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DEVELOPMENT OF A VASCULAR DIAGNOSTICS CENTER AT
DOWNTOWN HOSPITAL: A FEASIBILITY STUDY

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Business Administration

by
Roland Jason Fargo
March 2007

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Approved by:

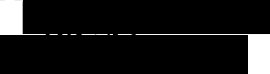


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ABSTRACT

Current market factors are creating a strategic opportunity for Downtown Hospital to significantly increase its market position in vascular services. To capitalize on the opportunity, Downtown Hospital must redesign its vascular program to qualitatively, aggressively and cost-effectively manage the clinical, operational and financial impact of this service line. The executive team at Downtown Hospital is considering the development of a full service vascular diagnostics center.

The key assumption made in this report is that Downtown Hospital's Executive Team has endorsed the vascular diagnostics center concept and views this service as a foundation for growing vascular services. With that assumption in mind, it becomes important that a clear vision for the proposed vascular lab be articulated and coordinated with the very crucial workings of the Hospital's interventional and surgical services. The vascular lab clearly responds to a market demand as repeated over and over again through numerous physician interviews. The ambulatory strategy, of which the vascular lab is a key component, is being aggressively implemented by most of the large healthcare systems in the country.

Industry analysis demonstrates that there is little competition in the local market for quality vascular diagnostic services. In addition, there is a great opportunity to differentiate Downtown Hospital's services from its competitors.

Market analysis demonstrates a substantial demand for these services as well. Both physicians and potential patients feel underserved regarding access to services and quality of services performed.

The financial analysis demonstrates this endeavor has potential to be self-sustaining and contribute a modest amount to the bottom line of Downtown Hospital. Of more significance is the potential to create significant downstream revenue by feeding vascular intervention and surgical procedures.

Based on the above findings, it is recommended that the Executive Committee approve the development of this venture and proceed with the presentation to the Governing Board for approval and the development of a detailed business plan.

TABLE OF CONTENTS

ABSTRACT	iii
LIST OF TABLES	vii
LIST OF FIGURES	viii
CHAPTER ONE: INTRODUCTION	1
Statement of Need	2
Statement of Purpose	3
Methods and Procedures	3
Scope and Limitations	3
Summary	4
CHAPTER TWO: PRODUCT/SERVICE ANALYSIS	
Scope of Services	5
Departmental Staffing	6
Diagnostic Imaging Equipment	6
Venue	7
Summary	7
CHAPTER THREE: INDUSTRY ANALYSIS	
Industry Demographics	8
Differentiation of Services	10
Barriers to Entry	13
Summary	14
CHAPTER FOUR: MARKET ANALYSIS	
Demographics	16
Customer Profiles	18
Summary	21

CHAPTER FIVE: FINANCIAL ANALYSIS

Requested Resources for Center Development	22
Financial Sustainability	24
Potential Downstream Revenue Impact	25
Summary	26

CHAPTER SIX: STRATEGIC DEVELOPMENT AND TIMELINE

Appointment of a Medical Director of the Vascular Diagnostics Center	27
Consulting Services	28
Summary	31

APPENDIX A: ZIP CODES FOR PRIMARY SERVICE AREA	32
APPENDIX B: DEMOGRAPHICS FOR PRIMARY SERVICE AREA	34
APPENDIX C: SECONDARY SERVICE AREA ZIP CODES	37
APPENDIX D: SECONDARY SERVICE AREA DEMOGRAPHICS	39
APPENDIX E: VASCULAR DIAGNOSTICS CENTER BUDGET	42
APPENDIX F: VASCULAR LAB PROFORMA	44
REFERENCES	46

LIST OF TABLES

Table 1. Potential Downstream Revenue from Screenings	26
Table 2. Developmental Plan Timeline	30

LIST OF FIGURES

Figure 1. Primary and Secondary Service Areas 16

CHAPTER ONE
INTRODUCTION

Downtown Hospital began as a small outpatient clinic founded in 1913 with the purpose of providing clinical training for medical students. Since these early beginnings, Downtown Hospital has continued to carry out the mission of Christian caring. It is one of the region's leading nonprofit hospitals, providing clinically excellent, affordable health care with compassion, respect, and spiritual nurturing. In the past 92 years, Downtown Hospital has provided medical care – regardless of race, creed, sex, national origin, religion, disability, age, or ability to pay – in keeping with our mission, and maintains a commitment to provide uncompromising comprehensive care despite the fact that more than half of its patients are Medi-Cal patients and a large number are indigent and uninsured.

Downtown Hospital serves more than 100,000 patient visits annually, providing inpatient, outpatient, emergency, and diagnostic services. Care ranges from general medical and general surgery to highly advanced and specialized care including open-heart surgery, cutting-edge cancer treatments, and neo-natal intensive

care for premature and critically ill newborns. The current areas of specialty include obstetrics and gynecology, pediatrics, cardiac care, diabetes, emergency services, rehabilitation, cancer services, orthopedics, and behavioral medicine.

Strategic growth initiatives launched in 2001 have been successful. Overall, discharges grew 13 percent over a four year period. However, growth on its own is not enough to sustain profitability at Downtown Hospital, and in 2004, the strategic focus shifted to profitable growth in targeted specialty services - namely orthopedics, cardiac, and vascular services.

Statement of Need

The vascular diagnostic laboratory at Downtown Hospital has functioned for many years as a small, perfunctory physician-owned diagnostic service. Recently, vascular services have become a strategic priority for the hospital. Downtown Hospital is interested in the development of a sophisticated full-service vascular diagnostic laboratory which can be more widely utilized by the hospital's medical staff to provide high quality patient care and diagnostics as well as increase the revenue stream of the service.

Statement of Purpose

Pursuing this developmental interest, the hospital is requesting a feasibility study focused on creating a vascular diagnostics laboratory. This feasibility analysis will answer the following questions:

1. What is the scope of services offered?
2. Are there customers and a market of sufficient size to make the concept viable?
3. Do the capital requirements to start, based on estimates of revenues and expenses, make sense?
4. Can an appropriate start-up team be assembled to make the business happen? When will the project be operational?

Methods and Procedures

Primary and secondary data was gathered and analyzed from many sources, including hospital database systems, OSHPD discharge data, U.S. Census Statistics, customer surveys, vendor proposals, and vascular organizations.

Scope and Limitations

The scope of this analysis encompasses the feasibility of establishing a vascular diagnostics laboratory at Downtown Hospital. This study does not address reorganization or restructuring of other areas in

the vascular continuum, such as interventions and surgeries. In addition, the accuracy of the data, and subsequent recommendations based on this data, are subject to the quality assurance processes established by the proprietary sources to ensure integrity of the data. Also, the hospital recognizes that some information gathered during this analysis is confidential, and will not be documented in this report.

Summary

Pending the Executive Committee's approval, it is the hospital's intention to proceed with a presentation of findings to the Governing Board and Corporate Board to obtain approval to move forward with the development of a formal business plan.

This chapter has attempted to provide an overview of the hospital and its strategic development, document the need and purpose of this study, and identify methodology and limitations of the study.

CHAPTER TWO

PRODUCT/SERVICE ANALYSIS

Scope of Services

A sophisticated full-service vascular diagnostic laboratory is essential to the contemporary management of vascular disease. Downtown Hospital's service area currently does not have a single fully-accredited vascular lab, and filling this void is a major priority for the hospital. In addition, only two partially-accredited labs exist in the primary service area.

Core non-invasive vascular diagnostic studies and competencies include:

- Carotid Duplex Scans
- Peripheral Arterial Duplex Exams
- Peripheral Venous Duplex Exams
- Renal, Mesenteric, Aortic Duplex Exams
- Hemodialysis Graft Duplex Evaluations
- Peripheral Arterial and Venous Physiologic Exams
- 24-Hour Ambulatory Blood Pressure Monitoring
- Transcutaneous O₂ Measurements

Departmental Staffing

Departmental staffing under the proposed program will include:

- Vascular Center Medical Assistant 1FTE
- Vascular Tech 1FTE
- Vascular Program Coordinator 1 FTE
- Vascular Center Technical Director (Lead Technician) 1FTE
- Vascular Center Clerical Support 1FTE

Diagnostic Imaging Equipment

The following imaging equipment will be required to establish the Vascular Diagnostics Center.

• Ultrasound (Philips ATL) (2)	\$245,813
• Arterial Non-imaging (Parks Medical)	\$32,995
• TcPO2 (Radiometer America)	\$29,750
• Portable Ultrasound (Sonosite)	\$25,000
• Portable Doppler (2)	\$3,000
• Dell Desktop Workstation (2)	\$4,000
• Atrium Report Database	<u>\$8,000</u>
• Total Estimated Cost	\$348,558

Venue

To accommodate the necessary equipment and projected growth, 250 sq. ft. is initially required, with the ability to expand to 750 sq. ft. Eventual space needs will include a reception area for patient check-in and waiting, up to three examination rooms, an office for the technical director, and one or two additional work areas for additional technicians and physicians. Further evaluation of space is necessary to determine if this venue can be strategically located next to radiology and cardiac diagnostic services.

Summary

This chapter has attempted to provide an overview of the scope of services and major considerations in developing a vascular diagnostic laboratory at Downtown Hospital. It will establish a context for information included in the following chapters.

CHAPTER THREE
INDUSTRY ANALYSIS

Industry Demographics

Within the healthcare spectrum, vascular services are significantly underdeveloped in comparison to similar specialty services, such as cardiac and orthopedic services. As a result, service delivery of vascular diagnostics varies greatly, from physician office-based services to full service vascular diagnostic centers. Equally variant is the quality of the study and its respective interpretation. In recognized vascular diagnostic centers, the accuracy and reliability of diagnostic services are predicated on the expertise of skilled technologists who perform the studies and are knowledgeable in all aspects of arterial and venous ultrasound imaging and physiologic testing. The special skill set required to perform vascular testing is acknowledged by the American Registry of Diagnostic Medical Sonographers (ARDMS) in the form of a unique certification, Registered Vascular Technologist (RVT). Certification requires the ultrasound technologist to acquire specific training in vascular testing, vascular physics, and ultrasound physical principles, and then

successfully pass the ARDMS examination. The community standard for vascular laboratories in Los Angeles includes RVT certification for technologists.

Currently, the vascular lab at Downtown Hospital is a small, physician-owned service. It is staffed by a single technologist who is not RVT certified. Night and weekend services are provided by the physician through a contract service.

Within our service area, only two formal hospital-based diagnostic programs have been identified. Both have a mix of staff with and without RVT credentials, and have both received ICAVL accreditation in select disciplines.

Based on vascular laboratory statistics from five hospitals in the Los Angeles area, a conservative estimate for a 350-bed facility such as Downtown Hospital would be a volume of at least 2,000 studies in the first year, with approximately 60% inpatient / 40% outpatient mix. In three to five years, the hospital envisions reaching a volume of approximately 4,000-5,000 vascular lab studies as referring physicians become better aware of and acquainted with the available services and the benefits to their patients. The hospital's strategy for fostering this

growth relies heavily upon differentiating its services from those in the local marketplace.

Differentiation of Services

To gain support from its customers and its community partners, the center must offer more than quality clinical care. Downtown Hospital should develop and leverage three distinct areas; accreditation, community service, and research.

ICAVL (Intersocietal Commission for the Accreditation of Vascular Laboratories) accreditation is a key factor in developing a strong diagnostics program. The ICAVL was founded in 1990 to protect patient safety and encourage quality through the development of minimal standards. The standards are currently used by vascular labs as a guideline for quality care goals. Recently, payers have begun encouraging adherence to these standards by restricting payment to only those labs holding ICAVL accreditation. Even with these restrictions, few labs have attained this accreditation.

Community service will primarily be based on providing access to diagnosis and care of vascular conditions through complementary screening events. This

initiative will also serve to fulfill an important need in Marketing.

Internally, Downtown Hospital's Senior Services department has a staff of five counselors whose primary purpose is to develop and maintain relationships with seniors in our community. This department identifies seniors through two main avenues: the hospital's senior program, which has a membership list of 13,000, and monthly discharge data provided by the Decision Support department. Services are communicated to the senior community through flyers, direct calls, the hospital's web site, and special events. Several community partners help to facilitate this outreach, including community senior centers, adult day care centers, and organizations such as the Mexican American Opportunity Foundation (MAOF), and the International Institute of Los Angeles.

Several venues will accommodate seniors who choose to participate in vascular screening, including selected Downtown Hospital campus locations and key off-campus community sites and physicians' offices.

Screenings will be provided free-of-charge, and will serve to identify potential vascular disease. Results will be given to the patient with instructions to follow up with his or her primary care physician to interpret and

discuss results and potential treatment options. Our screening staff will also follow up with the primary care physician directly, and will inform them of the services available in our vascular lab to further diagnose vascular disease and discuss referral options if necessary. If a senior does not have a PCP, our screening staff will work with Senior Services to provide them with physician options.

The development and operations of the Vascular Diagnostics Center will support clinical research as well. The screening of the elderly population from the collective service areas presents a unique opportunity to prospectively evaluate and follow the incidence of peripheral vascular disease, aneurysmal disease, and carotid disease in an ethnically diverse study group. Medical reports have documented the importance of population screening, and the results of these population studies (e.g. the Framingham study) have assisted in understanding the incidence of vascular disease in adults. However, these reports studied only homogenous population groups. The research goals will be to conduct a comprehensive screening of ethnically diverse patients from the Downtown Hospital service areas, accurately

analyze the data, and report the findings in the medical literature.

Screening will consist of studies from the vascular lab for carotid disease, abdominal aortic aneurysmal disease, and peripheral vascular disease, and serum markers for vascular disease will be drawn during the initial consultation. Serum markers will include the following: complete blood count (CBC) total cholesterol, high-density lipoprotein (HDL), low-density lipoprotein (LDL), triglycerides, C-Reactive protein, Interleukin 6, monocytes, fibrinogen, homocysteine, vitamin B12, cotinine, and matrix metalloprotease 9.

Barriers to Entry

Some seniors are locked into HMO relationships that disempower them from making positive, community-based medical treatment decisions, particularly to choose a doctor in their own community. Downtown Hospital social workers are trained to find an ethical, non-coercive way to break seniors loose from these situations and avail them to better opportunities.

Like all facilities that offer preventive services, the Vascular Diagnostics Center will confront fiscal pressures that encourage it to pursue income-generating

clinical work at the expense of preventive, community-service-associated work. The program hopes to counteract that pressure by a) creating a vascular center with capacity that exceeds necessity; building community service into the Vascular Center's business plan through this program; and establishing a powerful precedent for community service through this program and other pro-bono screening and diagnostic services that fosters philanthropic and grant support.

The target population consists of low-income, low-education seniors with great ethnic and cultural diversity, posing extraordinary challenges ranging from logistical to cultural. Downtown Hospital has a strong track record of working with these populations in a cost-effective manner.

Summary

This chapter has attempted to provide an orientation to the vascular diagnostics industry and Downtown Hospital's competitors, document the need for additional services in the community, outline important differentiating factors that will contribute to the success of Downtown Hospital's lab, and identify any potential barriers to success. As noted in the chapter

above, very few quality diagnostic services are available to the community. Furthermore, there is great potential to enhance how the community is educated regarding vascular disease and the services available. Although some barriers to success exist, these are not unique to vascular diagnostic services, and Downtown Hospital has had a long history of successfully addressing these barriers.

CHAPTER FOUR
MARKET ANALYSIS

Demographics

Figure 1 below shows Downtown Hospital's primary service area (PSA) in yellow, which is defined as the area from which 50 percent of inpatient discharges originate. This area has been designated as a Medically Underserved Area (MUA) by the U.S. Department of Health Services. The communities of the PSA represent some of the most disadvantaged in the region -- Boyle Heights, Lincoln Heights, Montecito Heights, El Sereno, Chinatown, Little Tokyo, Monterey Park, and Alhambra.

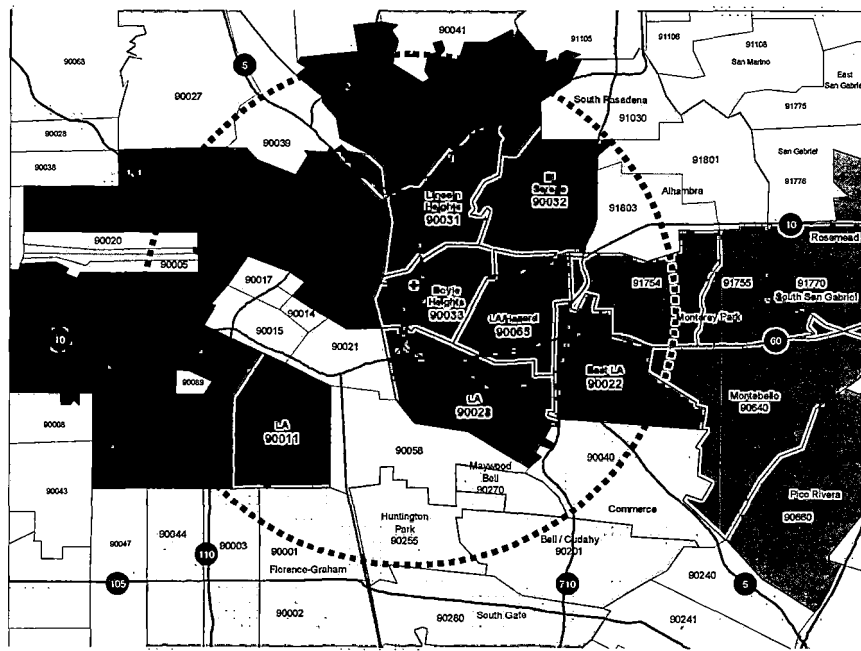


Figure 1. Primary and Secondary Service Areas

The 2000 U.S. Census reported the total population of the Primary Service Area as 407,805, a number projected to grow 6 percent by 2005 with the most significant growth in the Hispanic population – 15.2 percent over the five-year timeframe. It is estimated that the Hispanic population of California will double by 2025. Locally, the population in Los Angeles County is growing at a rate of 1.3 percent per year.

With a population that is 88.8 percent Hispanic, the area of Boyle Heights/East Los Angeles has one of the largest Hispanic populations in the United States. It has one of the lowest median household incomes (\$27,079) in the state of California and one of the highest unemployment rates in the city (11.4% of residents over the age of 16 are unemployed). Nearly half (48.6%) of the households in the service area have an annual income less than \$25,000, and surveys estimate that 40 percent live in poverty.

On a larger scale, Downtown Hospital's market is densely populated with more than 2 million people living within 5 miles of the medical center. The market is ethnically homogeneous – 70.7 percent of the population living in the two market areas (PSA/SSA) is Hispanic.

The population can be characterized as low income with approximately 62 percent of the households in the two market areas having an annual income of \$25,000 or less. This population relies heavily on government-sponsored health care with 54.4 percent eligible for Medi-Cal.

Downtown Hospital's secondary service area (SSA) is defined as the area where an additional 30 percent of inpatient discharges originate. The SSA is comprised of 28 zip codes in 5 market areas surrounding the medical center and are shown in orange, red, pink, green and light green in Figure 1. The total population of the SSA is 1,515,398. Further information regarding both the primary and secondary service areas can be found in Appendices A - D.

Customer Profiles

Two key customer groups were identified; physicians and seniors in the community. Several physicians were interviewed in this process who are currently active at Downtown Hospital and several community physicians who are not currently active, but nevertheless potential users of the Hospital. These physicians represent disciplines in Family Practice, Internal Medicine, Critical Care Medicine, General Surgery, and Vascular Surgery. Unanimously, three key issues were communicated regarding

the current services they access. First, the current diagnostic quality is below average for the basic core studies, and special studies such as Transcranial Imaging or Vein Mapping is not available. Second, the service delivery is poor, in that it may take one to three days before a physician order is completed. Third, the basic services are offered in several of the physician's offices, and they would like to participate in the revenue stream of the new Vascular Diagnostic Center, if possible.

Based on our interviews with these physicians, the planned vascular lab clearly addresses a market need. The need is not only clinical, but also economic from the physicians' perspective in that the efficiency of such an outpatient-focused environment will enable greater case volumes, and allow the physicians to benefit from the financial impact associated with faster throughput and participation in the interpretive panel necessary for lab operations. It is important that Downtown Hospital proactively and strategically respond to the market demand and the community need.

Community seniors were interviewed during this process as well, to determine their understanding of vascular disease and associated risk factors.

A typical person at risk for vascular disease would be a senior (over 65) with a combination of the following risk factors:

- A family history of heart attack or stroke
- High blood pressure (hypertension)
- High blood cholesterol levels
- Heart disease, especially an irregular heartbeat called atrial fibrillation
- Diabetes
- Stress
- Cigarette smoking
- Obesity
- Physical inactivity
- Transient ischemic attacks (TIA's). These are brief attacks that can cause neurologic deficits which resolve over a short period of time
- Prior heart attack or stroke

Of the ten seniors we interviewed, only two seniors were familiar with peripheral vascular disease and its associated risk factors, and only one recalled being screened for the disease. Eight of the ten, however, knew someone who had suffered a stroke or had a leg amputated.

Summary

Our findings demonstrated a clear deficit in the local market's knowledge of vascular disease and treatment options available. It is highly recommended that Downtown Hospital address this market need through a community awareness and screening campaign.

This chapter has attempted to provide an orientation to the market demographics and profile our two key customers; patients and referring physicians. As documented, there is a considerable demand for vascular diagnostic services based on market size, physician dissatisfaction with current services available, and the community's knowledge deficit regarding vascular disease.

CHAPTER FIVE
FINANCIAL ANALYSIS

Requested Resources for Center Development

Requested funds begin with the staff positions covered at the Vascular Diagnostics Center:, a Vascular program coordinator (1), a Vascular Center lead tech (2), a Vascular Technician (4), and a Vascular Medical Assistant (3). These clinical personnel will form the base of operations for inpatient, outpatient, and intra-operative diagnostics processes, as well as community screenings.

Non-personnel costs are as follows: staff education and training (9) is necessary to ensure excellent technical skill in performing screenings and diagnostics, as well as enhance communication and compassion skills. Supplies (10) may include clinical items used in the screening process such as gauze, ultrasound gel, alcohol wipes, gowns, etc. and non-clinical items such as clipboards, pens, and screening forms. Educational materials represent printed patient information. These expenses represent printing costs only. The design fees, copywriting fees, translation fees, and photo fees are captured in the Marketing line item. The atrium report

database (11) is a clinical tool used in the diagnostics lab to log patient information. Another essential component to the success of the Vascular Diagnostics Center is the Medical Director (12) as described earlier in this report. Health fair and screening attendees will receive pre- and post-surveys to establish baseline data to gauge the efficacy of the events and track conversion rates - i.e., how many event attendees were converted to patients at Downtown Hospital. The costs for survey development, printing, and translation are projected at \$6,000. Health Fairs (13) will take place twice a year; each will cost, including educational and outreach activities, \$3,000 (\$6,000 Y1 + \$6,000 Y2). Marketing and printed materials (14), a crucial element of this start-up program, are budgeted for \$40,000 in the first year and \$5,000 in the second year. These costs include design development, translation fees, copywriting fees, photo fees, and printing fees for all non-patient education pieces. The bulk of this expense is incurred in the first year. As it is essential to track our participants collectively, a database system will be necessary. Costs for database design/implementation (16) will include programming and interface fees, as well as user training.

Downtown Hospital will outlay funds for equipment (11, 21-26) for the Vascular Center, namely an Ultrasound (Philips ATL), TcPO2 (Radiometer Amer.), ABI Doppler (Parks Med.), and Portable ABI Dopplers, totaling a \$348,558 cost. Proposed consulting costs (17) will total \$45,000; and travel, dues, and subscriptions (18) will total \$4,800. In addition, the hospital expects to incur approximately \$5,000 in extra expenses over two years for expanded senior transportation (19) by its vans and other means. For a full illustration of the Vascular Diagnostic Center budget, please refer to Appendix E.

Downtown Hospital will be institutionalizing the costs of the Vascular Center's operations, and is expected to be self-sustaining by the end of the third year. Most of the marketing activities will be completed by the end of the funding period as well; and all ongoing outreach activities, such as the Senior Health Fairs, will continue to be run and financed by Downtown Hospital and its Charitable Foundation.

Financial Sustainability

The proposed Vascular Center will be fully sustainable by year 3 through a focus on controlled growth and cost containment. The proforma listed as Appendix F

illustrates the five-year financial impact of the vascular diagnostics center on vascular program operations. To summarize, this venture is expected to break even in year 3 and contribute \$145,263 to the bottom line by year 5.

Potential Downstream Revenue Impact

In addition to contributing positively to the vascular program, the screening program has the potential to drive significant downstream contributions through interventions and surgeries, as shown in the following table (Table 1). Volume assumptions are based on estimates from the American Vascular Association as follows: 1,000 screenings should yield 100 procedures in the same year and 158 procedures in the following seven years. Financial assumptions are based on Downtown Hospital's AS400 financial information and listed at \$3,781 contribution per case.

Table 1. Potential Downstream Revenue from Screenings

	Year 1	Year 2	Year 3	Year 4	Year 5
	100	100	100	100	100
		23	23	23	23
			23	23	23
				23	23
					23
Total Volume	100	123	146	169	192
Contribution	\$ 378,100	\$ 465,063	\$ 552,026	\$ 638,989	\$ 725,952

Summary

This chapter has attempted to identify the financial impact of the projected resources needed to develop the vascular diagnostics lab, analyze the financial sustainability of the project, and predict the future financial downstream revenue that will be generated by procedures resulting from the diagnostic efforts. As documented above, this initiative is financially sustainable and should contribute significantly through procedural volume.

CHAPTER SIX

STRATEGIC DEVELOPMENT AND TIMELINE

In addition to addressing the core development areas listed in Chapter 2, Downtown Hospital will develop the vascular laboratory through the following key strategic activities.

Appointment of a Medical Director of the Vascular Diagnostics Center

The Medical Director, a vascular trained physician with RVT credentials, will oversee medical operations. In this capacity, his or her responsibilities will include:

- Establish quality assurance standards
- Establish criteria for interpretation of service studies, with modifications made based on continuous quality assurance
- Conduct quarterly vascular laboratory quality assurance meetings with faculty and vascular lab staff to review and discuss clinical outcomes from vascular laboratory studies
- Assist with the development and implementation of policies, procedures, and protocols for the vascular laboratory

- Assist with the organization and staffing of the vascular laboratory
- Establish criteria for patient treatment and care and conduct follow-up to ensure the implementation and suitability of such criteria
- Ensure vascular laboratory is adequately equipped and staffed and is capable of performing requested studies and tests in a timely and efficient manner

The proposed funding will include the compensation for the medical director, who will be a contractor during the initial two years.

Consulting Services

To ensure the efficacy of the vascular center, Downtown Hospital will contract with a specialized consulting group for consulting services. Specifically, these services will ensure: consistency in service and patient care; quality of services provided by the vascular laboratory; utilization of vascular laboratory diagnostic services; sustainability and profitability; and positive name recognition.

Consultants will engage in three separate modules:

- Module 1 - Vascular Laboratory Functionality and Processes. Assess existing processes and operational structures and provide recommendations for improvement; review, develop, and implement policies and procedures; develop and implement necessary worksheets; develop and implement patient process measures as necessary; work with existing vascular laboratory staff to assist in training and implementation of items above.
- Module 2 - Quality Assurance. Review quality assurance program assessing the accuracy of the vascular testing performed and develop and implement necessary measures; develop and implement necessary forms and policies specific to quality assurance; assist in the facilitation of quarterly meetings for the first year post-implementation.
- Module 3 - Accreditation. Initiate and complete the initial ICAVL accreditation process for accreditation in the following areas as determined by Downtown Hospital:

- Organization
- Visceral
- Venous
- Lower Extremity
- Cerebrovascular

The development and implementation of policies and procedures, worksheets, and quality assurance is expected to be a six-month process, and accreditation should take an additional 12 months following the implementation of Modules 1 and 2. The table below (Table 2) outlines projected completion dates for key activities.

Table 2. Developmental Plan Timeline

Key Activity	Target Date
Appoint Vascular Center Medical Director	Mar 2007
Contract with consultant for Development Modules 1, 2, 3	Mar 2007
Vascular Center Development Module 1: Vascular Lab Functionality and Processes	Mar 2007–Sept 2007
Vascular Center Development Module 2: Quality Assurance	Mar 2007–Sept 2007
Hire Vascular Diagnostics Center Clinical and Clerical Support	Apr 2007
Finalize equipment needs and obtain purchase orders	Apr 2007
Identify available space and buildout needs	Apr 2007

Key Activity	Target Date
Establish database and data collection protocol	Apr 2007
Develop Vascular Health Workshop content and handout materials	Apr 2007-Jun 2007
Establish protocol for Vascular Health Workshop outreach, including physical space needs	Apr 2007-May 2007
Develop referral protocols for diagnosis and treatment of vascular conditions, with referral network for patients requiring follow-up care	Apr 2007
Develop and implement internal and external communication plan regarding new services	Apr 2007
Identify vascular lab reading panel and orient panel to policies and procedures	Apr 2007
Complete venue renovation and install equipment	May 2007
Complete hospital staff orientation education	May 2007
Begin operations	May 2007

Summary

This chapter has attempted to identify key initiatives important to successful implementation of the vascular lab, and document a tentative timeline to project completion. Medical oversight and consulting services will be important in developing this lab and beginning operations by May, 2007.

APPENDIX A
ZIP CODES FOR PRIMARY SERVICE AREA

Zip Code	City
90011	Los Angeles
90022	East Los Angeles
90023	Los Angeles
90031	Lincoln Heights
90032	El Sereno
90033 (Home Zip Code)	Boyle Heights
90063	Los Angeles

Source: OSHPD Discharge Data

APPENDIX B
DEMOGRAPHICS FOR PRIMARY SERVICE AREA

Demographics

Male	50.4%
Female	49.6%
Pediatrics (age 0-15)	30%
65+	6.8%
Median Age	26.7 years
Hispanic	88.8%
Asian/Pacific Islander	5.2%
Born in the United States	48.7%
Naturalized Citizen	12.7%
Average Household Size	4.06 people
Average Family Size	4.36 people
Households with Individuals 65+	23.0%

Economics

Median Household Income	\$27,079
Households with Income Less than \$25,000	48.6%
Households with Income More than \$75,000	8.9%
Below the Poverty Line	31.8%
Not in the Labor Force (over age 16)	48.6%
Total Medi-Cal Eligibles	187,965
Medi-Cal Managed Care Enrollment	54.4%
Hispanic	86.0%
Asian	3.5%

Education

Less than 9th Grade Education (population age 25+)	44.1%
High School Graduate (population age 25+)	16.0%
Associate/Bachelor Degrees (population age 25+)	6.1%

Languages

English Only	15.0%
Spanish	80.0%
Spanish/English less than "very well"	49.3%
Asian	4.5%
Asian/English less than "very well"	3.1%

Source: OSHPD Discharge Data and 2000 U.S. Census Statistics

APPENDIX C
SECONDARY SERVICE AREA ZIP CODES

Area (map color)	Zip Code	City	2003 Discharges
North Market (orange)	90042	Highland Park	492
	90065	Glassel Park	365
East Market (pink)	90640	Montebello	254
	90660	Pico Rivera	92
	91754	Monterey Park	85
	91755	Monterey Park	25
	91770	South San Gabriel	69
South Market (light green)	90001	Los Angeles	249
	90002	Los Angeles	123
	90003	Los Angeles	248
	90040	Commerce	49
	90044	Los Angeles	182
	90201	Bell/Cudahy	376
	90255	Huntington Park	363
	90270	Maywood Bell	168
	90280	South Gate	183
	Southwest Market (dark green)	90006	Los Angeles
90007		Los Angeles	103
90016		Los Angeles	74
90018		Los Angeles	159
90019		Los Angeles	102
90037		Los Angeles	241
Chinatown Market (red)	90004	Oakwood/L.A.	119
	90012	Chinatown	175
	90013	Los Angeles	114
	90026	Echo Park/Silverlake	215
	90029	Los Angeles	118
	90057	Los Angeles	163

Source: OSHPD Discharge Data

APPENDIX D
SECONDARY SERVICE AREA DEMOGRAPHICS

Demographics

Male	49.9%
Female	49.9%
Pediatrics (age 0-15)	37.2%
65+	7.9%
Median Age	29.9 years
Hispanic	65.8%
Asian/Pacific Islander	12.6%
Born in the United States	52.2%
Naturalized Citizen	14.6%
Average Household Size	3.32 people
Average Family Size	3.81 people
Households with Individuals 65+	23.0%

Economics

Median Household Income	\$30,037
Households with Income Less than \$25,000	66.2%
Households with Income More than \$75,000	17.0%
Below the Poverty Line	27.7%
Not in the Labor Force (over age 16)	46.2%
Total Medi-Cal Eligibles	579,448
Medi-Cal Managed Care Enrollment	54.5%
Hispanic	70.0%
Asian	7.5%

Education

Less than 9th Grade Education (population age 25+)	30.0%
High School Graduate (population age 25+)	24.0%
Associate/Bachelor Degrees (population age 25+)	12.4%

Languages

English Only	27.0%
Spanish	61.0%
Spanish/English less than “very well”	36.6%
Asian	10.5%
Asian/English less than “very well”	6.7%

Source: OSHPD Discharge Data and 2000 U.S. Census Statistics

APPENDIX E
VASCULAR DIAGNOSTICS CENTER BUDGET

Line Item		Organization Budget		
Line Item #	Line Item Description	Downtown Hospital		
		Y1	Y2	Total
	<u>Personnel</u>			
1	Vascular Program Coordinator 1 FTE	\$80,000	\$82,400	\$162,400
2	Vascular Center Tech Dir. (Lead Tech) 1FTE	\$72,800	\$74,984	\$147,784
3	Vascular Center Medical Assistant 1FTE	\$37,440	\$38,563	\$76,003
4	Vascular Tech 1FTE	\$52,000	\$53,560	\$105,560
5	Vascular Center Clerical Support 1FTE	\$29,120	\$29,994	\$59,114
6	Vascular Night and Weekend Coverage	\$22,500	\$29,250	\$51,750
7	Benefits & Taxes @ 31%	\$91,097	\$95,713	\$186,809
8	Total Personnel	\$384,957	\$404,464	\$789,420
	<u>Non-Personnel/Supplies</u>			
9	Staff Education and Training	\$5,000	\$5,000	\$10,000
10	Supplies/Educational Materials	\$12,000	\$15,000	\$27,000
11	Atrium Report Database	\$8,000		\$8,000
12	Medical Director	\$30,000	\$30,000	\$60,000
13	Health Fairs	\$6,000	\$6,000	\$12,000
14	Marketing and Printed Materials	\$40,000	\$5,000	\$45,000
15	Implement Workshops	\$4,000	\$4,000	\$8,000
16	Database design/implementation	\$20,000		\$20,000
17	Vascular Consulting - Start-up	\$45,000		\$45,000
18	Travel, Dues, Subscriptions	\$2,400	\$2,400	\$4,800
19	Transportation	\$2,500	\$2,500	\$5,000
20	Total Non-Personnel/Supplies	\$174,900	\$69,900	\$244,800
	<u>Capital & Equipment</u>			
21	Ultrasound (Philips ATL)	\$161,736	\$84,077	\$245,813
22	TcPO2 (Radiometer Amer.)	\$29,750		\$29,750
23	ABI Doppler (Parks Med.)	\$32,995		\$32,995
24	Portable ABI Doppler (Hokanson (2))	\$3,000		\$3,000
25	Portable Ultrasound (Sonosite)	\$25,000		\$25,000
26	Computer	\$4,000		\$4,000
27	Total Capital & Equipment	\$256,481	\$84,077	\$340,558
28	Total - Each year	\$816,338	\$558,441	\$1,374,778

APPENDIX F
VASCULAR LAB PROFORMA

**DOWNTOWN HOSPITAL
VASCULAR LAB PROFORMA**

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
a) Studies	2,500	3,250	4,225	5,000	5,500
Revenues	352,500	458,250	595,725	705,000	775,500
b) O/P Net Revenues	176,250	229,125	297,863	352,500	387,750
Medical Director		30,000	30,000	30,000	30,000
Consulting	75,000				
c) SW&B: Personnel	\$280,157	\$296,520	305,415	314,578	324,015
Night & weekend coverage	22,500	29,250	38,025	45,000	49,500
d) Physician S&I Fees	-	-	-	-	-
Working Capital	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>
Total Operating Expenses	<u>387,657</u>	<u>365,770</u>	<u>383,440</u>	<u>399,578</u>	<u>413,515</u>
Gross Margin	(211,407)	(136,645)	(85,578)	(47,078)	(25,765)
e) Depreciation Expense:					
Equipment	69,712	69,712	69,712	69,712	69,712
Net Earnings	<u>(281,118)</u>	<u>(206,356)</u>	<u>(155,290)</u>	<u>(116,789)</u>	<u>(95,477)</u>
f) Savings from SMMG PSA	109,427	142,255	184,932	218,854	240,739
Contribution	(171,691)	(64,101)	29,642	102,065	145,263

Assumptions:

- a) Study volume assumes 30% growth and based on a mix of 1,950 imaging studies and 550 Doppler studies per 2,500 cases
- b) Revenues are generated on **outpatient** business only at a technical fee reimbursement of \$141 per study and outpatient business represents 50% of total business
- c) Salaries, Wages, Benefits assume a 30% benefit rate, a 3% annual increase, and the following rates:
 Technical Director: 1 FTE @ \$35/hr
 Vascular Technologist: 1/2 FTE in year 2, 1 FTE years 3 - 5 @ \$25/hr
 Receptionist: 1/2 FTE @ \$15/hr
 Night and weekend coverage estimated at 10% of volume and \$90/case
- d) Physician study and interpretation fees assume physician bills professional component for all non-imaging and imaging studies
- e) Depreciation expense is based on the following:
 Equipment Cost: \$348,558 depreciated over 5 years
- f) Savings from SMMG based on actual payments in 2004 and increased in direct proportion to volume growth @ 30% per year

Source: Downtown Hospital AS400 Data

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ICAVL | The Intersocietal Commission For The Accreditation Of ...The Intersocietal Commission for the Accreditation of Vascular Laboratories (ICAVL) provides a voluntary method for laboratories to demonstrate the level of ...
<http://www.icavl.org/> - 44k - Cached

Society for Vascular Ultrasound. <http://www.svunet.org/>