Case Costing Means, Measuring and Managing Now!

The Journey Traveled by A Community Hospital

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Health care is in chaos as organizations try to balance mergers, closures, downsizing, and funding reductions, with provision of care that is timely, appropriate, effective, current and valued by consumers.

Abstract

Funding for health care in Ontario is moving from global funding to equity funding. In the future, hospitals will be reimbursed for how efficiently they care for their various patient populations. The Ontario Case Costing Project (OCCP) was a joint venture by the Ontario Hospital Association and the Ministry of Health. Incentive for participation in this project was based on the need to assess efficiencies in caring for patient populations in surgical suites and to obtain Canadian data. Case Costing has the potential to forecast budgets, identify variances and highlight areas for cost savings. Case Costing can also determine cost per surgeon, cost per service, cost per procedure. The nurses at Markham Stouffville Hospital are empowered to enhance the focus of their practice to include managing human resources, processes and materials. This enhanced focus in the Operating Room maximizes efficiency and effectiveness of processes, and allows the organization to provide better service. This article documents the journey and growth of perioperative nurses toward the destination of case costing. Key to this journey is not only the destination, but the growth and change that occurred and enabled perioperative nurses to effectively champion initiatives such as case costing. Opportunities and Threats, a One Page Plan and our recommended learnings will be shared.

The conceptual framework in which health care provision has existed for the past century has been challenged. Advanced technology, the knowledge explosion, new drugs, new treatments and new roles have contributed to the expectation of constant change in health care. Health care institutions are organizations that are dependent on the effectiveness of systems and processes, the ability to develop capabilities of people and the ability to create value for the customer in order to exist. Nurses can play a central role in health care delivery by enabling changes that allow the system to offer better service and quality. Nurses who have the capabilities to actively participate in change can create processes that improve outcomes, are value added and reduce cost.

Nurses at Markham Stouffville Hospital are empowered to enhance the focus of their practice to include managing human resources, processes and materials. This enhanced focus in the Operating Room can maximize the efficiency and effectiveness of our processes, and allow our organization to provide better service.

Perioperative nurses have experienced many different systems of health care delivery in their training and their worklife. This article documents the journey and growth of nurses to the destination of case costing. Key to this journey is not only the destination, but the growth and change that occurred to enable perioperative nurses to effectively champion initiatives such as case costing.

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The History

Less then ten years ago, health care organizations were viewed as the place to receive health care that was directed and controlled by physicians. Health care organizations were bureaucratized, orderly and routinized to create efficiency. There were functional departments, precisely defined jobs, and multiple policies and procedures to direct processes. The majority of perioperative nurses were trained and spent many years working in this environment. Nurses were told what to do and if they were not told or unsure, there was a policy and procedure to direct them. The necessity of orderly, routinized, precisely defined processes in the perioperative area nurtured the concept of a bureaucratic organization.

Markham Stouffville Hospital is a comrnunity hospital that received of the Excellence in Quality Award presented by the National Institute for Quality and was awarded a Four Year Accreditation Award. The hospital opened its doors eight years ago based on a philosophy of hiring only the best people and then teaching them the best way to do the job. These people were then tested and certified on their ability to follow prescribed methods to complete job related tasks. The organization ensured there were extensive policies and procedures in place before opening, so no one would have to rely on thinking or decision making to determine the best process. The long range plan was to test all nurses once a year to validate that they had not forgotten what they were told to do. This bureaucratic organization works well when tasks are straightforward, and the environment is stable. There is a need to produce the exact same product; precision is necessary, and people in the organization are compliant and behave as they have been designed [educated] to do. This environment no longer exists and bureaucratic organizations cannot keep up with health care reforms.

The Culture Change

In 1992, Markham Stouffville Hospital moved from a traditional bureaucratic organization to a Program Management Structure. Structural changes included a delayering of the levels of hierarchy. Abolishment of initial certification and yearly recertification was implemented. Policies and procedures were reduced to only the essential process and structure standards. Cultural changes that occurred began with the new mission statement of "Make it Great!" The new mission was implemented with much discussion of sharing the meaning and interpretation of the mission. Over the next three years organizational beliefs and values were reinforced in the language and activities of the organization. The culture of Markham Stouffville Hospital encourages empowerment, autonomy, accountability, patient focused care and involvement in strategic planning. Professionals felt they were truly empowered and internalized the responsibility to achieve the mission and maintain the culture. Professionals thrived in this new culture where they were empowered to do their jobs to the full capacity of their practice.

Ontario Case Costing Project

The Ontario Case Costing Project (OCCP) was a joint venture by the Ontario Hospital Association and the Ministry of Health. The incentive for participation in this project was based on the need to assess efficiencies and to obtain Canadian data. The goals of OCCP were:

- To use patient specific data to create Ontario Case Weights.
- To measure and manage financial information.
- To add value to management decision making process.

Funding for health care in Ontario is moving from global funding to equity funding. Hospitals will be reimbursed for how efficiently they care for their various patient populations. Case Costing has the potential to forecast budgets, identify variances and highlight areas for cost savings. Case Costing can also determine cost per surgeon, cost per service, cost per procedure. Markham Stouffville Hospital was interested in supporting the information collection involved in case costing. However, for this information to be of value to Markham Stouffville Hospital and the Surgical System it was necessary to do micro case costing. Since OCCP only documents costs greater than two hundred dollars, we decided to cost supplies to the penny. Obtaining information that details costs would allow us to analyze any variances in cost between procedures, between surgeons and between services. This detailed information would also provide opportunity to review practice patterns and adjust case supplies.

Immediate outcomes of participation in the OCCP included reports that can be used to accurately forecast budgets by identifying variances and areas for cost savings. OCCP information can be used to determine internal best practices and improvement opportunities. There is also an opportunity to compare and benchmark best practices beyond our walls, among

the collective of hospitals participating in this project. Finally, the case costing project can demonstrate a fiscal responsibility that allows the organization to maintain a wide range of general services and excellent quality patient care.

One benefit for perioperative nurses participating in case costing is the opportunity to identify areas for cost savings and improvements. Perioperative nurses have knowledge of perioperative practices, standards of care, surgeon preferences and expected clinical outcomes. Perioperative nurses at Markham Stouffville Hospital function with expertise in perioperative care, and with a knowledge of cost and resource management. These capabilities enable the perioperative nurses to actively participate in change. The learning opportunity was to enhance the role of perioperative nurse to include micro-costing of supplies and equipment, and to apply comparative analysis to the generated reports.

Implementation of the Ontario Case Costing Project

Implementation of this project required an organizational commitment, a project team, financial information systems, an OR information system (HBOC's Surgi Server), automated materials management system, workload measurement system interfaces and dollars. Potential opportunities and threats in implementing case costing in the Operating Room are presented in **Appendix A**.

Success of this project was dependent on Senior Management's commitment in principle and in funding for a workload system, an automated materials management system, system interfaces between the Surgi System and the hospital computer system, and adequate human resources. The Strategic Plan of the organization, and the beliefs and values of the hospital had to be supported for effective implementation of this project. The case costing project promoted the values and beliefs of our organization. That is, case costing requires empowerment, a focus on quality improvement, improved service and a customer focus.

An essential starter kit for the Ontario Case Costing Project requires: HBOC Surgi-Server System (or other software capable of supply management), Meditech Supply Management Module, a Surgical Case Cart System, Workload Measurement System and a Data Flow Model. The Surgi-Server System was a major improvement as it has the capabilities to monitor, evaluate and adjust many of the necessary processes of surgery. The components of the HBOC Surgi-Server include: Patient Scheduling System, Supply Management Module that tracks and uploads supply/implant data, Surgeon preference cards, Pick lists for case carts and Case Costing reports.

Case Costing provides a language based on facts and numbers, a very specific language. However, this language is clearly not reflective of our culture of "Making it Great!" In presenting this project to the staff in the Operating Room we had to ensure that the Case Costing Project fit with the organizational culture. The fit became apparent when controlling costs allowed the system to reinvest saved dollars to increase surgical volumes and decrease waiting lists for surgery. It was very important for staff to hear that we were not just trying to cut costs, but were we trying to improve service with a positive result for our patients. The ability to increase the number of elective surgeries and decrease our patient's wait for surgery was the way we would "Make it Great".

Implementation issues involved increased human resources, information systems, finance support and an excellent relationship with Materials Management. The human resource component of implementation required staff meetings and a communication network to discuss the goals, issues and concerns related to this project. Job loss is always a concern. This project however, had the potential to create more employment opportunities when the volumes of surgeries were increased. Staff input was imperative for success. The perioperative nurses are the experts in surgical preferences and they needed to know the impact on their role and responsibilities in order to keep the system current. The influence the staff can have on the budget was discussed by explaining the process, the effects of variance and the possibilities for improvement. The nursing staff were given the opportunity to identify areas for cost savings and propose changes to physicians.

The supply and cost information is being collated to specific procedures, to individual patient cases and to individual surgeons. Surprisingly, the doctors were not adverse to the information being used for comparative purposes or for discussion. This information enabled nurses to talk to the doctors in the language of facts and numbers. The doctors were responsive to the data and interested in discussing variance pattems. The variance pattern found in procedures such as Abdominal Hysterectomy showed *some* variance in the different supply costs between doctors **(Figure 1).** However, in life *some* variance is to be expected. Therefore, a variance pattern such as this is not of great concern. However, variances that are significantly over or under the average are definitely worth further discussion. The supply cost for Anterior Cruciate Ligament Repair **(Figure 2)** presents a very different variance pattern. Further information should be obtained when variances such as this pattern is observed.

A note of caution: all of this information must be analyzed within the context of clinical outcome and post operative processes. That is, more expensive surgical procedures may have better clinical outcomes and they may also reduce length of stay. Finally, this detailed cost information based on surgical procedures can also be used to predict the cost of a new surgeon based on his case mix. To summarize the implementation process we have included a One Page Plan for implementing case costing **(Appendix B).**

The Evaluation

Presently, the staff are acutely aware of the budget, and methods of cost saving. The staff can also discuss cost savings in a credible and creative way. The nurses have internalized their expanded role related to managing resources, both human and material.

One outcome that was very quickly achieved was the ability to report case costs. Some of the improvements that were implemented and reflected large cost savings included suture utilization and the change from disposable to reusables. The savings found equaled twenty-five percent of the salary of a full-time nurse or surgery for five arthroplasty patients. The more challenging outcomes have been accurate utilization of supplies, appropriate utilization of staff resources and eliminating waste. Some of our ongoing issues are the cost updates and the case cart requisitions. There is also an ongoing effort to obtain user friendly reports.

The future of the Case Costing Project at Markham Stouffville Hospital is to continue participation in order to benchmark best practices externally. Simultaneously, we will continue to micro-cost for our internal benchmarking of best processes and practices. This project did require a significant commitment of the organization to human and material resources, and costs. The benefit has been the opportunity for perioperative nurses to enhance their scope of practice and to have data to support practice changes that result in positive clinical outcomes, and a cost effective and efficient service. The indicator of quality care in perioperative nursing is when patient needs and expectations are met by a cost effective and efficient service of care that results in an expected outcome.

Appendix A

Opportunities	Threats
• Expanded role for nurses	• More Work
• Practice guidelines for surgical procedures	• Cook book medicine
• Identify and reduce waste	• More Cuts
• Increase efficiency	• Are you saying we aren't efficient
• Increase cost savings	• No end to the penny pinching
• Increase numbers of surgical procedures done	• More work

Appendix B

Implementation: The One Page Plan

What Does It Take ?

✓ Organizational commitment
✓ Committed project implementation team
✓ Financial information system
✓ Automated materials management system
✓ Workload measurement system
✓ System interfaces
✓ Dollars !!!!

Who Does It Take ?

* PCC - Project Leader
* Cost Accountant
* IS Support
* SPD/Materiels Management Expert
* OR Staff
* Vendors

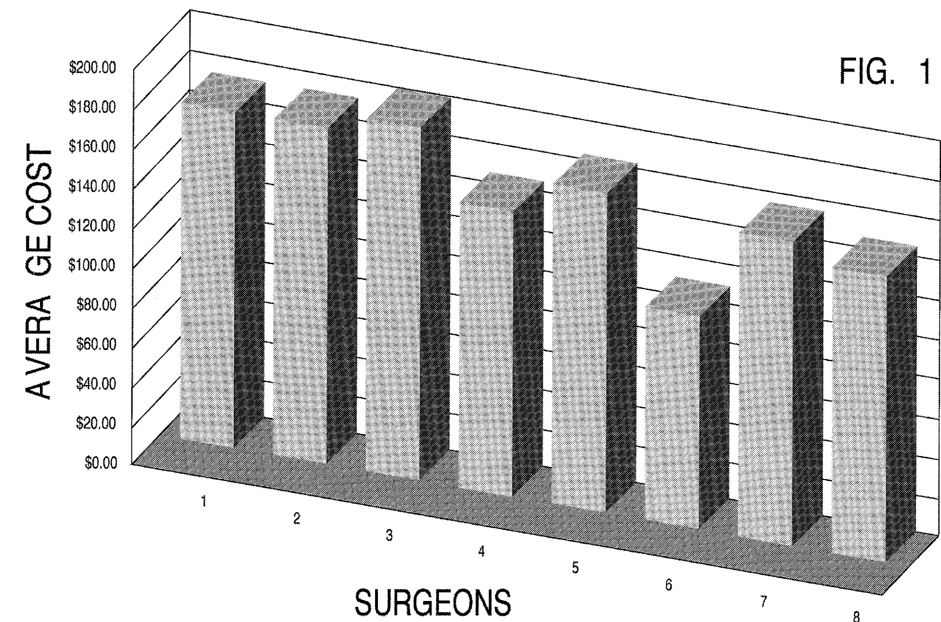
Our Starter Kit:

- Surgi-Server System
- Meditech Case Costing Module
- OR Workload Measurement System
- Data Flow Model

SUPPLY REQUISITION

Procedure: KNEE ARTO KNEE ARTHROPLASTY, TOTAL REPLACEMENT Surgeon:______________
Last Supply List Update: 20/06/97

Number Req Iss	Item Code H	Description	Location	Charge	Total
1	00001083	HOWARTH ELEVATOR	*SPD		0.00
1	00001408	CEMENT MIXEVACII20610	*SPD	52.50	52.50
1	00003777	ORTHO CEMENT SIMPLEX 6191-0-000	*SPD	34.20	34.20
2	4150022	GARBAGE BAG BLACK 26"X 36" CRB-26300	*SPD	0.18	0.36
2	4150023	BAG GARBAGE RED 36" X 40 "	*SPD	0.16	0.32
1	4600158	DRAIN WOUNDEVAC 1/8"	*SPD	13.00	13.00
1	4600191	STOCKINETTE IMPERVIOUSSMALL	*SPD	9.07	9.07
1	4600194	CAUTERY SCRATCH PAD	*SPD	0.92	0.92
1	4601277T	TONGUE DEPRESSORS	*SPD	0.01	0.01
1	4601321	BLADE SCALPEL STERILE #15	*SPD	0.28	0.28
1	4601322	BLADE SCALPEL STERILE #20	*SPD	0.28	0.56
1	4601430	SUCTION YANKAUER TIP	*SPD	1.00	1.00
1	4602345	GLOVE ANSELL NO POWDER 8.0	*SPD	1.03	1.03
1	4602788	DRESSING TELFA PAD 20CM X 7 LARGE	*SPD	0.33	0.33
2	4603446	SUCTION LINER 1500CC	*SPD	1.75	3.50
1	4603790	SOLUTION NORMAL SALINE POUR BOTTLE 500ML	*SPD	1.08	1.08
1	4604293	CAUTERY PENCIL VALLEY LAB	*SPD	5.50	5.50
1	4604587	FILTER ANAESTHETIC CIRCUIT I281942-T	*SPD	5.80	5.80
1	4604599	GLOVE ANSELL NO POWDER 7.5	*SPD	1.03	1.03
2	4606138	SPONGE LAP STERILE 18 X 18	*SPD	0.46	0.92
1	4606148	DRAPE BACK TABLE COVER	*SPD	4.76	4.76
1	46590004	PACK TOTAL KNEE BAXTER SOP30TKMKB	*SPD	48.93	48.93
2	46600017	DRESSING GAUZE 8 X 4 STERILE	*SPD	0.09	0.18
1	ANMAS	ANESTHETIC MASK ADULT	*SPD		0.00
2	BASINS	STAINLESS STEEL BASIN	*SPD		0.00
1	GOWN	GOWN PACK DOUBLE	*SPD	4.44	4.44
1	GOWNS	GOWN PACK SINGLE	*SPD	2.70	2.70
1	INST0073	RAKES 4-PRONG SHARP	*SPD		0.00
1	KNET	TOTAL KNEE INSTRUMENT PANS X 4	*SPD		0.00
1	ORTHO01	MAJOR BONE # 1	*SPD		0.00
1	ORTH002	MAJOR BONE # 2	*SPD		0.00
1	ORTH042	STRYKER REAMER	*SPD		0.00
1	ORTH046	STRYKER SAG.SAW BATTERY & BLADES NEW	*SPD		0.00
1	ORTH064	DRILL BITS	*SPD		0.00
1	ORTH065	VICE GRIPS	*SPD		0.00
1	ORTH068	COBB ELEVATORS	*SPD		0.00
1	ORTH069	SMALL MALLET	*SPD		0.00
1	ORTH098	RIBBON OSTEOTOMES	*SPD		0.00
1	TOWELS	TOWELS (2 PER PACKAGE)	*SPD	2.70	2.70
1	00010342	BLADE SAGGITAL SAW 2108-385	OR	45.00	45.00
1	4601492	NEEDLE ANGIOCATH 2OGA X 2"	OR	0.98	0.98
2	4602057	SUTURE VICRYL 2-0 J259H	OR	2.04	4.08
2	4602461	SUTURE VICRYL 1-0 J281H	OR	2.04	4.08
2	4602753	DRESSING FLANNEL 6"	OR	1.78	3.56
1	4603780	SOLUTION IV 0.9%NoRM SALINE 100ML	OR	1.05	1.05
1	4604145	IV ANESTHESIA PIGGYBACK SET	OR	4.89	4.89
1	4604291	CAUTERY PAD ADULT	OR	3.60	3.60
1	4604382	TUBE ENDOTRACHEAL 7.5 W/CUFF SHERIDAN	OR	1.62	1.62
1	46540019	STAPLE SKIN DISPOSABLE PTW35	OR	6.83	6.83
1	LAUND	LINEN BAGS	OR	0.22	0.22
1	4601420	GYPSONA SLAB 12.5CM x 75	ORCASTCT	0.58	0.58
					$271.63



Average Supply Cost - Abdominal Hysterectomy

Why Bother ?

Quick and Easy Outcomes:

- ➔ **suture utilization**
- ➔ **disposables to reusables**
- ➔ **reports**

Not as Quick /Not So easy Outcome:

- ➔ **accurate utilization of supplies**
- ➔ **appropriate utilization of staff resources**

References

Bolton Burnes, L., Aydin, C., Popolow, G. & Ranseyer, J. (1992), Ten Steps for managing organizational change. *Journal of Nursing Administration,* 22(6), 14-20.

Clayton, B.F. (1997), Intraoperative case management. *Surgical Services Management,* 3(6), 37-40.

Duck, J.D.(1995), Managing change: the art of balancing. *Harvard Business Review,* 71(6)109-118.

Morgan, G. (1986), *Images of Organization.* Newbury Park: Sage Publications, Inc.

Morton, P.J. (1996), Growing with change. Influencing attitudes can yield practice outcomes. *Surgical Services Management,* 2(3), 34-36.■

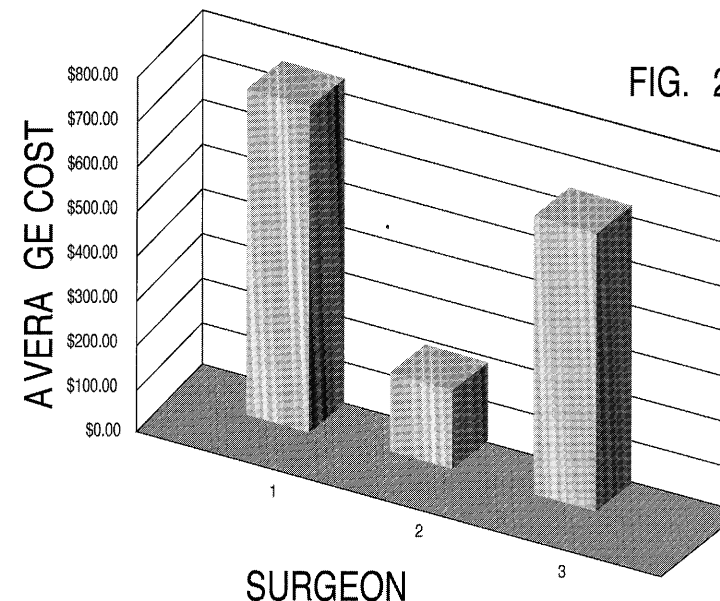


Figure 2
Average Supply Cost of Anterior Cruciate Ligament Repair