Creating a Business Plan and Projecting Revenue for a Cosmetic Laser Center in a Community Hospital

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Abstract

In the United States today, cosmetic laser surgery is rapidly increasing as a popular method for physicians to treat aesthetic skin conditions. Patients desiring treatment are now able to choose more simple, non-invasive solutions such as laser technology to accomplish this. In early 1999, the hospital chief executive officer at Sound Shore Medical Center, a not-for-profit community hospital located in southern Westchester County, New York, began gathering information from several staff physicians and patients regarding the rapid rise in cosmetic laser surgery. A preliminary study of Sound Shore staff physicians indicated there would be an interest in using cosmetic lasers, particularly amongst the plastic surgeons dermatologists. Shortly thereafter, the hospital decided to purchase three of the most technologically advanced cosmetic lasers available in today's market. In October of 1999, the researcher was asked to assist in designing and developing a cosmetic laser center during an administrative residency at Sound Shore. This graduate management project discusses the major issues involved in creating a business plan and projecting revenue for a cosmetic laser center within a community hospital. Areas discussed are the budget; breakeven and cash-flow sensitivity analysis; pricing schedule development; hospital privileging criteria; and training and staffing issues. In January of 2000, the first cosmetic laser procedure was performed. As of May 2000, the center is beginning to meet forecasted volume levels.

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1. INTRODUCTION

a. Conditions Which Prompted the Development of a Laser Center.

Sound Shore Medical Center of Westchester (Sound Shore) is a voluntary, not-for-profit community hospital located in New Rochelle, New York. With a total certified bed capacity of 321 acute care beds and 150 skilled nursing facility beds, Sound Shore is the one of the largest private community-based teaching medical centers in Westchester County, New York (Westchester County Department of Planning, 1998).

The number of physicians on the Sound Shore medical staff has increased significantly over the last five years to approximately six hundred (600) medical staff in forty (40) different clinical specialties (Sound Shore Strategic Plan, 1999). In 1997, the hospital changed its name from New Rochelle Hospital Medical Center to Sound Shore Medical Center of Westchester. This change, by direction of the hospital's board of governors, reflected the medical center's increased services, new programs and expanded geographic coverage of southern Westchester and the entire Sound Shore region of Long Island Sound.

During the spring of 1999, the chief executive officer (CEO) at Sound Shore began to gather information from several staff physicians and patients regarding the possibility of

introducing cosmetic laser surgery to this community hospital. As the CEO of one the largest community hospitals in southern Westchester County, understanding the importance of emerging opportunities is paramount to remaining financially viable in today's healthcare industry. At the same time, the hospital must balance its ability to serve the needs of the local community.

Healthcare organizations are under ever-mounting pressures from government, businesses, the public, and each other to control their costs while maintaining or enhancing service. Effective response to these pressures will require doing more with less, and being able to quickly adapt to changes in the environment (Peters, 1994; Senge 1990).

In turn, doing so will require that resources be allocated to their most effective uses, and that they be quickly redeployed in response to information about unexpected and unfavorable outcomes, impending threats, and emerging opportunities (Deloitte & Touche and VHA, 1997).

Sound Shore currently provides healthcare for more than twenty towns, villages and communities in the Sound Shore region of southern Westchester and northern Bronx, New York City (see appendix 1). The communities served by the medical center are extremely diverse. They contain pockets of great wealth as well as poor neighborhoods with difficulty in accessing primary care

(Sound Shore Community Service Plan, 1999).

Income levels in Westchester's towns and municipalities are essentially heterogeneous and represent a wide range of economic groups. Median income for the county as a whole is estimated to be $61,861 for 1996. Westchester ranks second in per capita personal income among counties in New York State, surpassed only by Manhattan (New York County). Among all counties in the United States, Westchester County is the sixth highest and 75% higher than the national average income per capita (Westchester County Department of Planning, 1998).

Based on the 1990 census of the population, the National Planning Data Corporation estimates that approximately 250,000 people live in Sound Shore's fifteen zip code primary service area. An additional 450,000 individuals reside in Sound Shore=s secondary service area which is comprised of six zip codes in Westchester and six in the northern Bronx along the Sound Shore area of the Long Island Sound.

As cited in 2020 Foresight: Population Projections for Westchester County to the Year 2020, the Westchester County Department of Planning is anticipating only a modest population gain for southern Westchester to the end of year 2000. The report projects that the white population in Westchester County will decline over the next two decades. African-American, Asian, Hispanic and other non-white residents, which represented

27% of the population in 1990, are projected to grow to 37% of the County=s residents by the year 2000 and reach 50% by 2020. Non-white residents will continue to be concentrated in southern Westchester.

There are also a significant number of households with growing families and an increasing number of women of childbearing age (Westchester Department of Planning, 1998). This is important since in 1999, 89% of cosmetic procedures were performed on adult females. Available data shows that target markets for cosmetic laser surgery are adults. According to the American Society of Aesthetic Plastic Surgeons (ASAPS), people 18 years of age and younger accounted for less than 4% of the total cosmetic procedures (up less than 1% from 1998). This is all cosmetic procedures and is not limited to laser procedures. Most common among this age group were chemical peels (sometimes recommended for acne-prone skin), laser hair removal and rhinoplasty (nose reshaping)(ASAPS), 2000).

Children, therefore, are not considered part of the target market for cosmetic laser surgery. Surgeons tend not to use lasers on children because they can cause thick scars. For teenagers, lasers are used cautiously, especially in those in the 13- to 15-year-old range. Growth is so rapid at this age that thick or wide scars are more likely to occur (Morgan, 1988).

In May of 1999, at the direction of the CEO, Sound Shore began looking at the feasibility of developing a cosmetic laser center. In October of 1999, the researcher was asked to create a business plan and project revenue - to include physician training and privileging - for the laser center. Preliminary research had been conducted earlier in the year. The decision to purchase the lasers had already been made; delivery was scheduled for November of 1999.

In the fall of 1999, the strategic planning division at Sound Shore published and distributed Sound Shore's Community Service Plan for Year 2000. One of the initiatives identified in the plan was the development of a cosmetic laser center (see appendix 2).

b. Literature review.

In the past, lasers had a relatively limited use in medicine. They were used in surgery to destroy cancerous and precancerous tissue, to remove tissues such as tonsils with much less pain and swelling than with conventional surgery, and to remove tumors which contain many blood vessels that otherwise might be difficult or dangerous to remove (American Society of Laser Medicine and Surgery (ASLMS), 2000).

The earlier lasers such as the C02 and Argon lasers were also used to treat certain skin conditions such as birthmarks (also known as port-wine stains), and to remove tattoos and

warts. These earlier lasers had the disadvantage of leaving more scars after the treatment of certain skin lesions especially if the tissue to be removed extended deeper into the skin, as in many tattoos (ASLMS, 2000).

In fact, the use of cosmetic lasers to treat port-wine stains and other skin-related disorders was discussed as far back as twenty years ago. “The most promising answer to the problem (port-wine stains) may lie in laser-beam technology. A few medical centers are experimenting in this area,” wrote Dr. James J. Reardon back in 1981 (Reardon, McMahon, 1981).

A second generation of lasers was developed for treatment of these superficial skin lesions. Depending on the color and depth of the skin lesion, physicians are now able to select from a number of lasers that differ in the wavelength of light that the laser produces (ASLMS, 2000).

Even more revolutionary and just as promising is the introduction of intense pulsed light (IPL) technology. IPL is a patented, advanced technology developed to treat the widest range of benign conditions from unsightly veins to age and sun spots, rosacea, port-wine stains, and unwanted hair. Unlike conventional lasers that emit a fixed wavelength, IPL devices produce a broad spectrum of light in a range of wavelengths that is adjustable through the use of filters and computer-controlled parameters of energy delivery (ESC Sharplan, 1999).

Essentially, it allows the physician or clinician to customize the characteristics of the light energy to a particular individual's skin type and condition.

When laser light hits brown or red skin discoloration or any type of tattoo pigment, it is selectively absorbed. The rapid absorption of the light energy causes the tattoo ink or the pigmented cells in the skin brown spot to destruct or burst apart. The body's natural filtering system then removes the debris. Because the surrounding normal tissue does not absorb the laser energy, the treated area is less likely to scar (ASLMS, 2000).

Laser treatment for the majority of cosmetic surgery procedures can be performed in a hospital or an office setting; requires no anesthesia; and takes only ten to twenty minutes per treatment. According to most patients, the impact of the laser light hitting the skin produces a sensation similar to the snap of a thin rubber band. After treatment the area may feel similar to a mild sunburn.

There were over 4.6 million cosmetic surgical and non-surgical procedures performed in 1999. There was a 66% increase in the total number of procedures performed between 1998 and 1999. There was a 16% increase in surgical procedures and a 98% increase in non-surgical procedures. In 1999, 89% of cosmetic

procedures were performed on females (compared to 90% in 1998) and 11% on males (compared to 10% in 1998) (ASAPS, 2000).

Laser hair removal was the third most common overall procedure, increasing 340% to 481,978 procedures, and representing 10.5% of all procedures. Laser skin resurfacing was the tenth most common overall procedure, accounting for 133,454 or 2.9% of all procedures. Lastly, laser vein removal was the thirteenth most common overall cosmetic procedure, accounting for 93,517 or 2.0% of all procedures (ASAPS, 2000).

Cosmetic procedures by race or ethnicity (% of total procedures) were as follows: Caucasians, 85%; Hispanics, 6%; African-Americans, 4%; Asian-Americans, 3%; other, 1%. Where cosmetic procedures are performed (% of total procedures): office-based surgical facility, 53%; hospital, 25%; freestanding surgicenter, 21%; other, 1% (ASAPS, 2000).

Currently, more than 86% of cosmetic surgeons are performing laser surgery. According to the American Academy of Cosmetic Surgery (AACS), the most common lasers being used today are the CO2, Ultrapulse and YAG. The top five laser procedures performed by cosmetic surgeons in 1999 were (AACS):

1. Hair Removal
2. Skin Resurfacing
3. Tattoo/Pigment Removal
4. Eyelid Surgery

5. Vascular Lesions

Plastic surgery may become less painful and more effective, increasing its appeal and the social pressure on individuals to get it (Johannes, 1999). Asked by a journalist from the Wall Street Journal (1999) on what the future might hold for cosmetic surgery, Edward Domanskis, a plastic surgeon from Newport Beach, CA thinks that in ten years the technology will be able to shrink tissues in the skin with a laser from the outside.

He's not alone. According to Melanie Grossman (1999), a dermatologist from New York, the future will find us stimulating collagen production under the skin by heating the surface of the skin using lasers. Sam Hamra (1999), a plastic surgeon from Dallas, TX, believes the industry will continue to see better and better lasers for skin resurfacing (WSJ, 1999).

Available literature on cosmetic laser surgery was essentially limited to the clinical application and procedural techniques of laser technology. Although laser technology for medical purposes has been in use for over two decades, cosmetic application is relatively new. In fact, the researcher discovered that most of the available cosmetic laser technology literature considered current in the public library system was already obsolete.

Current cosmetic laser data and information was available on the Internet through two primary sources: professional organizations such as the American Society for Laser Medicine and Surgery (ASLMS) and American Society for Aesthetic Plastic Surgery (ASAPS) and private websites owned by plastic surgeons or dermatologists. The information available through the professional societies provided sufficient data and information on cosmetic laser surgery for the researcher.

One of the more informative websites was ASLMS. The organization appeared to be one of the leading authorities for the cosmetic laser surgery industry. The ASLMS website provided comprehensive information and useful guidelines regarding hospital privileging criteria for physician and nursing staff. In addition, they provided timely information regarding pertinent laser surgery health and safety issues; national practitioner information; and national pricing matrices for cosmetic surgery charges by regional areas.

In February of 2000, the researcher was also afforded the opportunity to review an original business plan used to establish a cosmetic laser studio in New York City. Earlier in the year, the owner provided the researcher with a pricing schedule for the studio. This schedule was helpful in establishing Sound Shore’s pricing schedule in January of 2000. Although their business plan was not used in the establishment

of the laser center at Sound Shore, the information contained in the plan was useful in understanding how the studio's pricing schedule was constructed.

c. Purpose

The purpose of this project was to create a business plan and project revenue for a cosmetic laser center in a community hospital. The major areas of research and development for the business plan were: 1) budget; 2) cash-flow; 3) competitive pricing schedule; 4) hospital privileging criteria; and 5) physician training and staffing.

2. METHODS AND PROCEDURES

This research paper discusses the development of a business plan and revenue projection for a cosmetic laser center. It comprises a qualitative approach to the design and implementation of budgeting, pricing, training, and accounting procedures. The majority of the methodology involved with developing the business plan was field and Internet research. Telephone research was also conducted by calling cosmetic laser studios in the New York metropolitan area (New York, New Jersey and Connecticut).

In April of 1999, ESC Sharplan, a seller of medical systems consisting primarily of cosmetic lasers, was solicited to develop a presentation and projected revenue stream for Sound Shore's senior management. ESC Sharplan develops, manufactures

and markets medical devices utilizing state-of-the-art lasers and intense pulsed light (IPL) technology for non-invasive treatment of varicose veins, hair removal, skin cancer, skin rejuvenation, and other aesthetic applications. The company also markets surgical lasers for a variety of medical applications including ENT, OB/GYN and neurosurgery (www.escmed.com, 2000).

The presentation by ESC Sharplan focused on three specific cosmetic lasers: 1) the EpiTouch Alexandrite, or “Alex”, used for epilation, or hair removal; 2) the PhotoDerm VascuLight, used primarily for vascular and pigmented lesion removal; and 3) the DermaK Dual Wavelength laser, used specifically for tissue ablation, or facial resurfacing.

The presentation and projected revenue stream was subsequently given to Sound Shore’s operations division for further research and development. Table 1 below illustrates ESC Sharplan’s projected first year facility revenue stream for Sound Shore:

Laser	First Qtr	Second Qtr	Third Qtr	Fourth Qtr	Total
VascuLight	$4,500	$6,500	$9,000	$11,000	$31,000
EpiTouch	$5,000	$7,000	$9,000	$10,000	$31,000
DermaK	$3,500	$5,000	$1,000	$3,000	$12,500
Total	$13,000	$18,500	$19,000	$24,000	$74,500

TABLE 1. ESC Sharplan’s Projected Revenue Stream, 1999

Following the April 1999 presentation, enough preliminary interest was generated and the CEO requested that a study of Sound Shore staff physicians be conducted.

In May of 1999, the vice-president of operations in charge of the laser center project developed the questionnaire shown below in Figure 1:

	Yes	No	%
1A. Would you be interested in using the Derma® K Dual Wavelength Laser?			
1B. If yes, would you use the above laser for the following procedures? If so, please note the number of procedures you would anticipate doing on a monthly basis: X Facial resurfacing (total) X Resurfacing for lines X Resurfacing for wrinkles X Other - please list			
2A. Would you be interested in using the EpiTouch Alex7 Hair Removal?			
2B. If yes, would you use the above laser for the following procedures? If so, please note the number of procedures you would anticipate doing on a monthly basis: X Hair removal X Hair removal - bikini lines X Hair removal - legs X Hair removal - backs X Hair removal - other			
3A. Would you be interested in using the PhotoDerm7 VascuLight®Plus?			
3B. If yes, would you use the above laser for the following procedures? If so, please note the number of procedures you would anticipate doing on a monthly basis: X Vascular lesions (including Port Wine stains) X Brown spots (age spots/freckles) X Leg veins X Tattoos X Hair removal X Other - please list			
4. Are you currently referring any of the above cases out? If yes,			

FIGURE 1. Physician Questionnaire

approximately how many per month?			

The questionnaire was presented to eighty-seven (87) Sound Shore staff physicians consisting of plastic surgeons, dermatologists, general surgeons (to include vascular) and gynecologists. Since the lasers being considered were primarily for cosmetic surgery, only staff physicians that could be later privileged for cosmetic laser surgery were included.

The results of the questionnaire indicated there was enough interest in adding cosmetic laser surgery to Sound Shore's list of surgical services already available to its physicians and the surrounding community. The responses to the questionnaire were as follows:

Specialty	# Distributed	# Responded	Response Rate
Plastics	12	7	59%
Dermatology	15	7	47%
Gen Surgery	20	5	25%
Gynecology	40	10	25%
Total	87	29	33%

TABLE 2. Physician Questionnaire Response Rate

Among those who responded to the questionnaire, Table 3 below highlights the types of responses:

	Yes	No	%
1. Would you be interested in using the DermaK Dual Wavelength Laser?	11	16	41%
2. Would you be interested in using the EpiTouch Alex Hair Removal?	15	14	52%
3. Would you be interested in using the PhotoDerm VascuLight Plus?	17	11	61%
4. Are you currently referring any of the above cases out?	8	11	42%

TABLE 3. Physician Questionnaire Response Rate by Use

In September of 1999 the decision was made to move ahead with establishing the laser center. This decision was based upon supporting data regarding current upward trends in cosmetic laser surgery and the physician response to the questionnaire. In October of 1999, Sound Shore purchased three cosmetic lasers from ESC Sharplan through a five-year lease from a commercial lending institution. Shortly thereafter, the operations vice-president who began developing the laser center took a planned leave of absence. The researcher was asked to assist in completing the laser center by developing a business plan and projecting future revenue streams.

In order to establish a budget, a cost center was established with the hospital's accounting department. A pre-existing budget template was used to account for projected expenses on a monthly and annual basis (see appendix 3). To

determine projected expenses and net revenues, a standard cash-flow sensitivity analysis spreadsheet was used (see appendix 6). To establish the criteria for hospital laser privileges, the researcher used recommended guidelines from ASLMS, Sound Shore (*clinical* laser guidelines from 1990) and a laser center operating out of a New Jersey medical center.

3. THE RESULTS

In November of 1999, the three lasers – the EpiTouch Alexandrite, the PhotoDerm VascuLight and the DermaK Dual WaveLength – were delivered to Sound Shore. The researcher assisted ESC Sharplan's field service engineer in assembling the lasers in the center. The engineer gave the researcher a basic tutorial on laser safety and operation of the lasers. Later that month, the area sales manager from ESC's aesthetic division provided an overview and basic laser demonstration to Sound Shore's chief operating officer, medical director, medical department directors and the researcher.

In early December of 1999, the facility portion of the laser center was completed. An ambulatory surgical suite used as an overflow and storage room would serve as the temporary center until renovations were completed on the eighth floor in the summer of 2000. Minor renovations were needed such as painting and the installation of a 250-volt/30-amp outlet for the EpiTouch laser.

In January of 2000, the final draft of the hospital privileging criteria for lasers was approved and established. In that same month, the first cosmetic laser procedure was performed. The first full facial resurfacing was performed in February, and in March several of Sound Shore's staff physicians attended VascuLight workshops on Long Island and in Connecticut. In early April, the researcher briefed the hospital's board of governors on the current status of the laser center.

Physician training is vital to the success of the laser center. In order to be granted privileges, physicians must be trained on the specific lasers they desire to operate in the facility. A not-for-profit community health care organization may deny or discontinue the right of a physician to use its facilities and personnel in the care of patients on either of two grounds. The most common is quality, failure to comply with properly established criteria governing quality of care and good character (Griffith, 1995). In order to allow as many staff physicians an opportunity to receive training, the researcher planned an all day laser workshop at Sound Shore. ESC Sharplan provided the faculty instructor and in April twenty-three (23) physicians received training on all three lasers.

As of May 2000, more than one hundred (100) cosmetic procedures have been performed in the laser center. Currently, four staff plastic surgeons have hospital privileges and are

using the laser center. Follow-up communication is planned for physicians who attended training but have yet to seek hospital laser privileges.

4. DISCUSSION

Although there were numerous issues to be addressed in establishing the business plan and projecting revenue for the cosmetic laser center, this research paper focused on what the researcher considered to be the five relevant issues. They are as follows: 1) establishing the budget; 2) developing a cash-flow sensitivity analysis; 3) developing a competitive pricing schedule; 4) establishing the hospital privileging criteria; and 5) training and staffing.

Budget

Managers control costs through a budget. A budget is a plan stated in dollars (Berman, H. and Weeks. L., 1990). Typically, a hospital will create an operating budget that projects all the anticipated expenses for the next year (Getzen, T., 1997).

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 5.5
Renovation	$100,000	0	0	0	0	0
Overhead/Marketing	$ 41,000	$ 41,000	$ 41,000	$ 41,000	$ 41,000	$ 20,500
½ Registered Nurse	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 18,500
1/3 time Clerk	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 6,000
Equipment Lease	$ 39,199	$ 77,800	$ 77,800	$ 77,800	$ 77,800	$ 38,902
Total Annual Expense	$229,199	$167,800	$167,800	$167,800	$167,800	$ 83,902

TABLE 4. Operating Budget from May 1999 Business Plan

The initial operating budget shown above in Table 4 was established by the vice-president of operations in May of 1999 as part of the first laser center business plan.

In November of 2000, a more detailed expense budget was created as part of the cash-flow analysis (see appendix 4). Around the same time, the cost and revenue centers for the laser center were established. These centers are used to properly allocate any expenses or revenues to their respective accounting centers (with the exception of capital equipment, i.e., the lasers).

Budgets set forth expected performance, and hence they express management's targets. These targets are then compared with actual corporate performance – on a daily, weekly, or monthly basis – to determine the variances, which are defined as differences between realized values and target values (Gapenski, 1996).

The essential elements of the operating budget that would be impacted by the laser center were the following:

Salaries. The initial business plan developed in May of 1999 called for a half-time registered nurse and a part-time clerk at a combined annual base salary of $49,000. The revised business plan of November 1999 called for a certified medical assistant (CMA) or licensed practical nurse (LPN). The base salary range for a CMA in the New York metropolitan area is anywhere from $28,000 to $35,000; salary range for a LPN is $45,000 to $60,000 (Sound Shore Medical Center Human Resources Division, 2000). In addition to the base salary, an additional

32% of the base salary per year for non-cash benefits must be included. A medical assistant was eventually recruited at a base salary of $35,000 per year under the title “laser technician.”

Supplies. Supplies consisted of coupling gel, Topocaine 5% lidocaine (topical anesthetic), tongue depressors (for gel application), tissues, etc.

Equipment Lease. The decision to enter into a leasing arrangement with ESC Sharplan was keeping in line with Sound Shore’s corporate strategy on efficient utilization of capital expenditures. In some cases, the leased product is viewed as remaining the property of the lessor (the party who receives the rental payments). This results in a straightforward procedure whereby each payment is income to the lessor and expense to the lessee. But in other cases, the lease is viewed as the installment financing of an acquisition of the property by the lessee – that is, as a sale by the lessor (Cohen, Zinbarg and Zeikel, 1987).

ESC Sharplan submitted two proposals for leasing of the equipment. The first proposal was deferred payment up to six months after delivery and the second proposal was deferred payment up to one year after delivery of equipment. In both options the company stated there would be a rebate given in order to meet the deferred payment period.

The leasing arrangement with ESC Sharplan and an independent institutional lender was based upon a capital purchase of $417,500. A multiple purchase allowance of $102,600

was applied to the purchase order. The final total purchase was $314,900. Table 5 below reflects how scheduled payments were arranged in order to allow ample time for the laser center to become fully operational.

Payment Period	Number of Payments	Amount of Payment	Total Amount of Payments
Nov 99 – Jan 00	3	$0.00	$0.00
Feb 00 – Apr 00	3	$99.00	$297.00
May 00 – Jul 00	3	$1,000.00	$3,000.00
Aug 00 – Oct 00	3	$2,000.00	$6,000.00
Nov 00 – Jan 05	51	$7,538.75	$384,476.25
Total	63		$393,773.25

TABLE 5. Schedule of Laser Lease Payments

This type of leasing arrangement is a generally accepted business practice. For example, GE Capital, a part of General Electric's financial services business, arranges and structures leases for various large capital investments. GE Capital wants to structure the lease so that the schedule of payments meets the financial needs of the lessee. It also has to satisfy the loan repayment requirements of the financial institution making the loan (Bonini, Hausman and Bierman, 1997).

Advertising. This expense relates specifically to the job posting in the New York Times and Westchester County Gannett newspapers. Cost of the advertisement was $4,650.00. No other advertising for the laser center was planned.

Renovations. Initial renovations consisted of painting and

minor electrical work in an existing ambulatory surgical suite in the Fesjian Pavilion. This original surgical suite was being used as an ambulatory surgery overflow room, mainly for gastro-intestinal surgical procedures such as colonoscopies.

Projections for permanent renovations were based upon the proposed location of the new laser center and gastro-intestinal suite in the Joyce Pavilion. This was originally estimated at a total cost of $60,000 - $10,000 for electrical upgrades; $20,000 for three procedure chairs; and $30,000 for wall finishes, lighting and new flooring. Later revisions to the plan, with assistance from the hospital's project manager, determined that only $25,000 was needed for the entire renovation package.

Computer Equipment. Following the decision to keep the laser center patient population separate from the hospital ambulatory surgery patients, a request was made to purchase a personal computer for the laser center. At the time of the request, hospital policy dictated that some personal computers would be leased, particularly those with temporary utility.

Some products, such as computers may be either purchased outright or leased. Leasing involves some extremely complex problems of revenue recognition because of the many varieties of lease terms (Cohen, Zinbarg and Zeikel, 1987). After researching the cost vs. lease option ($2,035 vs. $400 a month), the researcher requested the personal computer to be purchased outright using a Sound Shore purchase order.

The following computer equipment was purchased at a cost of $2,035: Pentium III w/fan motherboard case; 64 memory; Maxtor

HHD; 8Mb video; CD-ROM 50X; sound card; 56K modem; Windows SE; HP 2100 Laser printer; and Softkey billing software.

Furniture. Original estimates of $10,000 for tables, chairs and couches were revised. Later revisions to the plan allowed for all furniture expenses to be absorbed in the $25,000 allotted for renovations.

Education. The only costs associated with education were limited to refreshments (breakfast and lunch for physicians in training). Costs were estimated at $300.00. Expenses for physician faculty were borne by ESC Sharplan.

Overhead. Overhead was based upon $2.75 per square foot per month, or $33.00 per square foot per year. Total square footage of the laser center is approximately 300 square foot ($9,900 per year) (Sound Shore Finance Department, 2000).

Cash-Flow Sensitivity Analysis

In May of 1999, a projected revenue stream was created by the operations vice-president and an assistant vice-president in finance. This projected revenue stream was based upon the fact that cosmetic laser surgery is a cash only business; that is, the majority of the procedures performed are not covered by health insurance. This means there is no accounts receivable inventory to manage.

The original projected revenue stream is shown in Table 6 below:

	Procedures per week	Procedures per year	Average charge per procedures	Total Revenue
Hospital	15	765	$300.00	$229,500.00
Physician	15	765	$600.00	$459,000.00
Total	15	765	$900.00	$688,500.00

TABLE 6. Projected Revenue Stream from Original Business Plan

In the original laser center projections, it was determined that in order to break-even during its first year of operation, 765 laser procedures would have to be performed annually. The average hospital charge of $300 per procedure was based upon average hospital charges from a laser center operating in a New Jersey medical center. The benchmark of $229,500 is based upon operating expenses for the first year shown earlier in Table 4. In November of 1999, a more detailed breakeven analysis was performed (see appendix 5).

Using the revised expense budget and a lower average hospital charge of $250 per procedure (based upon Sound Shore's year-to-date volume and revenue), it was determined that only 432 procedures needed to be performed to break-even for the first year. In the second year of operation, 635 procedures needed to be performed; in the third year, 650; fourth year, 666; and in the fifth year, 683 procedures.

A cash-flow sensitivity analysis was also conducted (see appendix 6). This analysis ties in projected revenue targets with expense targets. It is believed that five physicians, considered heavy users of the laser center, could bring in five patients each a week. Most of the procedures require anywhere

from 3 to 6 follow-up sessions. Each session is performed on a monthly basis. This would mean that each physician would have twenty steady patients at any one given time. The researcher believed this to be a realistic and achievable target.

At a rate of twenty-five patients per week, the formula for the projected revenue stream is $250 (average hospital charge) * 25 (patients per week) * 50 (weeks) = $312,500. This formula is used in the second year of operation. The first year of operation uses a breakeven analysis to allow time for the laser center to build a patient base and gain market share.

Developing a Competitive Pricing Schedule

Developing a competitive pricing schedule for cosmetic laser surgery was no easy task. Since cosmetic laser surgery is elective and, in most instances, not covered by insurance companies, there are no established pricing guidelines. Historical data is limited due to the fact that the technology is fairly new.

Most cosmetic laser surgery is performed in a doctor’s office. Physicians normally do not share pricing information, particularly with potential competitors. This made it difficult to determine what would be considered the physician component of the fee and what would be the hospital component. Although Sound Shore would not be involved with the physician component of the patient billing, this information was needed in order to

determine what were fair and equitable, yet competitive, hospital charges.

In addition, cosmetic lasers cost anywhere from $50,000 to $200,000. That cost, along with the expense of equipment maintenance and the advertising that many doctors use to promote their new service, is passed on to patients (Wilson, 1992). This meant that laser charges for physicians in office-based practices would generally be higher than physician's charges for procedures performed in a hospital setting.

In a meeting with the researcher, finance and operations representatives in October of 1999, it was decided that a standard hospital charge - exclusive of the physician's fee - would be used. This would then allow the plastic surgeon or dermatologist to charge the client whatever fee they had agreed upon in advance. Sound Shore would collect the hospital charge for the use of the facility and laser. Since cosmetic surgery is, for the most part not billable under an individual's health insurance plan, it is the most effective way for hospitals to bill patients.

The researcher utilized several different resources to create a fee schedule that would ensure lease payments were met and a sufficient amount of profit was made for the facility. The researcher began by placing telephone calls to New York metropolitan area cosmetic laser centers. Both office-based

physician practices and hospital-based laser centers were used. One laser center in mid-town Manhattan, New York City, provided their entire list of procedural charges, in addition to the original business plan used to acquire venture capital to start their business. Other sources of pricing data were a list of cosmetic procedure prices from a medical center in New Jersey and a list of prices acquired by one of Sound Shore's plastic surgeons from telephone surveys.

The pricing schedule from New Jersey, although a useful source of information, was based upon a well-established laser center being operated by one of the nation's leading cosmetic laser surgeons. In addition, the state laws governing who can use cosmetic lasers for hair removal, vascular and pigmented lesions, tattoo removal, etc. differ from state to state. This impacts pricing since a cosmetologist may be doing it in one state whereas only a licensed physician can operate it in another.

In the state of New York anyone can operate a cosmetic laser and perform various cosmetic laser procedures without having a medical license. The New York State Board for Medicine and the Medical Society of the State of New York have determined that laser surgery for the purpose of removing veins and hair is noninvasive and therefore 'not medicine.' The medical board position statement reads as follows: "The use of lasers in

procedures that constitute the practice of medicine require appropriate licensure in New York State. Any procedure that is invasive, i.e., breaks the skin, is considered as the practice of medicine. At the present time, procedures that use lasers that are noninvasive do not require medical licensure. However, the FDA regulates the use of certain classes of lasers and you must also consult the appropriate federal regulations for dose limitations" (New York Medical Position Statements, 1998).

In the state of New Jersey only a physician may operate a cosmetic laser. The New Jersey Board of Medical Examiners has determined that laser surgery, regardless of what is being removed (i.e., hair) is invasive and therefore 'medicine.' The medical board's position statement reads as follow: "The Board has interpreted the laser hair removal process to be an invasive procedure which is considered the practice of medicine. The use of any type of laser may not be performed by any health care provider other than a licensed physician" (New Jersey Medical Position Statements, 1998). This is important because the laser operator's professional credentials impact pricing, i.e., physician versus cosmetologist. Since Sound Shore's laser center operates out of New York, it is competing against less expensive laser studios operated by non-physicians.

In December of 1999, a meeting was held with the hospital's

chief operating officer, the researcher and the staff plastic surgeon to review and approve of the hospital's list of cosmetic surgery charges (see appendix 7). As of May 2000, the list of hospital laser charges is still current.

Establishing Laser Privileging Criteria

Privileging for physicians proved to be challenging for the researcher. The decision to allow only licensed physicians on staff at Sound Shore to operate the cosmetic lasers was made earlier by the chief operating officer and medical director. Initial privileging meetings began with the researcher, the Sound Shore medical director and the staff plastic surgeon. Laser privileging criteria established in 1990 for Sound Shore physicians was already in place; however, the privileging criteria was based upon laproscopic, or invasive laser surgery, not cosmetic laser surgery.

Hospital privileges are and must remain the responsibility of the hospital or other institutional governing board (ASLMS), 2000). For the patient, the granting of privileges is equally important. Perhaps the best way for consumers (patients) to protect themselves when a physician proposes to use lasers for plastic surgery – or for any operation – is to find out whether he has privileges to use that particular type of laser at an accredited hospital (Wilson, 1992).

Physicians requiring privileges to use lasers should first

of all meet all the standards of that institution with respect to board certification, board eligibility, specialty training, ethical character, good standing, judgement, etc., and should have interventional privileges in the specialty before requesting laser privileges (ASLMS, 2000).

For example, a plastic surgeon should have facial surgery privileges before requesting privileges for use of lasers in facial resurfacing procedures and, likewise, gynecologists requesting privileges for use of lasers in hair removal should already have privileges for gynecological procedures. This was agreed upon and established early in the process by Sound Shore's medical director.

The ASLMS also recommends that a physician applying for privileges spend time after the basic training course in a clinical setting with an experienced operator (such programs are often called "preceptorship" training programs or "observation." Several brief visits or a more prolonged period may be required, dependent upon the individual physician observed.

It's also valuable for the novice physician to perform the laser procedures with supervision by the expert; however, for a variety of reasons, such as whether or not the physician has hospital privileges, status of patients and insurance coverage of physicians, this is not always possible (ASLMS, 2000).

In order to develop the hospital privileging criteria, the researcher utilized available existing laser privileging criteria for Sound Shore; privileging criteria from a New Jersey based medical center; and recommended guidelines from the American Society for Laser Medicine and Surgery.

Following several discussions with the hospital medical director and medical department directors, the basic tenets of the laser privileges were formed. In January of 2000, the laser privileging criteria for Sound Shore staff physicians was finalized by the researcher and approved by the hospital's medical director and medical department directors (see appendix 8).

Training and Staffing Issues

The first physician to receive laser privileges in the facility was the staff plastic surgeon whom the researcher had been working with from the beginning of the project. The surgeon had received laser training from various plastic surgeons throughout the country during the past five years and had the proper documentation and training to be granted "unsupervised privileges." This meant that the plastic surgeon could operate the lasers unsupervised.

In January of 2000, the area sales manager from ESC Sharplan provided an informal overview of the lasers and their capabilities to a group of Sound Shore's medical department

directors. Around the same time, the staff plastic surgeon had begun using the laser center and was building a patient base.

In February of 2000, following the January opening of the laser center, the researcher developed a newsletter for the Sound Shore physician community titled, “Cutting Edge” (see Appendix 9). This newsletter was mailed to approximately six hundred staff physicians in the Sound Shore area. The purpose of the newsletter was to attract staff physicians, particularly plastic surgeons and dermatologists, to the center. In a voluntary, not-for-profit community hospital where staff physicians have privileges at other hospitals, information is not necessarily disseminated in an efficient manner. Thus, it would have been wrong to assume that the staff physicians were aware of the opening of the laser center.

In March of 2000 the researcher made arrangements with ESC Sharplan to conduct a daylong laser workshop at Sound Shore in April of 2000. ESC Sharplan provided the physician faculty instructor. Twenty-three physicians attended the training on a Sunday and received sufficient didactics and on-hands instruction to apply for “supervised privileges.” This meant that their preceptor, in this case the staff plastic surgeon who was already using the center, would observe the physician until he felt comfortable the physicians could perform on their own.

Follow-up communication has been planned for those physicians who attended training but have yet to seek hospital privileges.

The initial business plan developed in May of 1999 also called for a half-time registered nurse and a part-time clerk to operate the center. The revised business plan of November 1999 called for a medical assistant or licensed practical nurse to perform both clinical and administrative duties in managing the laser center. After further discussion with the director of nursing and the staff plastic surgeon, it was decided that a full-time medical assistant would be sufficient.

Although the primary duty of the medical assistant would be to assist the physicians in the laser center, one of their other duties would be to collect the hospital charge from the client. Charges collected from patients would be tracked through the laser center's PC and the hospital's fee collection system. The decision was made at the October 1999 meeting to keep the laser surgery patients out of the hospital's main computer support system. This was to ensure that patients would not be billed for services already paid for.

It was also determined that any laser patient must pay the hospital charge in advance of the procedure. Since nearly all of the laser procedures are elective cosmetic surgery, they are

not billable to any insurer. Payment of the physician's fee would be arranged separately between the physician and patient.

Currently, either the physician or the researcher collects the hospital charge from the patient. This is due to the fact that most of the procedures are done in the late afternoon or early evening, after the ambulatory surgery registrar leaves the nurses station. There have been no problems in this arrangement since the physicians are aware of the hospital fee schedule; funds collected in the evening are delivered to the cashier's office the following morning and applied to the laser center's revenue center.

Following several leads for a medical assistant without success, an advertisement was drafted by the researcher and placed in the New York Times help wanted section, along with the Gannett newspapers in Westchester County, New York. A medical assistant was eventually recruited at a base salary of $35,000 per year with the title "laser technician."

5. CONCLUSION

Over the years, hospitals and health systems have become known for providing a broad array of services. We often refer to this as a "comprehensive continuum" (Gee, 2000). Today's health system, however, must closely examine their core businesses and service lines to remain financially viable while

serving the needs of the community. The preferred way is to look at current reimbursement and future opportunity (Gee, 2000). On the surface, implementing a cosmetic laser center in a community hospital does not necessarily fit in well with historical core service lines or markets.

Lessons learned. One of the lessons learned is when dealing with a voluntary physician staff it is important to make the laser training as simple and unproblematic as possible for the attending physicians. Gathering twenty-three physicians together on a Sunday for all-day training was no easy task. A great deal of time and effort went into announcing the training, registering physicians, distributing the agenda via fax, enlisting patient volunteers, etc. so that the physicians would not be required to do little more than attend.

Another lesson learned is to have a qualified surgical technician available from the very beginning of operations. Not having the technician working hand and hand with the surgeons and administrator from the start-up creates additional time spent teaching the new technician. It also created additional work for the plastic surgeon and the researcher since the technician was not available.

Key factors for success. One key factor for successful implementation was having a plastic surgeon’s guidance and direction from the initial design phase to the operational

phase. Involvement from the medical department directors also played a significant role in the success of establishing the center. Although the directors wanted to remain informed, they had little interest in getting involved with day-to-day activities. By keeping the directors informed of the laser center's progress, they remained supportive of the project.

Developing professional relationships within the laser surgery community was another key factor for successfully developing the business plan and forecasting revenue streams. The researcher discovered that people within this community were willing to share information with other professionals in order to promote the growth of the laser surgery industry.

Limitations. One of the limitations the researcher experienced was getting trained physicians to complete the privileging process in order to use the center. Physicians that received the initial training appeared enthusiastic at first, but only twenty percent of those physicians actually went on to complete the privileging process. Another limitation was availability of current literature. The researcher attributed this to the fact that cosmetic laser surgery technology is fairly new.

The researcher believes there is a great deal of future opportunities for cosmetic laser surgery. The available data shows there is an increasing demand for cosmetic laser surgery

in that the number of cosmetic laser procedures being performed is rapidly rising. In addition, plastic surgeons and dermatologists are reaching out for newer, faster and safer cosmetic procedures as evidenced in the data supported by ASAPS and AACS.

In January of 2000, the first cosmetic laser procedure was performed at Sound Shore. As of May 2000, over 100 cosmetic laser procedures have been performed in the center. Volumes are beginning to meet forecasts, and an increase in both usage of the laser center and patient volumes are expected as more physicians seek privileges.

Although the laser center is relatively new to both Sound Shore Medical Center and the surrounding communities, early indicators are positive for continued growth and success.

APPENDICES

Appendix 2.

VI. 1999/2000 Plans for Community Services and Programs

Sound Shore Medical Center=s Community Service Initiatives for 1999/2000 include:

X Creation of a Women=s Health Center in the Goldstein Ambulatory Care Center to provide under served women with increased access to prenatal, maternity and primary care.

X Certificate of Need seeking New York State Department of Health Approval for a Westchester Medical Center Adult Cardiac Catheterization Laboratory Satellite at Sound Shore Medical Center to increase access to the under served, minority groups, women and elderly residents of southern Westchester.

X Establishment of a comprehensive Breast Care Center in the Fesjian Pavilion.

X Expansion of Renal Dialysis, Orthopedic/Neurosurgical Spine, and Gastrointestinal services.

X As the founding member and lead organization, implementation of the Village Team, a collaboration of 40 community organizations focused on developing comprehensive and coordinated programs to promote the healthy development of

children and families in New Rochelle.

X Domestic Violence Education and Awareness Campaign for employees and the community.

X Participation in the New Rochelle 2000 Planning Committee (New Rochelle Office for the Aging) to identify and address priority issues facing the aging.

X Establishment of a Sleep Disorder Center.

X Expansion of SSMC web site to provide more information regarding health education and access to hospital services.

X Development of a Laser Center.

X Incorporation of holistic nursing therapies, including self-hypnosis, guided imagery, reflexology and therapeutic touch, into patient care.

Appendix 8.

TO: Sound Shore Medical Center Physicians

FROM: Matt McDevitt

DATE: January 24, 2000

SUBJECT: Sound Shore Medical Center Laser Center Facility Charges for the Year 2000

NOTE: THE FOLLOWING INFORMATION IS PROPRIETARY TO SOUND SHORE MEDICAL CENTER AND SHOULD NOT BE RELEASED TO THE GENERAL PUBLIC UNLESS SPECIFICALLY REQUESTED.

The following are 2000 SSMC Laser Center charges. This list of charges supercedes any other Laser Center list prior to January 24, 2000.

Procedure	**Facility Charge (per treatment)**	**Facility Charge (subsequent treatments)**
Epilation (hair removal) EpiTouch® Alexandrite		
Upper Lip (small area)	$125 (per treatment for first three treatments)	$50 (per treatment up to six months following third treatment)
Chin (small area)	$125 (per treatment for first three treatments)	$50 (per treatment up to six months following third treatment)
Eyebrows (small area)	$125 (per treatment for first three treatments)	$50 (per treatment up to six months following third treatment)
Two small areas	$175 (per session for first three sessions)	$50 (per treatment for one area) $25 (per treatment for second area) (up to six months following third treatment)
Three small areas	$225 (per session for first three sessions)	$50 (per treatment for one area) $25 (per treatment for second and third area) (up to six months following third treatment)
Underarms (large area)	$150 (per treatment for first three treatments)	$50 (per treatment up to six months following third treatment)
Upper Arms (large area)	$200 (per treatment for first three treatments)	$100 (per treatment for fourth and fifth treatments within one year from start)
Lower Arms (large area)	$225 (per treatment for first three treatments)	$125 (per treatment for fourth and fifth treatments within one year from start)

Legs:			
	Bikini (large area)	$200 (per treatment for first three treatments)	$100 (per treatment for fourth and fifth treatments within one year from start)
	Upper Legs w/bikini (large area)	$275 (per treatment for first three treatments)	$150 (per treatment for fourth and fifth treatments within one year from start)
	Upper Legs w/out bikini (large area)	$200 (per treatment for first three treatments)	$100 (per treatment for fourth and fifth treatments within one year from start)
	Lower Legs w/bikini (large area)	$300 (per treatment for first three treatments)	$175 (per treatment for fourth and fifth treatments within one year from start)
	Lower Legs w/out bikini (large area)	$225 (per treatment for first three treatments)	$125 (per treatment for fourth and fifth treatments within one year from start)
	Upper and Lower Legs w/bikini (large area)	$450 (per treatment for first three treatments)	$250 (per treatment for fourth and fifth treatments within one year from start)
	Upper and Lower Legs w/o bikini (large area)	$375 (per treatment for first three treatments)	$200 (per treatment for fourth and fifth treatments within one year from start)
	Back (large area)	$350 (per treatment for first three treatments within one year from start)	$175 (per treatment for fourth and fifth treatments
One large area, one small area		Regular charge - large area, 40% of regular charge - small area	Regular charge – large area, 40% of regular charge - small area
Two large areas		Regular charge - first area, 40% of regular charge – 2nd area	Regular charge - first area, 40% of regular charge – 2nd area
One large area, two small areas		Regular charge for large area and first small area, no charge for second small area	Regular charge for large area and first small area, no charge for second small area
Two large areas, one small area		Regular charges for large areas, no charge for small area	Regular charges for large areas, no charge for small area

Facial Resurfacing
DermaK® Dual Wavelength

Partial:			
	Face (forehead, cheeks, etc)	$400 for each treatment	N/A
	Small area (upper lip, etc)	$200 for each treatment	N/A
	Scar	$150 for each treatment	N/A
Full Facial Resurfacing		$800 for each treatment	N/A

Vascular/Pigmented
PhotoDerm®VascuLight

Spider Veins/Lesions	$225 for each treatment	N/A
Varicose Veins	$225 for each treatment	N/A
Tattoo Removal	$300 for each treatment	N/A

NOTE: Treatments for veins, lesions, and tattoos are calculated in 15- minute periods

Should you have any questions, please contact Matt McDevitt at ext. 4533.

Appendix 7.

Sound Shore Medical Center Laser Privileging Criteria

I. An applicant for Sound Shore laser privileges must have completed a basic training program devoted to the principles of lasers, their instrumentation and physiological effects and safety requirements. It is recommended that a course be taken within 1 year of the requested privileges. If the physician has completed a course more than 12 months before privileges are to be granted, he/she must attend another refresher laser course, unless they are already credentialed at SSMC. An on-line basic laser and safety course is available at www.ehs.uiuc.edu/~rad/laser/laser.html. This on-line tutorial produces instant results following the exam and is sufficient to serve as a refresher course for those physicians who have already taken a basic laser course.

The initial training program must include clinical applications of various laser wavelengths in the particular specialty field as well as hands-on practical sessions with various lasers and their appropriate surgical or therapeutic delivery systems. The course requirements are as follows:

1. Minimum of 6 hours didactic lectures
2. Basic laser physics
3. Tissue interaction
4. Laser safety procedures

5. Laser hazards

6. Lectures on applications and indications for each laser for each specialty

Upon completion of the initial laser training and safety program, the procedures and policies regarding the granting of laser privileges for physicians at Sound Shore Medical Center are as follows:

II. The physician applicant must submit the following:

A. Written Request for Privileges

A written request for privileges must be submitted to the appropriate Department Director. The request must include the following:

- A statement indicating which specific lasers will be used
- A statement indicating which procedures will be done with each laser

Laser privileges will not be granted to do procedures outside the general scope of the applicant physician's specialty.

B. Documentation of Training and Competency

The applicant must submit at least one of the following:

1. A letter from the Chairman of the applicant's residency training program attesting to the

applicant’s training and competency to use laser procedures. This letter must be specific with regard to which lasers and which procedures were included in the training program. Theoretical, safety and clinical applications must be documented as part of residency training. Hands-on experience must be included. Finally, the chairman must make a statement with regard to his assessment of the applicant’s competency to use each laser for whatever procedures are applicable.

OR

2. Documentation of participation in a laser training course, acceptable to the Department Director, must include:

- A certificate of completion
- An official program (or letter from the director of the course) indicating the nature of the training, which lasers were included and what procedures were taught. The course must include hands-on experience.

OR

3. A list of at least 10 laser cases done by the applicant. Ten cases will be required for each laser. The list must include: name of patient, type of laser, date of treatment, place of treatment, type of

procedure, diagnosis, results and any complications.

III. Review by Department Director

The applicant's department director will review the applicant's request for privileges; documentation of training and competency; and make recommendations to grant or deny privileges based on their review.

IV. Review by Credentials Committee, Medical Board, Joint Conference Committee and Board of Governors

All recommendations and documentation shall be reviewed by the Credentials Committee, Medical Board, Joint Conference Committee and finally the Board of Governors who will make final determination with regards to granting or denying privileges.

V. Granting of Privileges and Training

Once privileges are granted to a physician:

- Prior to using any laser, the physician must receive training on that specific make and model laser as per the requirements of the department director.
- The first ten cases performed with each laser must be approved and/or observed by the director of the department or a physician designated by him or her.
- When a physician has satisfied the above requirements, he/she may request a change from supervised to

unsupervised laser status. This request must be made in writing to the department director. The department director may grant full privileges at his/her direction.

VI. Reappointment

Delineation of privileges is to be done bi-annually as per the usual reappointment process.

VII. New Lasers

If a physician already privileged to use some lasers wants to be granted privileges to use a new or different laser, they must go through the process outlined in I-VI of this privileging document.

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