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Healthcare reform from the inside: A neurosurgical clinical quality program

Nasim Afsar-Manesh[1,2], Neil A. Martin[1]

[1]Departments of Neurosurgery, [2]Internal Medicine, Ronald Reagan UCLA Medical Center, 757 Westwood Plaza, Los Angeles, CA 90095, United States

E-mail: *Nasim Afsar-Manesh - nafsarmanesh@mednet.ucla.edu; Neil A. Martin - neilmartin@mednet.ucla.edu
*Corresponding author

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Abstract

During the past decade, the U.S. health care system has faced increasing challenges in delivering high quality of care, ensuring patient safety, providing access to care, and maintaining manageable costs. While reform progresses at a national level, health care providers have a responsibility and obligation to advance quality and safety. In 2009, the authors implemented a department-wide Clinical Quality Program. This Program comprised of an inter-disciplinary group of providers and staff working together to ensure the highest quality of patient care. The following methodology was followed to establish the Program: (1) Identifying the Department's quality improvement (QI) and patient safety priorities based on reviewing prior performance data; (2) Aligning the Department's priorities with institutional goals to select mutually significant initiatives; (3) Finalizing the goals for improvement based on departmental priorities, existing expertise and resources; (4) Launching the Program through an inter-disciplinary retreat that emphasizes open dialogue, innovative solutions, and fostering leadership in frontline providers; (5) Sustaining the QI initiatives through proactive performance review and management of barriers; and (6) Celebrating success to empower providers to remain engaged. Several challenges are inherent to the implementation of a clinical quality program, including lack of time and expertise, and the hierarchical nature of medicine, which can create a barrier to teamwork. This Program illustrates that improvement can lead to a sustainable clinical quality program and culture change.

Key Words: Clinical quality program, Health care reform, Quality improvement

Editor's Comments on "Healthcare Reform from the Inside"

The major challenge facing healthcare systems in every country is "To provide Quality Healthcare for the Largest Number of People at the Lowest Cost". Most healthcare systems in the world are government managed (Socialized Medicine) with the United States having a system in which the government controls 50% of the healthcare system while remainder is still in the private sector. Healthcare costs are climbing in every country. Solutions in socialized systems include rationing of care, limitation of drugs and treatment, waiting lines for care with the eventual reduction in the quality of care. Those solutions are a violation of the principle stated above. SNI has

always stood for the principle, "The Patient Comes First".

The following paper outlines an excellent approach to place the patient first in the solutions of the challenges the healthcare system in the USA faces. In an academic medical center, a Neurosurgery Department implemented a set of solutions to the most costly healthcare behaviours and patient care problems that have developed over time in a healthcare system that had no economic limits in the past. Yet, changes in the delivery of healthcare at the end of the 20th century, and the development of specialization in medicine, and the introduction of centralized control in healthcare altered the traditional doctor-patient relationship that powered private healthcare that was so successful before 1964 when Medicare was introduced in the USA.

By targeting Medication errors, common hospital acquired infections, reduction of waste and supply costs

in the operating room, improving patient discharges and patient satisfaction, the Neurosurgery Department with the cooperation of the hospital administration developed a plan to improve these areas with a metric system to quantitate those changes, involved all members of the healthcare team taking care of the patient, and documented success in reaching the goals they outlined without sacrificing quality of care but improving it. The Patent came First in these solutions.

This is a landmark publication and effort that deserves replication in institutions across the USA and the world.

James I. Ausman

Editor-in-Chief, Surgical Neurology International, USA.
E-mail: jamesausman@mac.com

INTRODUCTION

The USA health care system provides excellent care that like many others in the world is experiencing increasing costs, lower patient satisfaction, and challenges with timely access to care. In the USA, rising healthcare costs will compromise the national economy, overburden many families today, and overwhelm future generations. While federal and state governments struggle to reform healthcare finance and coverage, it is the clinician's responsibility to expand the programmatic focus from the traditional tripartite mission of patient care, teaching, and research, to encompass a department-wide initiative to enhance quality, lower cost, and improve patient satisfaction. Clinicians and leaders have to do their part to improve, even re-invent, healthcare in a broader sense: this is *"Healthcare Reform from the Inside"*. Many, perhaps most, elements of the needed comprehensive restructuring of the U.S. healthcare system can only be accomplished through the insights, ingenuity, and innovations of the clinicians working every day on the frontlines of medicine.

While the United States has been a leader in health care advancement and innovation, there has been a growing national recognition of the deficiencies in quality, safety, access to care and cost. As illustrated by McGlynn in 2003, patients in the U.S. only receive 54–56% of recommended preventive, acute and chronic care.[8] Furthermore, the quality of care varies considerably based on the medical condition, ranging from 11% to 79% of recommended care. The cost of health care has significantly increased, with management of chronic

illnesses during the last 2 years of life accounting for 32% of all Medicare spending.[12] While health care reform is underway in Washington, it is critical for each hospital, department, and health care provider to work in a multidisciplinary fashion to improve the quality of patient care. This paper is a summary of the steps taken by a Neurosurgery Department in an academic medical center to address the rising costs of healthcare and the need to improve the quality of the patient care. For more detailed information please correspond with the author (nafsarmanesh@mednet.ucla.edu).

DEVELOPMENT OF THE QUALITY IMPROVEMENT PROGRAM

In February 2009, the Department of Neurosurgery launched the "Clinical Quality Program: Enhancing Quality, Safety, and Efficiency". This initiative emphasizes a multidisciplinary approach for improving health care at the departmental level. The goals of the Program were as follows: (1) To provide the highest quality of care for all patients, while ensuring appropriate care at every level; (2) To proactively create improvement instead of a reactive response imposed by governmental agencies; (3) To reduce the harmful economic and social impact of increasing health care costs; (4) To provide opportunities for fair "gain-sharing" that incentivizes positive change; and (5) To offer value-added mechanisms to replace clinician compensation lost through cuts in reimbursement. The Clinical Quality Program focused on identifying departmental priorities, aligning priorities with the Medical Center, creating a culture and infrastructure for change, and sustaining improvement efforts.

This innovative Program is unique in a number of ways. It focuses on cross-functional and inter-disciplinary groups of providers. It is not the responsibility of one group, but the involvement of everyone, from the housekeeping staff to the CEO, that is integral in creating a successful program. These efforts span individuals in executive leadership positions to the faculty and staff at the frontlines of delivering care. Furthermore, the Program is quite comprehensive in scope, focusing on improving health care with projects in quality, safety, patient satisfaction, utilization, and cost. The Clinical Quality Program leverages the local culture. By focusing on one clinical department and utilizing established relationships, the Program encourages a culture of collaboration. This, in combination with the comprehensive scope, creates a philosophy of thinking globally but acting locally. Most importantly, the Program emphasizes a data-driven and proactive management of quality improvement efforts. This differs from the traditional approach in improvement efforts: attending meetings, lack of data, no action plans, and minimal accountability for follow-up. The Program continuously and vigilantly requires active tracking and management of improvement projects. Outlined below are the steps in designing and implementing the Clinical Quality Program.

Identifying the department's quality improvement and patient safety priorities

The initial step in the implementation of the Quality Program involved recognizing the Department's QI and patient safety priorities. A review of the performance data for quality indicators and patient satisfaction was conducted. These indicators were derived from data that was being collected for the Medical Center. This step required the vision and management of the departmental leadership to ensure a global and objective assessment of the various metrics and their performance. Since the departmental leadership has the ability to influence and guide clinical programs during the future evolution of the Program, their involvement is critical at this stage. Leveraging the knowledge that each department has about their respective metrics and performance, the identification of significant metrics should occur at a departmental level. The scope and details of QI projects are too broad and vary substantially between departments and would not be appropriately covered by hospital-wide policies and initiatives. At this point, QI and patient safety will become an integral aspect of the departmental agenda.

Aligning the department's priorities with the medical center goals

The Departmental leadership worked with the Medical Center to align mutual QI and patient safety priorities. Discussions with hospital administration focused on clinically significant indicators for quality, safety, patient satisfaction, efficiency, and cost. A dialogue can then occur for selection of high impact targets, considering a combination of easily obtainable goals and more challenging outcomes. Inclusion of purely challenging projects will lead to improvement efforts appearing futile and unachievable, which will dissipate the motivation and momentum for change. Metrics for evaluation of success should be chosen based on clinical relevance, as well as the ability to be easily measured. Often times, administrative data that is already collected and reported can be utilized to reduce the burden of measurement. Benchmarks for these indicators can be obtained through historic performance or national standards for care. At this point, the departmental leadership's responsibility and accountability for the chosen improvement measures will be created.

The discussions between departmental leadership and hospital administration can be facilitated by a history of successfully completing mutual projects. For example, prior to the Quality Program, the Neurosurgery Department had been actively involved and had successfully improved the percentage of patients discharged-by-noon and therefore hospital throughput. These efforts led to intra-departmental team building and establishment of the Department's credibility in improvement initiatives.

Finalizing the goals for improvement

The discussions between the Neurosurgery Department and the Medical Center administration resulted in agreement on five major areas for improvement. A QI dashboard was created to reflect the historic performance and continue to track improvement efforts. Metrics and benchmarks, based on historical performance, national standards, or the literature were chosen. A leader was chosen for each initiative based on areas of clinical interest and expertise. Each leader was charged with assessing areas of opportunity and creating an agenda for their respective improvement measure:

A. Reduction of medication errors and costs: Each year in the U.S., 770,000 patients are harmed from adverse drug events with an estimated cost of $1–6 billion.[2-4,5,6,10,11] This results in an approximate 2-fold increase in mortality. The following areas of improvement were identified for reduction of medication errors and costs:

- Implementing an effective warning system for high risk medications
- Identifying more effective and cost conscious alternatives in choosing medications for patients
- Reducing waste in medication utilization (e.g. proactive discontinuation of medication when not necessary)
- Educating practitioners on more appropriate medication use (e.g. appropriate transitions from intravenous to oral)

B. Reduction of hospital-acquired infections (HAI): Centers for Disease Control and Prevention has estimated 1.7 million hospital-acquired infections in the U.S. annually, which contribute to 99,000 deaths.[7] HAI have been estimated to cost $5–10 billion annually with the following costs for various HAI: $10,443 for surgical site infections, $23,242 for blood stream infections, $25,072 for ventilator associated pneumonias, and $758 for catheter-associated urinary tract infections.[1] Quality improvement efforts for reduction of HAI focused on the following areas of priority:

- Increasing hand hygiene compliance rates to reduce overall risk of HAI
- Reducing *Clostridium difficile* rates by proactively identifying and isolating patients with diarrhea and sending stool cultures
- Reducing Foley catheter-associated urinary tract infections and catheter-associated blood stream infections

C. Reduction of waste and supply costs in the operating room (OR): The team recognized that the utilization of supplies in the OR can be done more efficiently. They identified the following areas for improvement:

- Recognizing OR supply waste (e.g. reducing the number of packages that were opened by the staff in anticipation of use, but were discarded)
- Educating health care providers regarding cost of OR supplies and comparable, more cost effective options
- Reducing defective or unusable OR supplies

D. Improving patient flow at UCLA Santa Monica Hospital (community hospital of the Health System):

- Improving the Spine Service discharge-by-noon rates

E. Improving patient satisfaction: Studies have illustrated that patient satisfaction plays a role in the quality of care received by patients.[9] Patient engagement is critical in ensuring patient and family involvement in care, treatment and follow-up. They identified the following areas of priority:

- Identifying the areas of improvement in the current patient satisfaction data derived from the standardized, nationally collected Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores
- Improving daily communication with patients and families regarding the plan of care
- Obtaining weekly patient satisfaction data on resident performance and providing trainees with real-time feedback

Launching the clinical quality program

In order to generate departmental support and promote participation in improvement projects, a retreat was organized to launch the Clinical Quality Program. The objective of the retreat was to create a community dedicated to QI and patient safety and establish common goals for improvement. An agenda was set for the retreat and included: an introduction by the Department Chair and the Chief Operating Officer about the Program and the five areas of priority; division of attendees into five working groups based on expertise in each of the five areas of priority; discussion in working groups of the tasks in each area of priority with a focus on action plans and timeline for completion of tasks; reconvene after the group discussion with the group leader reporting on the action plans for that area; and conclusion of the program with the date for the follow-up meeting.

All health care providers and staff in the Department, as well as hospital leadership, were invited to attend, including physicians, residents in training, Chief Executive Officer, Chief Medical Officer, Chief Operating Officer, hospital epidemiology, nurses and nurse leadership, physical and occupational therapists, pharmacists, housekeeping and patient transport services. In preparation for the retreat, individual health care providers and staff were invited to sign-up and participate in a break-out session for one of the five priority areas. This allowed the attendees to research and learn the areas of priority for their respective break-out session. Each break-out group was balanced and included subject matter experts and sufficient attendees to promote a dynamic discussion. During these sessions, the group leaders worked on building a team of dedicated staff to ensure advancing the improvement goals. While the overall objectives of the retreat were decided by the leadership, the direction and details of how to proceed was left to the discretion of the group leaders and participants. This emphasized a sense of ownership by the front-line providers while the leadership was accountable for the improvement process. After the break-out sessions, the attendees reconvened and each group leader presented their respective plan of action and accountability with personal assignments and due dates for their priorities. The leaders were then charged with ensuring that the desired improvements were implemented.

The Neurosurgery QI Initiative Retreat occurred in February 2009. The retreat promoted team building, an opportunity for education of the staff about the QI initiatives and created momentum for the improvement efforts. Furthermore, it provided a forum for the participants to voice concerns and have questions answered, which helped decrease apathy and cynicism. The retreat helped align the departmental priorities with the institutional goals. It strengthened the administration's support due to the enthusiasm generated and it outlined a course of action for achieving

improvement. Over 100 engaged participants attended and contributed to the development and advancement of the Department's improvement priorities. Discussion groups were formed around the five areas of priority that were previously identified. The groups helped define the scope of these priorities:

A. Reduction of medication errors and costs in the intensive care unit
   - Converting intravenous medications to oral
   - Identifying lower cost equivalents for commonly used medications
   - Creating a safety plan for high risk medications

B. Reduction of hospital-acquired infections
   - Improving hand hygiene in health care providers and staff in the intensive care unit and on the floor
   - Screening for and eliminating resistant pathogens
   - Decreasing device use: Foley catheters and central venous catheters

C. Reduction of waste and supply costs in the operating room
   - Providing education about the top ten most costly items
   - Addressing high cost items by renegotiating contracts with vendors
   - Reducing waste in the OR by having items available but not opened

D. Improving patient flow in the Community Hospital of the Health System
   - Addressing causes of discharge delays (i.e. pain not adequately controlled)
   - Increasing patient and family awareness about discharge day and time
   - Resolving delays in transportation on day of discharge and incomplete discharge paperwork

E. Improving patient satisfaction
   - Improving the resident–patient interaction by creating a rounding list
   - Creating a standard care coordination communication tool

Sustaining the quality improvement initiatives

After the retreat, active engagement of individual team leaders and retreat participants was critical for on-going improvement. The Department Chair proactively encouraged and supported the team members while monitoring the progress of the priorities. A new position was created for the director of quality. The director was responsible for ensuring continued improvement, overcoming barriers, and providing support for all health care providers and staff involved in the QI initiatives. As QI projects progressed, the metrics were monitored regularly and reviewed by all members of the Department. In areas where there was a lack of progress,

formal evaluation occurred and plans for advancement of the projects were discussed.

A follow-up retreat was scheduled to encourage the improvement process and reinforce accountability. The Neurosurgery Department reconvened to review the progress of the improvement initiatives 2 months after the initial retreat. The following progress was reported:

A. Reduction of medication errors and costs in the intensive care unit
   - Converting intravenous medications to oral with pre-printed order sets: drugs identified included pantoprazole, famotidine, levetiracetam, phenytoin, and dexamethasone
   - Substituting lower cost equivalents for antibiotics, antiemetics, and antihypertensive medications. For example, metoprolol costs about $0.07 per tablet compared with carvedilol at $1.97 per tablet.
   - Evaluating adverse medication effects on a weekly basis and creating plans for prevention, as well as creating warning signs and surveillance programs

B. Reduction of hospital-acquired infections
   - Improving hand hygiene in health care providers by obtaining accurate hand washing data in the intensive care unit and on the floor, creating educational posters about the importance of hand washing, surveying trainees regarding methods used for reminders, talking to ancillary services about the importance of hand hygiene compliance
   - Screening for and eliminating pathogens by instituting a standard and rigorous methodology for cleaning patient rooms
   - Decreasing device use (i.e. Foley catheters and central venous catheters) by educating health care providers about the appropriate use of catheters and integrating these practices into existing orders sets

C. Reduction of waste and supply costs in the operating room
   - Addressing high cost items by renegotiating contracts with vendors led to a 60% decrease in OR supply costs
   - Reducing waste in the operating room by having items available but not opened

D. Improving patient flow in the Community Hospital
   - Increasing awareness about discharge day and time through patient and family education
   - Facilitating authorization for patient transfers to skilled nursing facilities

E. Improving patient satisfaction
   - Developing a resident–patient communication tool to provide more consistent daily

communication with patients and families
- Providing residents with real-time patient feedback on their performance

The performance goals and metrics of the QI Initiative were renegotiated with the group leaders and hospital administration at the end of the year to eliminate impractical goals and add new objectives.

Celebrating success

Positive improvements were celebrated during departmental meetings and at the institutional level. Incentive payments from the financial gain of the quality measures accompanied a letter from the Chair of the Department, emphasizing the important role of the program in ensuring high quality of care for patients. With each success, the Chair and the Director of Quality planned the next cycle of improvement. Proposals for new projects or advancement of existing projects were drafted and presented to the Chair for discussion and approval. The faculty leaders were required to submit an annual report, highlighting their improving efforts as well as outlining future improvement plans.

Challenges

There are a number of challenges in establishing a departmental agenda for QI initiatives. Providers often have demanding schedules and dedicating the necessary time for QI projects can be difficult. Therefore ensuring the improvement project involves the work that providers are already performing can create more appropriate alignment. Moreover, selecting projects that can illustrate direct benefit for the faculty and staff, in time saving or simplification of work processes, can be encouraging to busy health care providers. The hierarchical nature of medicine further poses a barrier to the creation and maintenance of multidisciplinary teams. It is critical for the department chair and the group leaders to continually emphasize the importance of teamwork and a multidisciplinary approach to improvement. Lastly, while many faculty members and staff have been involved in improving their clinical areas, most health care providers are not trained in QI methodology. Continued QI education through hospital and outside resources is important in the advancement of the quality agenda. Providing support for providers is critical for ensuring sustainability of the QI initiatives.

CONCLUSION

The Neurosurgery Clinical Quality Program illustrates a multidisciplinary approach to enhance quality of care while reducing costs in the health care system. As one department effectively illustrates improvement, other departments can utilize their methodology and experience to create their own QI agenda. This Program has been sustained by the departmental leadership, with reviews of performance metrics and continual dedication to improvement. For the long-term durability of this program, continuous advocacy and encouragement of the teams is critical to sustain reform from the inside. For further information, contact Nasim Afsar-Manesh (nafsarmanesh@mednet.ucla.edu)

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