

Implementation of a surgical suite management information system: The Tampa General Hospital experience

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THE TAMPA GENERAL Hospital (TGH) is a 1,000-bed regional medical center located on Davis Island along the Gulf Coast of Florida. Since it opened in 1927, Tampa General has received state-wide recognition for continuing excellence in medical care. The Tampa General Hospital is the primary teaching facility for the University of South Florida College of Medicine. The hospital provides clinical training in adult and pediatric medicine along with diagnostic, therapeutic, and rehabilitative programs offered in seven centers. TGH is a major referral center for patients requiring highly sophisticated surgical treatment. Future plans call for continued development of clinical and educational programs.

At TGH, surgical services are located in three different areas—the second floor suite

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with 17 operating rooms (ORs), a four-room cardiovascular suite on the third floor, and the burn surgical suite on the sixth floor. Surgical service volumes was 12,421 annual cases for fiscal year 1988, of which 30% is outpatient surgical activity. Cases have grown at the rate of 7.5% per year and are projected to continue to grow at this rate. One of the key components of TGH's strategic plan is the provision of management information systems (MIS) to support surgical suite activities. Administration concluded that automation is a necessary tool to enable the hospital to continue with its stated goals of excellence and growth in surgical care. Following the strategic plan, in late 1987 the hospital completed its review of available software programs, evaluated, selected, and installed the Standacare OR System offered through Johnson & Johnson Hospital Services.

The Standacare system includes software that automates surgical suite management in three areas. The "OR Scheduler" schedules cases with multiple user access. The "OR Supplier" provides inventory control based on physician preference lists. The "OR Reporter" gathers data used for compiling decision-making reports. The Standacare system at TGH runs on IBM PS/2 computers with high-resolution color monitors. An IBM Token Ring Network provides multiple scheduling access. Management reports, schedules, and pick lists are provided on high-speed laser jet printers used throughout the system.

PURPOSE AND SCOPE

TGH occupied new patient towers in 1986. With the move to new OR suites, a strategic decision was made to implement

a surgical case cart system aided by a comprehensive, automated computer system. Administration recognized the opportunity to achieve operational efficiencies using such labor-saving technology. With this opportunity came the challenge of automating an ineffective manual system with state-of-the-art technology. This was an ambitious task in a hospital with 26 operating rooms supporting in excess of 33,000 surgical hours per year.

Planning for the new facility and surgical system began approximately two years before the actual move. Management philosophy focused on concurrent planning with representatives from data processing, management engineering, facility planning, materiel management, and surgical staff. This group worked together throughout the implementation period as a focused team.

At the new facility, the surgical case cart system was implemented. The requirements for the system were carefully planned for, and TGH selected a 24"-by-24" open cart with four shelves for its standard case cart. Case carts are now carefully assembled with the required supplies and instruments for each case by the supply, processing, and distribution (SPD) department before being delivered to the OR suite by an assigned cart lift or elevator. Specialty items, including sutures and surgical implants, are maintained in the OR and are picked by OR staff before the case.

The majority of cases can be accommodated by one cart; an occasional orthopedic case or difficult procedure may require two carts. The current case load at TGH requires preparation on the average of 60 case carts per day plus 30 carts for labor and delivery procedures and emergencies.

BENEFITS TO SURGICAL SERVICES

Overview

Before an institution embarks on the process of OR automation, its objectives should be clearly stated. Scheduling, in its broadest sense, is usually addressed first to ensure that the appropriate supplies, equipment, staff, and rooms are available for projected cases. Other considerations include systems to capture charges for items consumed and to provide statistics in an organized fashion. In addition, a comprehensive system provides the nurse manager with decision support capabilities that have been previously unavailable, fragmented, or difficult to obtain.

Each component of the Standacare system provides distinct benefits to the institution. At TGH, the OR schedule was the first component to be computerized. Planning for implementing the system enhanced the way surgeons booked their cases. With the automated system, surgeons now make a single telephone call ("one-call booking") to schedule a case and to communicate the need for a bed reservation. The surgery department is also alerted to any special requirements for the case. Professional time for both surgeon and staff is saved in preparing for the case. The OR Scheduler alerts staff to potential conflicts in equipment requirements or special instrumentation and provides infor-

mation on the anticipated time required for the particular procedure.

The OR Reporter, the second module of the Standacare system, was implemented next. Reports generated by the OR Reporter provide management with new and additional information crucial to the decision-making process. These reports include physician activity, patient demographics, allocated human resources, and overall surgical suite use. At TGH, the operative record is the source document. From the record, selected data from each surgical procedure are entered into the OR Reporter. The staff can then extract information in various formats or move selected information into a LOTUS file.

The third module implemented at TGH was the OR Supplier. This module was the most difficult to implement because of the amount of detail required in developing the physician preference lists. Currently, there are over 5,000 physician preference lists maintained on the system.

The resulting benefits of the Standacare system are represented by a blend of quantitative and qualitative factors. The key goals identified during the implementation process at TGH included improvement in OR utilization and productivity, recovery of lost charges, inventory reduction, information for management, and nurse and physician satisfaction.

Benefits of the automated system

An OR information system is expected to provide two major benefits for surgical suite management. One is a set of clearly quantifiable criteria that affect the productivity of the OR and, ultimately, the bottom line of the hospital. The second is qualitative, relating to physician and staff

Planning for implementing the system enhanced the way surgeons booked their cases.

satisfaction, staff extender opportunities, and enhanced management information. Although not financial criteria, these certainly are significant factors to TGH and reflect the true value of the system.

Quantitative benefits

The Surgical Suite Information System Project Team at TGH synthesized the myriad quantitative factors into three distinct opportunities: OR utilization and productivity, recovery of lost charges, and inventory reduction.

OR utilization and productivity have long been the benchmark measures of surgical suite efficiency. The ability to increase surgical case volume or to decrease the staff time utilized in these cases is essential to successful management of any institution. With the implementation of the Standacare system, the operating room management staff were able to achieve greater flexibility in scheduling cases. Current reports provide six-month histories of OR usage with detailed information on the average number of hours per surgeon per week. The Standacare system has the ability to identify surgeons and their allocated blocks of scheduled time. Data provided allow management to pinpoint the performance of individual physicians and to use this information to work with the surgical staff for adjustments in their blocks of scheduled time.

During the period of system implementation, several key measures were tracked. From 1987 to 1988, cases increased 7.5% from 11,551 to 12,421 (Table 1), hours utilized increased 10.8% (Table 2), hours available increased 1.0% (Table 3), and actual suite utilization improvement, as indicated in Table 4, increased from 68.3%

Table 1. Number of cases

Month	Fiscal year 1987	Fiscal year 1988	Change (%)
October	1,057	1,028	-2.7
November	857	926	8.1
December	883	1,011	14.5
January	959	924	-3.6
February	976	1,019	4.4
March	1,024	1,141	11.4
April	966	1,103	14.2
May	911	994	9.1
June	931	1,027	10.3
July	1,035	1,026	-0.9
August	977	1,184	21.2
September	975	1,038	6.5
Total	11,551	12,421	7.5

to 75%—a 6.7% increase. As a result, utilization of the OR in August 1988 was 78%, up from 71% in July, at a seasonal period when most institutions experience a decline in surgical activity. Overall, as indicated in Table 5, OR utilization improved from 68.3% in 1987 to 75.0% in 1988—an increase of 3,802 hours utilized. This increase resulted in a bottom line impact of

Table 2. Hours utilized

Month	Fiscal year 1987	Fiscal year 1988	Change (%)
October	3,428	3,123	-8.9
November	2,538	2,986	17.7
December	2,650	3,113	17.5
January	2,805	2,879	2.6
February	2,983	3,304	10.8
March	3,140	3,653	16.3
April	3,040	3,457	13.7
May	2,870	3,273	14.0
June	2,940	3,180	8.2
July	3,021	3,174	5.1
August	2,961	3,708	25.2
September	2,988	3,316	11.0
Total	35,364	39,166	10.8

Table 3. Hours available

Month	Fiscal year 1987	Fiscal year 1988	Change (%)
October	4,549	4,232	-7.0
November	4,111	4,011	-2.4
December	4,549	4,358	-4.2
January	4,424	4,107	-7.2
February	4,007	4,188	4.5
March	4,424	4,549	2.8
April	4,368	4,244	-2.8
May	4,292	4,424	3.1
June	4,368	4,368	0.0
July	4,358	4,457	2.3
August	4,107	4,752	15.7
September	4,184	4,545	8.6
Total	51,741	52,235	1.0

\$219,885. This performance improvement coincided with the physical space expansion from 12 ORs to 22.

Although less of an incentive with an increasing number of fixed payers (80% at TGH), improved recovery of lost charges does represent an area of financial opportunity. For the initial calculation, a sampling of all current charges determines what

Table 4. Suite utilization

Month	Fiscal year 1987 (%)	Fiscal year 1988 (%)	Change (%)
October	75.4	73.8	-1.6
November	61.7	74.5	12.8
December	58.3	71.4	13.1
January	63.3	70.1	6.8
February	74.4	78.9	4.5
March	71.0	80.3	9.3
April	69.6	81.4	11.8
May	66.9	74.0	7.1
June	67.3	72.8	5.5
July	69.3	71.2	1.9
August	72.1	78.0	5.9
September	71.4	73.0	1.6
Total	68.3	75.0	6.7

percentage of actual charges is lost. Initially, TGH calculated lost charges to average 7%, or \$627,812. Through the Standacare system, this factor was reduced to 5% for a gain in annual gross revenue of \$170,095.

Eighty percent of the medical/surgical items at TGH are considered "patient charge items." The information provided by the automated system has provided the basis for developing a procedural costing system. This system eliminates the task of charging for each individual item and thus enhances both revenue generation and staff productivity (circulating nurses, SPD, technicians, and data processing entry). Hospital records are internally audited to validate the accuracy of the current system. With the OR Reporter, reports are generated on demand to validate the accuracy of the current costing system. Table 5 shows the cash impact of that calculation including a reduction of 80% for fixed payers. Table 6 identifies the recovery in lost charges by showing the differences between each month in fiscal years 1987 and 1988. Dollar amounts represent unbilled dollars identified by internal auditor each month.

A significant concern among hospital financial managers and OR directors is inventory reduction. The real and hidden costs of surgical suite inventory can have more line items and more value than the central storeroom, yet they are usually unrecorded and uncontrolled.

The major surgical services inventory issues concern product availability, inventory turnover, carrying cost, and space. Product availability is paramount to patient care. Unavailable products cost money in terms of lost revenue or additional

Table 5. Standacare system productivity data analysis as prepared for Tampa General Hospital

Productivity data	1987	1988
OR productivity		
Projected OR revenues (\$)	16,706,956	19,067,228
Projected OR hours utilized	35,362	39,164
Potential OR hours available	51,739	53,233
Projected OR utilization (%)	68.3	75.0
Projected OR revenue/hour	472	486
OR program increased utilization factor (%)	2.0	6.6
Increased hours utilized	631	3,802
Increased OR revenues (\$)	297,832	1,847,772
OR profit percentage (%)	11.9	11.9
Increased profit contributed (\$)	35,442	219,885
Lost charges		
Latest year's supply revenue (\$)	8,894,352	7,038,728
Current % lost charges	7.0	3.6
Projected lost charges—current system	627,812	—
Average program lost charges factor (%)	5.0	—
Projected lost charges—Standacare system (\$)	444,717	253,484
% fixed payers	80.0	80.0
Projected lost charges recovered with Standacare system (\$)	36,619	74,866
Inventory reduction		
Average OR supplies inventory (\$)	1,296,477	1,136,260
Current inventory turns/year	2.2	3.3
OR program projected inventory turns	4	—
Projected OR program average inventory (\$)	713,062	—
Inventory reduction value (\$)	583,415	160,217
Estimated inventory carrying cost (%)	15.0	15.0
Ongoing savings on inventory carrying cost (\$)	87,512	24,033
Total projected internal benefits from OR program (net) (\$)		294,614

expense associated with overnight or hand-carried deliveries.

Turnover, the most important measurement in inventory management, is an indication of how much inventory is sitting on the shelf at any given time. Again, the goal is to minimize this investment, since, in the case of many hospitals, every item sitting idle in inventory represents dollars expended but not utilized to generate revenue.

Carrying costs are a financial concern since they represent additional costs for

holding inventory. Typically, this is an opportunity cost associated with dollars invested in inventory but not invested in interest-bearing vehicles. More of a concern in times of high inflation, carrying costs are always an unavoidable cost directly related to the amount of inventory being held. The smaller the quantity of inventory on hand, the lower the holding costs will be. Today, most health care managers estimate that these carrying costs can equal 15% of the total cost of their inventories. These are annual, recurring

Table 6. Lost charge trends

Month	Fiscal year 1987	Fiscal year 1988	Variance	Variance by %
October	n/a	\$ 42,146	n/a	n/a
November	n/a	12,972	n/a	n/a
December	\$ 24,300	28,646	4,346	18
January	98,438	53,344	-45,094	-46
February	25,510	51,993	26,483	104
March	50,978	34,419	-16,559	-32
April	73,887	38,996	-34,891	-47
May	102,204	32,047	-70,157	-69
June	82,095	2,263	-79,832	-97
July	44,395	760	-43,635	-98
August	54,205	3,119	-51,086	-94
September	71,800	7,897	-63,903	-89
Totals*	\$627,812	\$253,484	-374,328	-60

*October and November excluded from totals.

costs that can never be eliminated, only reduced and controlled.

Space, or square footage, is the third factor. Space utilization is connected to the type of support received from materiel management, the amount of inventory on hand, and the techniques used to accommodate the OR inventory. Space within hospitals is always expensive. Every square foot dedicated to holding supplies potentially reduces the amount of space available for generating revenue or other purposes within the surgical suite.

In the case of TGH, a significant benefit of system automation has been the improvement to better than 3.3 turns per year of the operating room's official inventory for all specialty items. Items maintained in SPD turn over at a much higher rate and are more commonly used than specialty items such as heart valves.

Through the use of the system and a focused approach to the management of surgical supplies, TGH realized a one-time

inventory reduction of \$160,217 in the first year of implementation (see Table 5). The annual carrying cost savings, estimated at 15%, were \$24,032.

Over the last several years, the OR supply inventory at TGH has been maintained as an asset inventory. Therefore, inventory reduction results in an improved cash flow. Actual savings are achieved primarily through additional cash invested at 8% to 10%. If this inventory had been maintained as unofficial inventory, as is the case in the majority of hospitals in the United States, then one-time savings would have been much more substantial. For example, with an unofficial inventory of

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equal value, the one-time buy-down would have resulted in \$160,217 of additional one-time savings.

The materiel management purchasing staff recognized that commitment from each department was crucial to the success of this process. The philosophy toward inventory is that comprehensive inventory control rests with, and is the responsibility of, using departments.

Qualitative benefits

The qualitative benefits of the automated OR system can be summarized under two categories: management information and nurse and physician satisfaction.

The Standacare system is used to generate both general and user-specific reports containing management information. These reports track physician and resident time for accreditation purposes, for educational activities, or for validation of physician billing. Report data also differentiate high-volume users and high-revenue producers of the operating room facilities. The OR Reporter enables TGH to easily track types of surgical cases, surgical hours for board certification, or data required for credentialing surgical residents. Initial analysis of this information stimulated changes in the previous block scheduling system, specifically addressing suite utilization and productivity.

With the array of management reports available, TGH discovered early on that daily or weekly reports were of limited benefit. A standard reporting routine has been established that complements the goals and objectives of the project by providing daily, weekly, and monthly reports.

Daily reports are generated that analyze

suite utilization. These reports are distributed to OR management for the primary purpose of evaluating suite utilization, tracking turnover times, and identifying problem areas on a day-to-day basis. Secondary purposes include verifying data entry quality before distribution and detecting errors in nursing documentation that require either additional nursing education or possible disciplinary action.

Hourly case load summaries are generated on a weekly basis and distributed to OR and anesthesia management. These reports serve primarily to identify peak days and hours of utilization in order to determine proper staffing levels. A secondary purpose is to identify hours of low utilization requiring additional research for resolution (i.e., delay report and block time utilization).

Patient data listings are distributed monthly to medical school service areas in order to provide the medical school with information to track residency programs and patient billing deficiencies. These listings also serve to verify data entry quality before monthly reports are generated and data are summarized. Other monthly reports such as suite utilization sorted by service, OR utilization sorted by financial class, and patient type summaries are distributed hospitalwide, and the information included on these reports is transferred to LOTUS 1-2-3 for fiscal year comparisons and hospitalwide statistics. Case performance reports are distributed monthly to the OR pharmacy so that staffing patterns can be determined and patient bills can be rectified.

A final report—OR utilization summary sorted by surgeon—is distributed to OR management quarterly. The information

included on this report is transferred to LOTUS 1-2-3 for calculation of hours utilized per week to determine allocation of surgical blocks.

Surgical suite management reviews these reports for targets of opportunity. Additional reports can be generated that focus, for example, on the two or three services that have low utilization or that address strategic decision making.

The second overall qualitative benefit of the automated system is nurse and physician satisfaction. The nursing staff identified several benefits that resulted from the process of building physician preference lists. An immediate benefit was improved working relationships among staff, management, and physicians as the teams worked to define or refine supply and equipment requirements case by case and surgeon by surgeon. This task supports case cart implementation as well by encouraging identification of items required for backup as well as what specific items and equipment are required for procedural case carts. The indirect benefit of this process was the increased awareness of all the surgical staff of how consumption of supplies, equipment, and room time affected the total performance of the surgical suite. These case-by-case tasks also improved everyone's understanding and assisted in the

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standardization of terminology used within the OR environment.

The source of physician satisfaction was the benefits of one-call booking. This method of scheduling reduced telephone calls to inform the OR of procedure, to reserve equipment, and to inform the admitting office. With the implementation of the automated surgical suite system, TGH expects to recruit and accommodate new surgeons through better management of OR utilization schedules and to provide block-time scheduling. An additional benefit is the enhanced relationship with the University of South Florida School of Medicine and Department of Surgery, the result of streamlined scheduling for professors and residents as well as the provision of information for management for further study.

Other benefits

Significant overtime and its associated costs are a reality for most surgical services that use a manual OR schedule. A manual schedule difficult to efficiently manage because of unpredictable delays, cancellations, add-ons, time allocations, and so forth. The data provided by the OR Reporter module gave management the ability to develop the action plan that resulted in a drop from 13,399 hours of overtime in 1987 to 11,757 in 1988, a reduction of 1,642 hours, or 12.3%. The net savings from this reduction, \$32,840, were realized during the same time period that OR utilization increased by 10.8%.

One of the most pressing issues facing health care today is the critical shortage of nursing staff. TGH found that OR staff was relieved of considerable indirect care activities associated with manual schedul-

ing, data gathering, and inventory management, resulting in increased direct patient care hours.

The management engineering department of TGH maintains a hospitalwide productivity reporting system. The OR staff productivity increased during the period of the information system implementation. This improved staff utilization can be attributed to maximization of case volume within scheduled work hours, improved planning for staff utilization, and increased direct care time.

FINANCIAL CONSIDERATIONS

Costs

The costs of the project are defined as those expenditures above and beyond existing expenditures and include both one-time costs and ongoing costs. Typical *one-time costs* for an OR information system include the costs of site visits, hardware, software, furniture, conversion (temporary labor), and installation and training. *Ongoing costs* are defined as those costs necessary to maintain operations over the life of the project. They include the costs of maintenance; hardware and software, including upgrades; retraining; consumables (i.e., paper and printer cartridges); and staff.

Financial analysis

After the start-up and annual costs and potential savings were documented, the project team performed an investment payback analysis. "Payback is defined as the length of time need to break even from the cash outflows required to make a capital investment."¹

The analysis at TGH revealed a 247-day payback. Although this appears to be favorable, payback does not account for time value of money or for the rate of return. Managers are increasingly turning away from payback to internal rate of return and net present value analysis, an approach widely used in industry. As competition for limited capital resources increases in the health care environment, more hospitals will be using this technique to prioritize their capital investments.

The OR information system project was analyzed based on net present value and internal rate of return. The *net present value* "is the method of capital analysis that compares the difference between future cash inflows (revenue and/or reduced costs) discounted to the present at an assumed rate with all cash outflows similarly discounted."² *Net cash flows* are defined "as the difference between expected inflow (increased revenues, decreased lost charges, and inventory reduction) received as a result of the investment and expected cash outflow (associated one-time and ongoing expenses)."³ Table 7 shows the return on investment analysis at TGH.

IMPLEMENTATION IMPACT OF THE AUTOMATED SYSTEM

To date, almost two years following initial system implementation, several results are obvious. A more coordinated staff is committed to working with each other to perform surgical procedures in the most efficient and effective manner. The OR schedule has been improved to reflect true activity levels and to accommodate the expansion of surgical case volumes. In addition, positive impacts have been experienced in the areas of organization, supply

Table 7. Return on investment (ROI) analysis

	Start-up	Year				
		1	2	3	4	5
Cash outlays:						
Hardware	(52,200)					
Software	(26,044)					
Conversion cost	(12,800)					
Annual maintenance fee—software		(6,600)	(6,600)	(6,600)	(6,600)	(6,600)
Annual maintenance fee—hardware		(3,600)	(3,600)	(3,600)	(3,600)	(3,600)
Total cash outlays	(91,044)	(10,200)	(10,200)	(10,200)	(10,200)	(10,200)
Savings:*						
Lost supply charges recovered		37,433	74,866	74,866	74,866	74,866
Increased operating room profits contributed		109,943	219,885	219,885	219,885	219,885
Savings on inventory carrying cost		12,016	24,033	24,033	24,033	24,033
Total cash inflows	0	159,392	318,784	318,784	318,784	318,784
Net cash flow	(91,044)	149,192	308,584	308,584	308,584	308,584
Cumulative cash flow	(91,044)	58,148	366,732	675,316	983,900	1,292,484
Payback period (in days) based on net cost of investment						247 days
*All savings estimated at 50% of actual due to time necessary in first year to accomplish						
Present value at 15% discount	(91,044)	129,732	233,334	202,899	176,434	153,421
Total net present value at 15%	804,775					
Internal rate of return (discount rate at which net present value equals zero) = 217.90%						

management, materiel handling, management reporting, quality improvement, teamwork and problem solving, and project management.

Organization

As part of the implementation of the Standacare system, several existing posi-

tions were reassigned to support OR activities. The revised organizational structure included a materiel management coordinator responsible for enhancing the materiel management activities by utilizing the management reporting capabilities of the system. A second addition was the key operator, who enters data into the Standacare system. Initially a temporary, start-up position, the preference list builder is now a full-time permanent employee who manages the continual changes made to existing preference cards and assists new surgeons in developing their preference care lists. The preference list builder also works

The operating room schedule has been improved to reflect true activity levels and to accommodate the expansion of surgical case volumes.

closely with the instrument technician in the SPD department to ensure that the individual item file is matched to the information in the instrument file. The materiel management coordinator and preference list builder were not additional positions but were reassigned from exiting staff. With the changes in surgical scheduling to the automated system, two people now coordinate scheduling for 22 ORs. These two individuals routinely process between 80 and 135 schedule transactions daily.

Supply management

Early in the implementation process, the OR staff became aware of the need to ensure that an accurate item file or master catalog was maintained for all items used on the preference lists. To accomplish this, the surgical staff agreed to an approach based both on category and manufacturer's number. Information contained in the resulting generic file lists items by category, manufacturer, and catalog number. Physician preference lists were then entered by area of surgical specialty.

The orthopedic hand service was the first surgical specialty for which lists were built in the system. Once the initial preference requirements were identified, the OR staff standardized supply requirements, identified custom packs, and reduced or eliminated unnecessary items from case carts. This process refined PAR levels for various OR supplies with backup supplies maintained for contingencies.

Materiel handling

The OR Scheduler generates a surgical schedule between 5 P.M. and 7 P.M. on the

day preceding surgery. This report is supplemented by the OR Supplier, which then prints case cart pick lists. Personnel in SPD subsequently pick the requirements for each cart, which is then queued for transport to the OR. After the procedure is completed, the case cart is returned to SPD, and patient charges are processed to the finance department. The method that is used at TGH is to charge by procedure plus specialty items and to credit items not used. In this manner, the data entry process is minimized by using a credit against the preference list for that case and surgeon.

Management reporting

The OR staff has reached its original expectations and now has regular reports and information on physician utilization, room use, and so forth. Key results that have been attained include one-call booking, reduced turnover time, improved productivity, improved staffing, and reduced overtime.

Quality improvement

Improvement in the overall quality of the operative record has occurred, including improved documentation of needle counts, more accurate start and finish times, and more accurate spelling of staff names.

Teamwork and problem solving

The system process had a Hawthorne effect: Because its installation required input from various departments for resolution of problems, departments learned to work together and continued to do so later to solve problems that were not system related. All task force committee members

had clear direction and received significant support from top management. This support resulted in a group of confident people who became well skilled in problem resolution through cooperative interaction. It is interesting to note that many of the improvements took place before the system was installed but would not have taken place without the commitment to implementing an automated surgical suite management information system.

Project management

TGH developed and maintains a project management plan that includes several "action committees." The OR/SPD Charge Conversion Committee is formed by representatives from the OR, SPD, management engineering, finance, and systems departments. The Preference List Committee is composed of members from the OR, SPD, finance, and systems departments. One-Call Booking Committee members represent the OR, one-day surgery, admitting, preadmission testing, physician relations coordinator, and systems departments. The Item File Committee consists of representatives from the OR, SPD, purchasing, finance, and systems departments. And the Standacare User Group includes OR, SPD, purchasing, pharmacy, and systems department members. The committees report to the Implementation Task Force chaired by

the vice president of Patient Services and vice president for Materiel Services.

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A year following initial system implementation, significant results were achieved. The entire process resulted in improved operational management, the establishment of inventory and financial controls, and the ability to heighten staff and physician satisfaction. Throughout the process, a high degree of coordination, planning, and interaction was achieved through the dynamics of the team approach. Teamwork among the administration, OR management, materiel management, finance, and data processing departments was the key to the success of the automated OR system. In turn, teamwork brought about a new esprit de corps that often escapes health care personnel in their activities.

The Tampa General Hospital is enthusiastic about the benefits provided by the Standacare system. For the past two years, TGH has maintained its position as the leader in projected gross revenues for the state without an increase in base room rates. As a result of the Standacare system's technical and qualifiable benefits, together with the dedicated efforts of each department's staff, The Tampa General Hospital can now more effectively meet the future in the ever-changing health care environment.

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