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Improving our practice: A time for oncology nursing leadership

By Sherrol Palmer-Wickham

*From a distance, the world looks blue and green,
and the snow capped mountains, white.
From a distance, the ocean meets the stream,
and the Eagle takes to fly.
From a distance, there is harmony, and it echoes through the land,
It's the voice of hope,
It's the voice of peace,
It's the voice of every man.*

(Julie Gold)

When we picture our medical institutions, we see them from a distance: large or small, safe, helpful, with adequate staff, space, and resources. But, if we look closer, we see that all is not as it seems from a distance. From the headlines we read:

"Medical mistakes are responsible for as many as 10,000 deaths in Canada every year" (Shoesmith, 2002).

"100,000 people die each year in the U.S. as a result of medical errors" (Kohn, Corrigan, & Donaldson, 1999).

"Negligence charges against nurses dropped" (Shephard & Levy, 2003).

"Why do I have to wait so long to see the doctor?" (patient, personal communication, Sept. 2002).

About 12 years ago, I was preparing to administer cyclophosphamide, methotrexate, and fluorouracil (CMF) to a patient. She was lying down and I was talking to her with her chart and orders in front of me. I removed the drugs from the zip-lock bag and started to check the drugs. I had a syringe of red liquid in my hand and the patient said what I was thinking, "Those are not my drugs." This incident started me on my first steps into the quality improvement (QI) arena as I tried to understand how this incident could happen and how it could be prevented in the future. Unfortunately, judging by the four statements above from newspapers and journals during the last year, when you look closer, the system still needs work and improvement.

Quality improvement

Quality has been defined in many ways. Laura Adams (2002) defines quality as *meeting the needs and exceeding the expectations of those we serve; and delivering all and only the care that the patient and family needs*. The second part of this definition is most important to me because it speaks to the patient's needs and not those of the health care professional or organization.

Every system is perfectly designed to achieve exactly the results it gets. This phrase has been used to launch many improvement projects, because systems or processes are not working. Problems are often attributed to people or teams/groups. However, many times the process is not examined because it is more difficult and takes longer than expected to examine and requires talking to other groups or teams who are often viewed as the cause of the problem! I say take up the challenge and look more closely at the processes!

The goal of process improvement is to reduce variation and the number of steps in processes. Quality improvement in nursing is often criticized because it calls for the reduction of variation and it is viewed as not "patient-focused" or individualized. However, in QI, we are reducing the variation in **processes**, not in the **interventions**. The intervention remains individualized and according to the needs of the patient and family. The process of assessing needs should be the same regardless of which nurse the patient encounters.

Quality improvement methods

There are several tools or methods one can use to guide the QI process. One method used in the USA is the six-sigma process (Lanham & Maxson-Cooper, 2003). Sigma is a statistical unit of measure of variability which reflects the likelihood that an error will occur. Six-sigma reduces the likelihood of error to 3.4 errors per million or a 99.9996% success rate. The process focuses on the elimination of defects by identifying and reducing variability, eliminating errors, and applying controls to maintain improvements. If the idea of reducing error occurrence to six-sigma seems a daunting task, the following may convince you otherwise. If 99.9% were good enough:

- there would be a major plane crash every three days
- 16,000 pieces of mail would be lost by the U.S. postal service every hour
- 12 babies would be given to the wrong parents every day
- 37,000 ATM errors would occur hourly
- 20,000 incorrect prescriptions would be written hourly
- 107 erroneous medical procedures would be performed every day (Minden, 2003).

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The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) of the U.S. also has a methodology it suggests for improvement (JCAHO, 2003). According to the JCAHO, one must assign the scope of care, delineate responsibility, identify important aspects of care, establish thresholds for evaluation, collect and organize data, evaluate care, take action, assess the effectiveness of actions, and communicate information.

The Canadian Council on Health Services Accreditation (CCHSA) uses the Achieving Improved Measurement (AIM) approach to quality improvement and measurement (CCHSA, 2003). Achieving Improved Measurement's primary purpose is to

help organizations evaluate the quality of care they provide and measure their clinical and operational performance more accurately.

Other groups have adopted Root Cause Analysis (RCA) as a method to analyze adverse events and near misses and to make improvements (Gosbee & Anderson, 2003). RCA brings together managers, clinicians, technicians, etc., to answer three questions, "What happened? Why did it happen? and What can be done to prevent it in the future?" (Gosbee & Anderson, 2003). Another way of getting to the root cause is to ask "Why?" five times. When a problem is identified, ask "Why did this happen?" After you have the answer, ask "Why?" again and again until you have the systemic or root cause (Scholtes, 1998). An example of the five whys:

1. *Why* does a patient's intravenous run at the wrong rate? The previous nurse did not change the run rate.
2. *Why* didn't the previous nurse change the rate? The doctor's order had gone to the pharmacy and the medication administration record (MAR) was not updated.
3. *Why* wasn't the MAR updated? The MAR is updated once per day.
4. *Why* is the MAR updated only once per day? The hospital has chosen to use oral instruction for updates that happen more frequently.
5. *Why* are oral instructions used? The process was constructed a decade ago, when medication orders changed less frequently due to longer lengths of stay. Upon further study, the hospital determined that 40 to 45% of its orders change daily (Anonymous, 2003).

The method of improvement this author uses is one based on the work of W. Edward Deming (1994) that identifies the elements of knowledge that underpin improvement. There are two parts to the improvement process (Langley, Nolan, Nolan, Norman, & Provost, 1996). The first part asks three questions (see Figure One):

1. *What are we trying to accomplish?* This is your aim statement or objective and the reason for doing the change.
2. *How will we know a change is an improvement?* This statement asks what will you measure, how will you know something has changed?
3. *What change can we make that will result in improvement?* The answers to this question will ensure you do not change just for change's sake. There should be an improvement.

The second part is the PDSA cycle (see Figure Two):

P - is Plan. At this stage, the objective is known and you plan your course of action to achieve your aim.

D - is Do. Carry out the plan and document the problems, successes, and measures.

S - is Study. Did you achieve what you intended? Why not? What did you learn from the cycle?

A - is Act. Do you make modifications to the plan and try another cycle? Do you collect additional data? Did you achieve your aim?

I find this method to be the most helpful because one is forced to study the improvement efforts and, when you do not achieve the results you want, you **always** learn from the process.

Figure One: The model for improvement

Figure Two: The PDSA Cycle

Teamwork and collaboration

The success of QI depends on teamwork. As Shamian (2003) noted, *"Like those who climb Everest, we will get nowhere without teamwork."* Avenues to promote teamwork include establishing a quality council, a nursing practice council, and a continuous quality improvement team. These collaborative teams can work on a variety of areas such as patient safety. They might examine the incidence of patient falls and then develop a program to decrease the number of falls. The teams may provide the structure to implement recommendations of safety or accreditation organizations such as those from the SARS probe or the Institute for Safe Medication Practices (ISMP). The ISMP and ISMP-Canada have released reports on safety issues with patient-controlled analgesia (ISMP-Canada, 2003), and how multifactorial system problems led to a chemotherapy mishap (ISMP-Canada, 2002). As a result of reports such as these, many institutions have examined their processes and implemented changes to reduce the possibility of human error and harm to patients.

QI teams or health care organizations often work together for six to 18 months to improve a specific clinical or operational area. Over this period of time, the team members study, test, and implement the latest knowledge to produce rapid improvements and make an intensive effort to create significant change. A successful team provides the necessary clinical, technical, and social support to help make dramatic improvements in a needed area. An effective QI process typically involves expert panels, learning sessions, action periods, and ongoing communication and consultation to ensure the goal is met.

One example of an organizational goal for QI is to improve practice through effective pain management. In one metropolitan hospital, 10 teams worked collaboratively to try to achieve improvement in pain management across multiple clinical areas, from NICU to long-term care, and from trauma to oncology. Some of the interesting projects they explored included the use of Demerol® in the emergency room, reducing the number of heel-sticks in neonates, and pain assessment in the cognitively impaired.

Error reporting

We shouldn't punish people who report mistakes. Rather, we should look upon the mistakes as evidence, clues if you will, of a faulty system, and create an environment where people feel comfortable about reporting and discussing them (Leape, 2003).

The fear of reprisal may hold people back from admitting they have made an error. However, we need to change the way we look at errors and find new ways of examining the issue. Focusing on the harm, rather than the error becomes important. Developing guidelines, such as the JCAHO (2003) guidelines on limb identification, will help reduce the incidences of harm and, ultimately, will be more beneficial to everyone.

One way of making this shift towards harm reduction rather than punishment for errors is to create an atmosphere of transparency, i.e., where it becomes acceptable to openly admit that an error has taken place. Transparency involves a shift from refusing to believe that an error has happened to accepting responsibility and admitting the error. At first, a person may say, "The data are wrong." Then they move to "The data are right, but it's not a problem." The next stage recognizes that the data are right and there's a problem, but "it's not my problem...." Finally, the individual verbalizes that "the data are right, it's a problem, and it's my problem." An example of the fourth stage is from 2002 when Ryan Lucio died of a cancer drug overdose. There was neither evasion nor an attempt to shift blame. Instead, Dr. Simon Davidson, chief of medical staff at the Children's Hospital of Eastern Ontario, admitted the hospital was at fault and talked openly about what happened.

Nurses make a difference to patient outcomes: We all can lead!

How can nurses make a difference to patient outcomes by using QI methods? Graham and colleagues (Graham, Pecoraro, Ventura, & Meyer, 1993) used a quality assessment and improvement approach to reduce the incidence of stomatitis among patients who were receiving chemotherapy or chemotherapy and radiation. They examined the appropriateness of assessment, interventions, and patient teaching initiatives so they could make a difference to patients. The work of these nurses at the unit level influenced positive outcomes in preventing the incidence of chemotherapy-related stomatitis among their patients.

In another example of nurses making a difference through QI, Jacobs, Bonuck, Burton, and Mulvihill (2002) conducted an institutional assessment of hospital care at the end of life. They held focus groups for physicians and nurses, and also interviewed family members of patients. They identified factors, opportunities, and barriers that influence end-of-life care, and then implemented changes using a QI approach because it encouraged interdisciplinary participation and showed that interventions were not the sole responsibility of the physicians.

Recognizing the need to integrate research into practice in a cancer centre, Patton (1993) employed action research and the process of continual quality improvement in order to facilitate research conduct and utilization in this setting. Processes and structures were set up to encourage and support the efforts of those involved in trying to integrate research into practice. Patton summarized that, when used in a decentralized, shared-governance system, a continuous quality program can exert a continuous, refining pressure on the nature of nursing and on the quality of care.

A final example involves staff nurses who made a change in practice related to peripherally inserted central catheter (PICC) lines and thrombus formation (K. Beattie & J. Wilson, personal communication September 15, 2003). As is the practice in many institutions when a PICC line is accessed, nurses on this unit aspirated a small volume of fluid (heparin) from the line to ensure patency. However, a patient's spouse asked the nurses to aspirate the full amount of Heparin from the PICC line. A two-inch clot was aspirated from this line. During the course of a day, lines of other patients were also aspirated and two more patients were found to have clots. The nurses then decided to conduct a study of all patients with PICC lines to determine if there was a problem with the various types of PICC lines, and to document what procedure had changed.

In the first month, five patients had clots aspirated and all were with PICC A. The nurses met with a company representative and various stakeholders. Although the nurses were confident that their flushing technique was appropriate (using positive pressure), they initially chose to try an anti-reflux device. So, they started an eight-week trial of the anti-reflux device, but after four weeks of this trial, the number of clots aspirated was increasing! The nurses knew they had a problem, because all clots were with PICC A. So, after a discussion with the anti-reflux device manufacturer, the staff all agreed to attend another in-service on the use of the anti-reflux device. There was no improvement noted after this in-service, so the nurses notified the medical oncologist of the results and asked for suggestions. They met with the hematologist and obtained a new protocol for clot management for the next 20 patients:

All patients with clots aspirated, flush lines with heparin with 100 units/ml

Patients will be sent for a Doppler study within a few days

If the patient has a second clot aspirated, increase heparin to 500 units/ml. If a third clot is aspirated, increase heparin to 1000 units/ml.

The nurses assessed 47 patients and three types of PICCs (A, B, and X). All of the PICC lines were made of the same material – polyurethane. Sixteen of the 35 patients with line A or X had clots. There were 20 incidences of clots (four patients having more than one clot). In all of these incidents, the PICC lines were type A or type X. There were no cases of PICC line B producing clots. One patient had a positive Doppler. Although some patients were on coumadin and low molecular weight heparin prior to having a PICC, they still developed clots. The nurses' level of frustration was high and the suggestion from radiologists, daily flushing, was not feasible. So, the nurse manager and nurse supervisor recommended that only PICC B should be used for oncology patients despite the increased cost to the oncology program. All the stakeholders accepted this recommendation and the nurses were very happy. The practice continues to this day, and the nurses are consulted for all vascular access device changes and issues.

The future of quality improvement

Nurses must provide evidence-based care to meet the requirements of our regulatory bodies. Wallin, Bostrom, Wilkblad, and Ewald (2003) reported that sustainability in changing clinical practice promotes evidence-based nursing care. Nurses who continue to participate in QI work report actively searching the research literature. They also participate in research-related activities and implement research findings. Sustainability in QI work is significantly related to supportive leadership, facilitative human resources, increased activity in seeking new research findings, and implementation of research findings.

The QI process ultimately depends on professionals taking responsibility for ensuring standards of care as they interact with patients and families. Administrative leaders must foster a culture of quality improvement in processes and care, but nurses can be leaders too, by incorporating research and new ideas into their practice using a QI approach.

QI is the systematic examination of processes, variations, and systems to make improvements. The process of making changes and improvements can be carried out in many ways. The PDSA cycle is one method used by many hospitals, institutions, and organizations to institute change. Although QI is often viewed as the leader's job, or the responsibility of a quality assurance department, it is everyone's responsibility. It can be done one-on-one by an individual reporting and investigating an error, by a team of nurses incorporating new evidence into care, or by an institution following the recommendations of a governing body. Most of all, it takes leadership to look more closely at our processes and practices. Look at them from closeup, not from a distance. ♣

*From a distance, we all have enough, and no one is in need.
There are no guns, no bombs, no diseases,
no hungry mouths to feed.
From a distance, we are instruments,
marching in a common band,
Playing songs of hope,
Playing songs of peace,
They're the songs of every man.*

(Julie Gold)

References

- Adams, L. (2002, December). **Fundamentals of quality improvement**. Workshop presented at the 2002 National Forum on Quality Improvement in Health Care, Orlando, FL.
- Anonymous. (2003). **Ask "Why" five times to get to the root cause** [Improvement Tips]. Retrieved September 15, 2003, from www.qualityhealthcare.org
- Canadian Council on Health Services Accreditation (CCHSA). (2003). **Achieving improved measurement**. Retrieved September 15, 2003, from www.cchsa.ca
- Deming, W.E. (1994). **The new economics**. Cambridge, MA: Center for Advanced Engineering Studies, Massachusetts Institute of Technology.
- Gold, J. (1990). *From a distance* [Recorded by Bette Midler]. On **Some peoples lives** [CD]. Atlantic Records.
- Gosbee, J., & Anderson, B. (2003). Human factor engineering design demonstrations can enlighten your RCA team. **Quality and Safety in Health Care**, 12, 119-121.
- Graham, K.M., Pecoraro, D.A., Ventura, M., & Meyer, C.C. (1993). Reducing the incidence of stomatitis using a quality assessment and improvement approach. **Cancer Nursing**, 16, 117-122.
- ISMP-Canada. (2002, July). **Multifactorial system problems lead to chemotherapy mishap**. Retrieved September 15, 2003, from www.ismp-canada.org
- ISMP-Canada. (2003, July). **Safety issues with patient-controlled analgesia Part 1 - How errors occur**. Retrieved September 15, 2003, from www.ismp-canada.org
- Jacobs, L.G., Bonuck, K., Burton, W., & Mulvihill, M. (2002). Hospital care at the end of life: An institutional assessment. **Journal of Pain and Symptom Management**, 24, 291-298.
- Joint Commission on Accreditation of Healthcare Organizations. (2003). **Universal guidelines established**. Oakbrook Terrace, IL: Author.
- Kohn, L.T., Corrigan, J.M., & Donaldson, M.S. (1999). **To err is human: Building a safer health system**. Washington, DC: National Academy Press.
- Leape, L. (2003). **Patient safety**. Retrieved June, 2003, from www.qualityhealthcare.org
- Langley, G.J., Nolan, K.M., Nolan, T.W., Norman, C.L., & Provost, L.P. (1996). **The improvement guide: A practical approach to enhancing organizational performance**. San Francisco, CA: Jossey-Bass.
- Lanham, B., & Maxson-Cooper, P. (2003). Patient safety: Is six sigma the answer for nursing to reduce medical errors and enhance patient safety? **Nursing Economics**, 21, 39-41.
- Minden, V. (2003). Improvement tip: Only two ways to improve a process. **Continuous Improvement**, 25, 1.
- Patton, M. (1993). Action research and the process of continual quality improvement in a cancer center. **Oncology Nursing Forum**, 20, 751-755.
- Scholtes, P.R. (1998). **The leader's handbook: A guide to inspiring your people and managing the daily workflow**. New York: McGraw-Hill.
- Shamian, J. (2003). Climbing Mount Everest: On our way to the summit. **Hospital Quarterly**, 6, 74-76.
- Shephard, M., & Levy, H. (2003, May 17). Negligence charges against nurses dropped. **The Toronto Star**, p.A10.
- Shoesmith, J. (2002). No room for error. **Canadian Healthcare Manager**, 9, 14-19.
- Wallin, L., Bostrom, A., Wilkblad, K., & Ewald, U. (2003). Sustainability in changing clinical practice promotes evidence-based nursing care. **Journal of Advanced Nursing**, 41, 509-518.