept.
Evaluate Suppliers	Chief of Lab, Rad. Dept.
Set Budget	Administrative Committee
Negotiate w/ Suppliers	Purchasing Agent
Make Purchase Decision	Administrative Committee, Chief of Lab, Rad. Dept.
Postpurchase Evaluation	Chief of Lab, Rad. Dept.

Purchase Pattern of Cardiac Equipment

The predominant purchase pattern of cardiac equipment is one in which purchases are made directly from the manufacturer. Less than 10% of the respondents purchase solely from distributors. The U.S. Supplier segment hospitals tend to buy from distributors more and manufacturers less. Hospital purchasing groups are used by the Price/Quality and Quality segments, but not by the U.S. Supplier segment.

Major suppliers for all cardiac equipment are Hewlett Packard, Marquette, and Avionics. More than 40 companies were mentioned. U.S. Supplier hospitals tend to use Marquette more and Hewlett Packard less than other segments.

About two-thirds of the respondents indicated that their hospitals had increased spending on cardiac equipment in the past two years, with an average dollar increase of 35%. The percentage of hospitals claiming increased spending was highest in the Price/Quality segment and lowest in the U.S. Supplier segment. In terms of estimated percent of dollar increase, the Price/Quality segment estimated a 40% increase in dollar spending over the past two years, while the U.S. Supplier segment estimated a 20% increase.

The average (median) amount spent on cardiac supplies in the last year was:

All cardiac equipment	\$130,000
Single-Channel EKG equipment	\$ 31,500
Echocardiogram equipment	\$ 38,600
Stress testing equipment	\$ 36,600
Diagnostic cardiac equipment (patient monitoring)	\$ 33,000
Bedside (stand alone) micro- processor controlled patient monitoring equipment	\$ 18,900
Microprocessor controlled patient monitoring equipment systems	\$111,000

Two-thirds of the hospitals expect the amount spent on cardiac equipment to increase within the next year, and 15% expect it to decrease. The percentage of hospitals expecting increased spending on cardiac supplies is highest in the U.S. Supplier segment and lowest in the Price/Quality segment. U.S. Supplier hospitals expect a 53% increase in dollar spending next year, while the other two benefit segments expect only a 22-23% dollar increase.

Purchase Pattern by Type of Equipment

Purchase patterns differ by type of cardiac equipment, and these differences are reflected in the following tables. For example, about 70% of EKG purchases are made direct from the manufacturer, while the percentage corresponding to other types of equipment are: echocardiogram (51%), radio telemetry monitoring equipment (46%), patient monitoring equipment (49%). In addition, the percentage of respondents expecting increases in next year's dollar purchase volume varies by product category: echocardiogram (57%), EKG (55%), patient monitoring equipment (53%), radio telemetry monitoring equipment (39%).

Purchase Pattern: Total Sample

Primary method of purchasing cardiac equipment

Direct from manufacturer	48.8%
From a single distributor	4.9%
From a number of distributors	4.9%
Direct and from distributors	29.3%
Hospital purchasing group	14.6%

Of those who buy from both manufacturer and distributor:

Average % purchased from manufacturers	62.5%
Average % purchased from distributors	17.7%

Major Suppliers

Hewlett Packard	62.5%
Marquette	12.5%
Avionics	12.5%
Quinton	10.0%
Honeywell	7.5%
Cambridge	7.5%
Edwards Lab	5.0%
Graphic Control	5.0%
Squibb	5.0%
General Electric	5.0%
Dyagram American Optical	5.0%
Philips Med	5.0%
Abbott	2.5%
Technicon	2.5%
SKF	2.5%
API	2.5%
Serano	2.5%
General Med	2.5%

Purchase Pattern: Total Sample (cont'd)

Major Suppliers

ICR	2.5%
NDM Co.	2.5%
International Med	2.5%
Advanced Tech	2.5%
Space Lab	2.5%
Elecath	2.5%
Data Scope	2.5%
Irex 81	2.5%
Medisonics	2.5%
Advanced Tech	2.5%
Varian	2.5%
Stems Xray	2.5%
Other	27.5%

Primary method of purchasing
electrocardiogram equipment

Direct from manufacturer	68.3%
From a single distributor	12.2%
From a number of distributors	2.4%
Direct and from distributors	7.3%
Hospital purchasing group	7.3%

Of those who buy from both manufacturer and distributor:

Average % purchased from manufacturers	40.2%
Average % purchased from distributors	46.7%

Major Suppliers

Hewlett Packard	71.1%
Cambridge	18.4%
Graphic Control	5.3%
Technicon	2.6%
SKF	2.6%
General Med	2.6%
Marquette	2.6%
Space Lab	2.6%
Data Scope	2.6%
Edwards Lab	2.6%
Squibb	2.6%
Dyagram American Optical	2.6%
Honeywell	2.6%
Other	13.2%

Purchase Pattern: Total Sample (cont'd)

Primary method of purchasing
echocardiogram equipment

Direct from manufacturer	51.2%
From single distributor	9.8%
From a number of distributors	2.4%
Direct and from distributors	7.3%
Hospital purchasing group	7.3%

Of those who buy from both manufacturer and distributor:

Average % purchased from manufacturers	50.0%
Average % purchased from distributors	50.0%

Major Suppliers

SKF	25.0%
Irex 81	25.0%
Varian	21.4%
ATL	21.4%
Scientific Prod	7.1%
Hewlett Packard	3.6%
Dolby Scientific	3.6%
Advanced Tech	3.6%
Keystone	3.6%
Cormetics	3.6%
Sonic Ade	3.6%
General Electric	3.6%
Cambridge	3.6%
Medisonics	3.6%
Narco Diagnostics	3.6%
Siemens Xray	3.6%
Other	32.1%

Primary method of purchasing
radio telemetry monitoring equipment

Direct from manufacturer	46.3%
From a single distributor	14.6%
From a number of distributors	4.9%
Direct and from distributors	2.4%
Hospital purchasing group	4.9%

Of those who buy from both manufacturer and distributor:

Average % purchased from manufacturers	50.0%
Average % purchased from distributors	50.0%

Purchase Pattern: Total Sample (cont'd)

Major Suppliers

Hewlett Packard	34.5%
Avionics	13.8%
Marquette	10.3%
Abbott	6.9%
Graphic Control	6.9%
General Electric	6.9%
Honeywell	6.9%
General Scientifics	3.4%
Dyagram American Optical	3.4%
Other	27.6%

Primary method of purchasing diagnostic cardiac equipment

Direct from manufacturer	48.8%
From a single distributor	22.0%
From a number of distributors	7.3%
Direct and from distributors	4.9%
Hospital purchasing group	4.9%

Of those who buy from both manufacturer and distributor:

Average % purchased from manufacturers	52.2%
Average % purchased from distributors	63.3%

Major Suppliers

Hewlett Packard	38.5%
General Electric	10.3%
Honeywell	7.7%
Abbott	5.1%
Edwards Lab	5.1%
Graphic Control	5.1%
Cardio Data	5.1%
Technicon	2.6%
General Med	2.6%
Marquette	2.6%
ICR	2.6%
Avionics	2.6%
Space Lab	2.6%
Life Pak	2.6%
Irex 81	2.6%
Quinton	2.6%
Dyagram American Optical	2.6%
Other	28.2%

Purchase Pattern: Total Sample (cont'd)

Primary method of purchasing
stand-alone (bedside) microprocessor
controlled patient monitoring equipment:

Direct from manufacturer	34.1%
From a single distributor	9.8%
From a number of distributors	0.0%
Direct and from distributors	2.4%
Hospital purchasing group	2.4%

Of those who buy from both manufacturing and distributor:

Average % purchased from manufacturers	50.0%
Average % purchased from distributors	50.0%

Major Suppliers

Hewlett Packard	52.4%
Dyagram American Optical	19.0%
General Electric	9.5%
Marquette	4.8%
Space Lab	4.8%
Edwards Lab	4.8%
Tektronix	4.8%
Other	23.8%

Primary method of purchasing
microprocessor controlled
patient monitoring systems:

Direct from manufacturer	31.7%
From a single distributor	9.8%
From a number of distributors	0.0%
Direct and from distributors	2.4%
Hospital purchasing group	4.9%

Of those who buy from both manufacturer and distributor:

Average % purchased from manufacturers	0.0%
Average % purchased from distributors	0.0%

Major Suppliers

Hewlett Packard	57.1%
Dyagram American Optical	9.5%

Purchase Pattern: Total Sample (cont'd)

Major Suppliers

BMC	4.8%
General Medical	4.8%
Avionics	4.8%
Irex 81	4.8%
General Electric	4.8%
Tektronix	4.8%
Other	33.3%

CRITERIA USED IN PURCHASE DECISIONS

In the aggregate, respondents indicated that the following criteria were most important in their purchases of cardiac equipment:

	<u>Relative Importance</u>
Enhances quality of care	31%
Cost savings	19%
Involvement of medical staff	13%
Enhances hospital's image	13%

Percent of Total Surveyed

Things that would simplify
and improve purchase
operations:

Specialized items/one distributor instead of shopping around	2.6%
Next day delivery/faster delivery	5.3
Back orders by mfr/supply and demand can't be met/shortage of material	2.6
High prices not in budget/inadequate funds	13.2
Red tape/paperwork/too many people/lack of communication	34.2
Not at this time/have enough our ok/meets our needs	10.5
More samples, info, photos left for evaluation/replace or rent if equipment do	15.8
Educated sales approach/expertise/explain product/don't be pushy	5.3
If product new, improved, tested better, deal, prices is competitive	7.9
Good service, supply of parts local	5.3
Improved relations between sales vendors, staff, credit purchaser	21.1
Other	7.9
None/no/don't know	7.9

	<u>Percent of Total Surveyed</u>
<u>Percent who face other major problems that if solved, would help them improve their purchasing operations</u>	13.2%
Q: <u>"What could simplify and improve your purchase operations?"</u>	
Improve inventory/accounting system	13.2%
Delivery and price protection/consistency	10.5
Red tape/paperwork/too many people/lack of communication	31.6
More samples/info/photos left for evaluation/replace or rent if equipment down	10.5
Educated sales approach/expertise/explain product/don't be pushy	13.2
If product new, improved, tested better/deal/prices/is competitive	10.5
Improved relations between sales vendors staff credit purchase	21.1
<u>Things that would simplify and improve purchase operations:</u>	
Red tape/paperwork/too many people/lack of communication	34.2
More samples, info, photos left for evaluation/replace or rent if equipment do	15.8
Improved relations between sales vendors, staff, credit purchaser	21.1

Percent of Total Surveyed

Advice to new manufacturers
that would improve their
chances of selling cardiac
equipment

Specialized items/one distributor	4.9%
Have several local distributors	2.4
Next day delivery/faster delivery	7.3
Delivery time from vendor/ delays/takes too long/ delivery charges	2.4
Not at this time/have enough/ours ok/meets our needs	2.4
Poor quality/durability/ lack of consistency/ poor wrapping	2.4
More samples, info, photos left for evaluation/replace or rent if equipment do	48.8
Educated sales approach/ expertise/explain product/ don't be pushy	31.7
If product is equal, then price, delivery, stock, service, reputation	2.4
If product is equal, then price, delivery, stock service, reputation	34.1
Good service/supply of parts local	26.8
Improved relations between sales vendors, staff, credit purchaser	34.1
Other	7.3
None/no/don't know	4.9

	<u>Percent of Total Surveyed</u>
<u>Percent whose advice would be different if not U.S. firm:</u>	10.5%
<u>Ways it would be different:</u>	
Good inventory availability/standard	22.2%
Have several local distributors	55.6
Next day delivery/faster delivery	22.2
Poor quality/durability/lack of consistency/poor wrapping	11.1
Good service/supply of parts local	11.1
Improved relations between sales vendors, staff, credit purchase	11.1

Percent of Total Surveyed

Advice to new manufacturers that would
improve their chances of selling
cardiac equipment

More samples, info, photos left for evaluation/replace or rent if equipment do	48.8
Educated sales approach/experience/ explain product/don't be pushy	31.7
If product new, improved, tested better, deal, prices, is competitive	34.1
Good service/supply of parts local	26.8
Improved relations between sales vendors, staff, credit purchaser	34.1
<u>Percent whose advice would be different if not U.S. firm:</u>	10.5%
<u>Ways it would be different:</u>	
Good inventory availability/standard	22.2%
Have several local distributors	55.6
Next day delivery/faster delivery	22.2

Percent of Total Surveyed

Attitudinal Statements
Most frequently selected

Canadian quality as good as U.S.	17.1
Prefer local firms	41.5
Prefer U.S. firms	41.5
Prefer known distributors	56.1
European quality as good as U.S.	14.6
Japanese quality as good as U.S.	12.2
Prefer group buying	24.4
Canadian firms not reliable as U.S.	4.9
Japanese firms not reliable as U.S.	7.3
Satisfied with current suppliers	73.2

Percent of Total Surveyed

Attitudinal Statements

Top Two Selections

Hospital is most innovative	29.3%
Decision making highly centralized	34.1
Among last to buy new products	4.9
Among first to buy new products	12.2
Administration and physicians at odds	24.4
Canadian quality as good as U.S.	17.1
Experimenting with new suppliers too risky	14.6
Prefer known distributors	56.1
Lowest priced supplier is choice	14.6
Prefer local firms	41.5
Prefer U.S. firms	41.5
Getting funds is difficult	46.3
Hospital in terrible financial shape	9.8
Politics more important	14.6
Japanese quality as good as U.S.	12.2

Percent of Total Surveyed

Attitudinal Statements
Top Two Selections

European quality as good as U.S.	14.6
Prefer group buying	24.4
More cost conscious in near future	63.4
Priorities not well defined	12.2
Status quo hospital	17.1
Disagreement on future directions	9.8
Close relationships among physicians	46.3
Change and innovation stifled	17.1
Certification of needs of major obstacle	34.1
Canadian firms not reliable as U.S.	4.9
Japanese firms not reliable as U.S.	7.3
Satisfied with current suppliers	73.2

DISTRIBUTORS

Purpose

The major purpose of this section is to provide information that will assist Canadian manufacturers of hospital and medical supplies in marketing their products through existing U.S. distributors. Three specific types of information are presented:

1. the structure of the distribution market, including purchase issues, selling issues, and distributors' attitudes;
2. the decision-making process that distributors use when considering whether or not to accept new products; and
3. a description of distributors' attitudes toward and experience with foreign products.

Approach

In order to gather information about the distributors' activities in the hospital/medical supply field, in-depth personal interviews were conducted with eight distributors. Because of the lack of existing systematic knowledge about distributor activities in this field, each interview was structured to cover a very broad range of topic areas. As a result, the average length of each interview was one and a half hours.

The distributors showed a strong reluctance to be interviewed. The eight completed interviews were the result of an initial screening process in which 140 distributors were screened. One hundred didn't fit the requirements of the study because they were totally retail. Of the 40 who met the requirements, eight agreed to be interviewed. This reluctance may be attributable to an existing crisis in the field of hospital/medical supplies. Distributors are currently awaiting the outcome of a law suit against American Hospital Supply, a major national distributor. The litigation was brought against American Hospital Supply by a group of independent distributors, charging AHS with monopolistic policies. Distributors feel that the outcome of this litigation will have a far-reaching impact on the future distribution of medical supplies, and many are reluctant to discuss their business practices until the suit is settled. Only one national distributor consented to participate in this study.

This section provides some initial background information about the U.S. distribution of hospital/medical products. Due to the limited number of respondents, results cannot be generalized too widely.

Results

A. Structure of the Distributors' Market

Major Product Lines

- All of the respondents indicated that two or three leading products accounted for half or more of their total sales volume. Typical groupings of leading products were: sutures/syringes/gloves, and IV catheters/sutures. The national distributor, American Hospital Supply (AHS), indicated that trays (25%) and gowns (25%) together accounted for half of their sales volume.

1980 Sales Volume and Accounts

- 1980 sales volume ranged from \$800,000 for the smallest distributor to \$33 million for the largest.
- Account structures for the distributors fell into three patterns. The national supplies (AHS) sells only to hospitals. The local distributors specializing in catheters, sutures, and syringes sell about 75% to hospitals, 15% to nursing homes, and 10% to doctors.
- Significantly, only two respondents reported any business with buying groups, and this business accounted for less than 5% of sales volume in both cases.
- The distributors reported that they employ differing numbers of salespeople, ranging from one for the smallest distributor to 22 for the largest.

Self-manufacturing and Self-branding

- Only the national distributor (AHS) reported that they engaged in manufacture of the products that they distribute. They estimated that fully 80% of their product distribution was manufactured by themselves.
- On the other hand, almost all distributors are now involved in putting their own brand names on products from outside manufacturers. The local distributors engage in a small degree of self-branding (from 5-20% of sales), but the practice is growing.

Competitive Structure of Distribution Market

- Almost all of the respondents, including the national distributor, perceived their major competitors to be other local distributors. This suggests the hypothesis that the nationals

may not be competing head to head in all product/geographic areas. The only respondent who believed his major competitor to be a national distributor was a local distributor of disposable diapers and oxygen who believed that the AHS was his major competition.

- Most respondents perceived their second major source of competition to be national distributors. Interestingly, AHS, the only national, ranked manufacturers' reps as their second major source of competition (after locals) and other nationals as their third.
- All of the distributors believe that they are operating within very competitive markets. When they were asked what competitive edge they would like to develop if they had more resources, almost all who answered gave responses related to the manufacturing end. The most frequently mentioned were: (1) more control of the manufacturing process, (2) product exclusivity with a manufacturer, and (3) more technical knowledge from the manufacturer.

National vs. Local Distributors

- As indicated in the introduction, there is currently a legal conflict between national distributors and the locals who perceive them as engaging in monopolistic practices. Manifestations of the conflict appeared in differing responses to attitude questions. The respondent from the national distributors (AHS) strongly agreed that by 1990 almost all distribution will be through nationals; the locals strongly disagreed with this scenario. AHS also agreed that the most important function that a distributor provides for a manufacturer is collection. Again, most of the locals strongly disagreed.

Distributors' Perceptions of Major Problems

- In the opinion of the respondents, the major problems facing distributors today revolve around financing and delivery. Financial problems are expressed in terms of difficulty in borrowing money to buy inventory. One distributor stated that the industry range for accounts receivable was 60-90 days, with an industry wide average of 48 days. On the other hand, respondents reported that the majority of payments to manufacturers were made on a 10 day, 2% discount basis. (The financially strongest distributor, AHS, reported paying manufactures on an immediate payment, 5% discount basis for 60% of its business.)

- In addition to financial issues, distributors named delivery issues as a major source of problems. Distributors complained that they frequently had to wait an excessive amount of time for shipments from manufacturers, and that the manufacturers have a "bad attitude" about this problem. One distributor complained that sometimes deliveries were so delayed that the expiration date on the merchandise had passed. Most distributors said that the manufacturer pays freight charges on minimum dollar volume shipments. Three distributors expressed the belief that manufacturers should pay freight charges under all circumstances.

B. Process and Criteria for Adopting New Products

Current Brand Practices

- The majority of distributors reported that they typically carry about three brands within each of the major product lines. Most (5 of the 8) said that they would prefer to reduce the number of brands, two preferred maintaining the same level, and only one preferred to add brands. Those who preferred to reduce the number of brands reasoned that they would like to be able to reduce the complexity of their inventories and that they would like to be able to focus and intensify their marketing efforts by limiting the number of brands. The national distributor (AHS) preferred to maintain its current number of brands.

Practices and Attitudes About Adding/Deleting Manufacturers

- Most distributors reported that they had added from 10 to 20 manufacturers within the last two years and that they had dropped from 0 to 20. AHS reported adding five manufacturers within the past six months and only dropping one manufacturer within the past two years.
- Most distributors said that they were eager to add new manufacturers, but specified restrictions. Specifically, they indicated an interest in adding a new manufacturer if an innovative product was involved, or if the buyer (hospital) requested the manufacturer. AHS said they were willing to add new manufacturers in order to provide more variety for customers.

Process for Adding New Products

- Among the local distributors, decisions about adding new products are made at a high level, usually involving the owner or president, in conjunction perhaps with a salesperson.

- The criteria for adoption of new products vary among distributors. One distributor indicated that he subjects the proposed new product to a pragmatic test. He distributes product literature among his accounts, and if interest is shown, he stocks the product.
- In general, the most frequently mentioned criteria for product adoption are anticipated demand, profit margin, and availability.
- The national distributor (AHS) makes new product adoption decisions at Chicago headquarters with a team composed of a product manager and a marketing manager. The AHS respondent didn't specify their decision criteria.

C. Foreign Manufacturers

Current Relationships

- All local distributors indicated that some percentage of their products was made by foreign manufacturers, with the percentage ranging from 5-30%. Countries most frequently mentioned were Japan, Germany, and Pakistan. Products most frequently mentioned were stethoscopes and blood pressure kits (Japan) and scissors (Pakistan). Overall, distributors reported that their experiences with foreign manufacturers had been favourable.
- None of the local distributors were dealing with Canadian products and indicated that they had not been approached by any Canadian firms. On the other hand, five of the seven local distributors are currently selling Japanese products, mostly stethoscopes and blood pressure kits. In most of these firms, Japanese products account for only 2-5% of total sales, but one distributor reports 30-40% of sales are Japanese products.

Experience with and Interest in Foreign Products

- Although all of the local distributors reported favourable experiences with their foreign products, two said they were not interested in distributing more foreign products. Obstacles mentioned were long delivery times and "U.S. economy." Respondents indicating interest in more foreign products stated that their interest was conditional on a variety of factors:
 1. if exclusivity could be obtained;
 2. if the product was not available in the U.S.; and
 3. if foreign prices were cheaper than U.S. prices.

- Local distributors reported having little or no experience with Canadian products, but all but one indicated an interest in distributing Canadian products if price, quality, and profitability criteria were met.
- All but one distributor reported having favourable experience with distribution of Japanese products. Most saw as an advantage the fact that Japanese products could be ordered from the firm's U.S. distributor, instead of having to deal directly with Japanese manufacturers. As with Canadian products, all but one of the local distributors indicated an interest in distributing more Japanese products if price, quality, and profitability criteria were met.

Images of Foreign Products

- Most distributors felt there was no difference between the image of U.S. products and foreign products. One felt that U.S. products had a better image for quality while another felt that U.S. products were getting a bad image for quality.
- Respondents did not perceive any differences between images of Canadian and U.S. products. In terms of the image of Japanese products, three respondents felt that Japan had developed a strong image for high quality, two felt the Japanese image connoted low quality, and two saw no difference from the U.S. image.

Responses from the National Distributor (AHS)

- The AHS respondent indicated some confusion about AHS's relations with foreign manufacturers. He reported that AHS distributes OB pads manufactured by a firm located in Canada, but owned by AHS. He indicated that AHS is not interested in adding foreign manufacturers (excluding Canadian ones) because they "support the American economy" and "own their own distributorships in England, France, Japan, and Canada." It is likely that this respondent is not well-informed as to AHS's relationships with foreign manufacturers, since he does not work at corporate headquarters in Chicago, where such information is more likely to be discussed.

Degree of Interest in Adding Canadian Manufacturers

- When asked how interested they would be in adding Canadian manufacturers "if their products were competitive with those of U.S. firms," six of the eight respondents said they probably would, and two said they probably would not. Of these two, one was the AHS respondent (see above) and the other had a generalized resistance to product duplication (e.g. he indicated he would handle a Canadian product if it were very innovative).

Conclusions

1. The U.S. distributor environment for medical products is currently one of conservatism. Due to the U.S. economy and to the unresolved legal conflict between national distributors and local distributors, the distributors are showing a very low level of risk-taking behaviour.
2. The trend among local distributors is one of constriction rather than expansion. These distributors are trying to reduce the number of brands per product category, and express reluctance to add new products.
3. The locals say they are reducing the number of brands per product because they are trying to simplify inventory and to focus their marketing activities on a reduced number of brands. Their reluctance to add new products does have some important exceptions. They are willing to adopt a new product if: (1) it is innovative, (2) they can get an exclusive distribution agreement, and/or (3) hospitals specifically request it.
4. The distributors interviewed showed no specific resistance to adding foreign products, either Canadian (with whom they've had little experience) or Japanese (with whom they have had mostly favourable experience). Predictably, distributors specified that these foreign products must show some specific, significant advantage in profitability or quality. Although there was no specific resistance to adding Canadian or Japanese products, their adoption was conditional on the same factors that distributors said were necessary for adoption of any new product: (1) innovativeness and (2) exclusivity. Because of a highly competitive distribution environment, there is a preoccupation with exclusivity as a competitive weapon.
5. The missing piece of information concerns the future of the national distributors. Only one national distributor, American Hospital Supply, was willing to participate. The outcome of the unresolved legal dispute between local distributors and American Hospital Supply will have a profound influence on the future of the distribution market. While the case is awaiting resolution, most planning and risk-taking by distributors is at a very low level.

APPENDIX A

Health Systems Agency

A Health Systems Agency (HSA) is a private, nonprofit corporation designated under Federal and State law for health planning and resources development. There are more than 200 HSAs in the United States, each serving several counties within a state. For example, the HSA of Southeastern Pennsylvania serves five counties consisting of 3.8 million people.

HSAs are funded by federal, state and local government monies. Under provisions of the National Health Planning and Resources Development Act of 1974 (Public Law 93-641), each HSA's responsibilities include:

1. Evaluation of proposals for new services for expanded health facilities, equipment, and services requiring a capital expenditure of \$100,000 or more.
2. Review of the appropriateness of all institutional health services in the area.
3. Annual recommendations to the state of projects and priorities for the modernization, construction and conversion of medical facilities.

The HSAs have been a source of controversy because they have opposed hospital development and acquisition projects which the hospitals have strongly desired (e.g., CAT scanners). The Reagan Administration is expected to eliminate Federal funding for all HSAs, and many are expected to close by the end of 1981.

APPENDIX B

Utilization, Personnel and Finances in States

Source: Hospital Statistics, American Hospital Association, 1980.

	<u># of hospitals</u>	<u># of beds</u>	<u>Occupancy(%)</u>	<u>Surgical Operations</u>	<u>Full-Time Equivalent Physicians & Dentists</u>
Delaware	15	4,220	83.9	55,597	204
Washington, D.C.	17	8,563	85.1	104,303	894
Maryland	84	25,174	81.8	366,493	1,556
New Jersey	135	43,743	82.3	561,317	1,970
Pennsylvania	314	86,360	79.3	1,155,280	3,368
Virginia	<u>134</u>	<u>31,859</u>	<u>77.5</u>	<u>439,259</u>	<u>962</u>
	699	199,920		2,682,249	8,954

Data is from 1979 questionnaire. Physicians and Dentists are those employed by hospitals.

Comparable Figures from 5 Years Before (1974 Questionnaire)

	<u># of hospitals</u>	<u># of beds</u>	<u>Occupancy(%)</u>	<u>Surgical Operations</u>	<u>Full-Time Equivalent Physicians & Dentists</u>
Delaware	14	4,710	87.0	53,478	138
Washington, D.C.	20	11,512	82.1	136,184	1,373
Maryland	81	29,666	82.0	298,982	1,695
New Jersey	145	49,908	80.3	518,238	1,726
Pennsylvania	321	101,614	80.0	1,055,867	3,636
Virginia	<u>128</u>	<u>35,724</u>	<u>84.3</u>	<u>383,985</u>	<u>1,068</u>
	709	233,134		2,446,734	9,636

APPENDIX C

Canadian Manufacturers' Perceptions of Obstacles to Exporting
to the United States

Canadian manufacturers perceived the following as obstacles to entry in to the U.S.: lack of financial resources, too much red tape in U.S. and Canada, lack of management capabilities, lack of capability to offer after-sales service, U.S. tariffs and duties, distribution problems, and lack of unique products.

Manufacturers' perceptions differed as a function of their experience with exporting to the U.S. Experienced exporters (those whose exports to the U.S. account for more than 30% of total sales) perceive the major obstacles to be mostly external (red tape, tariffs, duties). Less experienced exporters (exports to U.S. accounting for less than 30% of sales) perceived obstacles to be mostly internal (lack of financial resources, lack of after-sales service capability, high manufacturing costs, lack of management capability. Nonexporters to the U.S. perceive the major obstacles as being too much red tape in the U.S., lack of contacts with U.S. distributors, higher manufacturing costs in Canada, and lack of contacts with U.S. clients.

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