Early Ambulation in the Saint Vincent Critical Care Center
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A multidisciplinary effort in the Saint Vincent Critical Care Center leads to an early ambulation program for Intensive Care Unit (ICU) patients.

Traditionally, while patients are undergoing intensive medical treatment in an ICU, and in particular when patients are on a ventilator or have multiple monitoring catheters and invasive devices in place, they are kept sedated and on bedrest. The rationale for this practice has been to eliminate pain and anxiety, to reduce chances of dislodgements of devices and to prevent adverse physiologic reactions to activity. This approach was born out of the basic dictum – “Do No Harm.” In recent years, though, it has become more and more apparent that these well-intentioned practices of heavy sedation and immobilization cause unintended harm, and have longstanding effects that may only become apparent after the patient has been transferred out of the ICU.

There have been an increasing number of studies evaluating the functional status and quality of life for those patients who have survived an ICU hospitalization requiring prolonged (generally > 4 days) mechanical ventilation, and the results have been very distressing. In one study, about 75% of survivors had severe or significant limitations in ability to ambulate and nearly all were totally or severely dependent on others for activities of daily living (ADLs). Herridge, et al have followed a cohort of these patients out for several years and found that 50% of patients, who were working prior to hospitalization, were still not back to work by one year, and most were still out of work at five years after discharge. These patients continued to have significant and persistent weakness and fatigue that had not resolved by five years. These survivors, who were significantly functionally limited and dependent on caregivers for their ADLs, had poor quality of life scores, with only about 27% of survivors having a good quality of life score even at 1 year out from discharge.

The burden is not just on the patients, but on their caregivers and on the health care system as well. Several studies have shown significant caregiver stress and depression. A third of the caregivers either had to quit their employment or drastically reduce their work hours, the majority spent over four hours per day helping their loved one with ADLs and a third of the caregivers were at risk of depression. One study looking at survivors of prolonged ICU hospitalization and mechanical ventilation estimated that the health care cost per survivor is around 3.5 million dollars per year, and that nationally, we may be looking at a cost of 50-60 billion dollars.

Much of these longstanding impairments in functionality are believed to arise from the prolonged immobilization and sedation that occur when a patient is undergoing intensive medical treatment in an ICU. It has been estimated that immobilization can cause a 10-20% loss in strength per week, with a 1-5% loss per day in muscle mass. As we enter a new era of patient-focused care, break down treatment silos and strive to care for patients along a continuum of care reaching from inpatient hospitalization to rehabilitation facilities to home and outpatient care, it becomes even more imperative that we try to prevent this loss of function from occurring in our ICUs, as once this loss of strength and function has occurred, it may be irreversible despite rehabilitation and outpatient therapy.

ICUs that have implemented an early ambulation program have shown significant reductions in time on the ventilator ranging from 1-2 days less on the vent, shortened ICU length of stay by 0.5-2 days, with some studies showing decreased hospital length of stay by two days. In addition, programs that have implemented early ambulation in their ICUs have reported a significant decrease in delirium and greater independent functioning upon discharge. Many studies have shown the physical activity and ambulation is safe and feasible, even in acutely ill, orally intubated patients, and several units implement early activity even in patients on high ventilator settings and on vasopressors without adverse effect. If we can have a decreased time in the ICU/hospital with improved functional status at discharge, the hope is that these patients will go on to recover independent functioning sooner and more thoroughly than in the previous decades of ICU care, and that they will require fewer rehospitalizations and/or less intensive caregiving after discharge.

In July of 2011, the Saint Vincent Hospital Critical Care Center initiated an Early Mobility Program, a multidiscipli-
nary approach aimed at improving functional outcomes for our critically ill patients. The goals of our program include: initiating earlier activity and decreasing the complications of immobility; reducing days on ventilator support; and promoting earlier discharge from the ICU and hospital. Our Early Mobility Program started with the formulation of a focus group, comprised of myself and representatives from the Physical Therapy Department. We began our journey by evaluating available medical literature, and inviting experts in the field to come to our hospital, give an educational lecture and then meet with our focus group so that we could learn the nuts and bolts of setting up a mobility program. Based on the literature and expert experience, we devised criteria for which patients could be eligible to participate in our Early Mobility Program and developed an Early Mobility protocol that includes stages of activity and guidance on how to manage the ventilator and other support during the activity. We also developed a database to track our results. We received support from the Physical Therapy Department and our hospital administration to have a full-time physical therapist assigned primarily to our ICU.

As we started to ambulate patients more often in our ICU, and even as we began to get ventilated patients out of bed and sitting, the reception we received was tremendous. The Critical Care nurses embraced the program and have become active and invaluable partners. When the physical therapist is not available to mobilize a patient, the nurses readily take on this role. Patients and their families have also been enthusiastic about this practice, expressing appreciation for the effort made to increase the mobility of their loved ones. As our Early Mobility Program approaches its one year anniversary, we have not had any devices that have become dislodged, nor any clinically significant adverse events. Some patients have changes in blood pressure or heart rate, or dizziness, but these symptoms are quickly resolved by stopping activity.

We had started the Early Mobility Program cautiously, wanting to make sure that we could safely exercise our patients without having any adverse events occur. We are moving now into the next phase, which is to roll out the Early Mobility Program more aggressively to routinely include the more acutely ill patients, including those that are orally intubated – up until now they have been out of bed to sit in chairs at times, but have not yet ambulated. In order to include these more complex patients, we have organized a multidisciplinary committee that consists of participants from nursing, respiratory therapy, medical staff and physical therapy. This group evaluated the equipment and personnel needed, and coordinated communication needs in order to implement the practice consistently and safely. The ICU now has an all-in-one stand that is capable of holding the portable ventilator, oxygen tanks and a portable monitor, thus decreasing the number of stands that need to accompany the patient. We have also started multidisciplinary afternoon rounds, at which the physical therapist participates in decisions on whether patients are candidates for ambulation the following day. This allows the physical therapist to coordinate the ambulation activity with the respiratory therapist and nurse in a more efficient manner. We have included a physical therapy consult order on our admission set, so as to trigger earlier physical therapy evaluations for patients deemed at risk for loss of functional ability. We have ongoing updates and education for our nurses, residents and other ICU staff on the importance of early ambulation and our Early Mobility Program here at Saint Vincent Hospital.

Acknowledgements
Saint Vincent Hospital acknowledges the participation of the following individuals in the implementation of the Early Mobility Program: Yuka-Marie Vinagre (physician leader); Pamela Hale and Brian Trique (Physical Therapy); Mark Clark (Cardiac Rehabilitation); William Ozga and James Krikorian (Respiratory Therapy); Judy Doherty (Clinical Data Coordinator); Wendy Lancey and Regina Renaud (Nursing); and Daniel Perli (Resident).

References
In January of 2010, Emerson Hospital endeavored to establish a system-wide goal that would have a direct impact on the quality and safety of its patients. Recognizing the critical importance of protecting patients from harm, a decision was made to take active steps to reduce the incidence of hospital acquired infections (infections not present and without evidence of incubation at the time of admission to a healthcare setting) by 50%. Through a structured team approach, centered on dissemination of meaningful data and effective educational interventions for clinical staff, Emerson Hospital exceeded its aim, effectively reducing infections by 62% in a period of twelve months and subsequently 83% over 24 months. The project illustrated the value of effective communication, small tests of change and data analysis as vehicles to achieve a common and meaningful goal.

Emerson Hospital is a 179-bed acute care hospital located in historic Concord, Massachusetts. It serves as a center for primary and secondary services to more than 300,000 people in 25 towns. In 2011, it proudly celebrated its 100th anniversary. Emerson’s core mission has always been to make high quality care accessible to those who live and work in its communities.

In 2008, Emerson’s Board of Directors and Chief Executive Officer, Christine Schuster, reaffirmed their responsibility to drive quality improvement and reduce unintended harm to patients. To illustrate that commitment, Emerson Hospital applied for and was awarded a $50,000 grant to address quality of care through the Blue Cross and Blue Shield Trustee Advantage Program. Soon thereafter, Emerson’s focused efforts around the adoption of an audacious quality goal began. To ensure a proper and solid foundation for its work, the Emerson Hospital Senior Leadership Team and the Board of Directors collaborated with Blue Cross and Blue Shield of Massachusetts in a three pronged approach to advance quality and patient safety awareness. This included:

- Engaging the services of James Reinertson, M.D., a governance and quality expert to assist with the development of an audacious goal and aim statement to dramatically improve the quality and safety of the hospital.
- On-site observation by a team of Emerson’s leaders at McLeod Medical Center in South Carolina, viewed by many industry experts as a model in performance improvement process design.
- Ongoing participation in a learning community with other grantee hospitals to share lessons learned on the journey to achieving stated aims.

These efforts culminated in a two day retreat in November of 2009 where a decision to move forward with a three year plan to reduce patient harm was established. A specific aim to reduce the incidence of five specific hospital-acquired infections by 50% was also endorsed.

Hospital acquired infections are a critical issue in today’s healthcare delivery system. The costs to identify and manage these often preventable occurrences are astronomical. According to the Centers for Disease Control (CDC), the medical costs of hospital acquired infections in the United States ranges from $28.4 to $33.8 billion dollars annually. These numbers reflect only direct costs. Indirect costs, such as loss of productivity of those afflicted or the intangible costs of a diminished quality of life, are not represented in these estimates.

Shortly after the goal to reduce hospital acquired infections was adopted by Emerson’s Board of Directors, a kickoff meeting was held to announce the plan to reduce hospital acquired infections. Five specific teams were formed, each to focus on the specific infection assigned to them. These included: ventilator associated pneumonia, catheter associated urinary tract infections, central line associated blood stream infections, clostridium difficile and surgical site infections. Each team was comprised of a physician champion, nurse(s) and at least two members of the staff in the quality and patient safety department, who served to coordinate meeting materials and analyze critical data. Each team would complete a status report on a monthly basis, highlighting both accomplishments and barriers to success. These reports were submitted to a Steering Committee for review and discussion. The Steering Committee, in turn, would facilitate resolution of those items so that additional gains could be achieved.

As an example, the team assembled to target interventions to minimize clostridium difficile identified an opportunity to utilize a bleach-based cleaning product as an alternative to the materials being used in the hospital for room cleaning. This particular class of product is viewed as a best practice recommendation of the CDC, but exceeded the budgeted costs for standard cleaning materials.
This issue was outlined in the team report to the steering committee, who then facilitated the process to approve funding for the purchase of the bleach based alternative. This one example shows how the focus of the individual teams was centered on the disease process and the importance of targeting meaningful interventions to affect change. Budgetary and resource barriers became the responsibility of the steering committee so that the clinician time was appropriately spent on the analysis of trends and outcomes.

Within a few short months of the initial meetings, marked improvement was documented. In fact, Emerson Hospital achieved its goal of a 50% reduction by the end of August in 2010, four months in advance of its targeted deadline. In addition to achieving better outcomes for its patients, Emerson Hospital staff were enthusiastic about the ability of the teams to achieve success with such a critically important initiative.

There were a number of critical success factors which were integral to Emerson’s ability to accomplish this goal.

Engagement of the Board of Directors and Medical Staff: By establishing this goal through a collaboration of key physician leaders, senior administrative staff and the Board Quality Committee, a strong message of support was sent to the hospital community. Progress was reported regularly at both Board and Medical Executive Committee meetings, where engaged participants reviewed data and challenged presenters with questions to facilitate the exploration of alternatives.

CEO and Senior Management Team Support: The hospital’s CEO, Christine Schuster and its Chief Medical Officer, C. Gregory Martin, M.D. recognized this as a priority for Emerson. All employee and physician communications reminded staff about the importance of our goal and how every employee could contribute to its success, either through specific patient care work or the simple process of employing good hand hygiene practices.

Employing Best Practice Recommendations: In an era of challenged resources, it became even more important that Emerson not “re-invent the wheel” to achieve its stated aim. Rather, the use of best practice, practical recommendations from the CDC and the Association of Professionals in Infection Control (APIC) helped to guide the dedicated teams and focused energy on practices with a proven track record of success. The table below defines a number of interventions undertaken by caregivers to significantly reduce the number of hospital acquired infections diagnosed in its patients.

<table>
<thead>
<tr>
<th>Infection</th>
<th>Intervention</th>
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<tbody>
<tr>
<td>Surgical Site Infection</td>
<td>• Worked with information systems to improve access to office notes of patients to determine documented presence of infection</td>
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<tr>
<td></td>
<td>• Encouraged use of best practice surgical prep solutions</td>
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<td></td>
<td>• Counseled physicians on the appropriate selection and timing of antibiotics</td>
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<tr>
<td></td>
<td>• Trained physicians on specifics of wound classification</td>
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<tr>
<td>Catheter Associated Urinary Tract Infection</td>
<td>• Increased insertion of straight catheters (rather than Foley catheters) in Emergency Department</td>
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<td></td>
<td>• Empowered nurses to remove catheter where indicated through a standing physician order</td>
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<tr>
<td></td>
<td>• Re-educated staff on aseptic technique for catheter insertion</td>
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<tr>
<td>Clostridium Difficile</td>
<td>• Provided extensive training for environmental service staff on the use of products for terminal cleaning of rooms where C-diff patients were treated</td>
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<td></td>
<td>• Worked with ancillary areas (e.g., Radiology) to ensure appropriate precautions were identified for patients and personal protective equipment used</td>
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<tr>
<td>Ventilator Associated Pneumonia</td>
<td>• Worked with staff in critical care unit to adhere to the IHI best practice bundle to reduce ventilator associated pneumonia</td>
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<tr>
<td></td>
<td>• Acquired optimal product for use in oral care of patients</td>
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<tr>
<td></td>
<td>• Defined audit process to ensure interventions were completed</td>
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<tr>
<td>Central Line Associated Bloodstream Infection (CLABSI)</td>
<td>• Created electronic documentation system for adherence to IHI best practice bundle to reduce CLABSI</td>
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<tr>
<td></td>
<td>• Provided additional insertion training to infusion nurses</td>
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Next Steps

The leadership and staff of Emerson Hospital are enormously proud of the reduction of hospital acquired infections. In addition to creating a sense of camaraderie around a system-wide goal, it resulted in markedly better outcomes for Emerson’s patients. After twelve months of targeted improvement efforts, a 62% reduction was achieved. Recognizing the incredible momentum and enthusiasm on the part of the staff, Emerson has elected to continue this project for an additional year with the goal of achieving a 75% reduction. We were thrilled to report in December of 2011 that a cumulative reduction of 83% was achieved.

Our greatest source of pride is the knowledge that our patients received optimal care and that our efforts minimized the risk of acquiring an infection during their hospital stay. Emerson looks forward to replicating the success of this program in other critical areas where process improvement can result in better patient outcomes and collaboration with all caregivers.

Quality and Patient Safety Division Notes

- At Kindred Hospital Boston North Shore, restraint use is reported daily to all senior leaders and restraint orders are reviewed once a shift for necessity by the Nursing Supervisor and the attending physician. Kindred attributes a significant decrease in the rate of restraint use to this new process.

- Hospitals are uniformly implementing time out protocols in outpatient areas where procedures are performed, such as endoscopy and interventional radiology units.

- Holy Family Hospital, a Steward Family Hospital, following the lead of Quincy Hospital, has implemented a “leadership concierge.” Two leadership members from different departments meet newly admitted patients and follow them throughout their stay to discuss their needs or issues. In addition to providing a way to address patient concerns real time, the direct patient interactions have given frontline leadership a greater understanding of how each department affects another and influences the patients’ experience of care.

- Prevention of falls that occur while patients are in the bathroom is a challenge for hospitals. Prevention strategies include discussions with patients and their family members about the need to prioritize patient safety over privacy.

- Some hospitals have their pharmacies monitor trough serum vancomycin levels. The pharmacies have a process for contacting the attending physician and nurses on the unit to ensure that vancomycin troughs are ordered and drawn at correct times.

- One outpatient surgery center created a “pre-operative patient safety huddle,” a formal process for physicians and nurses to address any patient safety concerns that are discovered on the day of the surgical procedure.

- Following an incident involving a retained guidewire, one health care facility reviewed its policy and reinforced its didactic and simulation sections to place more emphasis on guidewire retention and breakage. The health care facility also added a section to its central line check list to prompt visual confirmation of wire removal.

- One hospital reported expanding its Rapid Response Team (RRT) availability to outpatient areas.
Leaders in Quality and Patient Safety Call on Institutions to Create a Culture of Respect.

“Disrespect is a threat to patient safety because it inhibits collegiality and cooperation essential to teamwork, cuts off communication, undermines morale, and inhibits compliance with and implementation of new practices.”

In a two-part series of articles in the journal, Academic Medicine, leaders in health care quality define a barrier to progress in patient safety – “a dysfunctional culture rooted in widespread disrespect.” The authors propose a solution: transform the organization’s culture to one where “respect” is a core value. They call on health care institutions to take concrete steps to eliminate and prevent disrespectful behavior.

The articles are the product of a working group on professionalism, which included the authors: Lucian L. Leape, MD; Miles F. Shore, MD; Jules L. Dienstag, MD; Robert J. Mayer, MD; Susan Edgman-Levitan, PA; Gregg S. Meyer, MD, MSc; and Gerald B. Healy, MD. (Dr. Healy is currently serving as a member of the Board of Registration in Medicine.)

In an interview with QPS Division staff, Dr. Lucian Leape shared his thoughts on the topic.

What was the impetus for writing these articles?
A group of individuals organized to discuss the problem of disrespectful behavior in the health care workplace, recognizing its strong link to patient safety. We wanted to motivate hospitals to take action and put processes in place to address the problem. The articles make the case – the problem is defined; the extent of the problem is described; its importance is clarified and the solutions are outlined. The issue of disruptive physician behavior is more than bad manners; patient harm is a result.

Why now?
It is something we have been concerned about for a long time. Progress dealing with this issue has been slow and we now believe it is a more significant issue than we had realized. Disruptive behaviors link to and impact patient safety.

How are you seeing change happen?
There is a movement to address these issues through training programs, such as the program developed by Dr. Gerald Hickson, Director of the Center for Patient and Professional Advocacy at Vanderbilt University. Also, Chief Medical Officers are beginning to understand their roles as leaders for change and taking action. You can see evidence of change through policy development, such as the CRICO Risk Management Foundation’s work on apology and disclosure, and Dr. Atul Gawande’s work with surgical checklists and patient outcomes.

Creating a culture of respect falls on the organization’s leaders because only they can initiate the processes that will lead to change. What do they need to do?
Leadership needs to create a vision for change and act on it. Governing board and administrative leaders must engage their medical staff to take ownership of the problem and become involved in changing the culture. Institutions must have clear policies for conduct and enforce them. Once physicians understand that the policy is being enforced, change will happen.

What does a work environment that supports a culture of respect look like?
The work environment should be happy and supportive, where everyone is treated with dignity and respect. Alcoa’s former CEO, Paul O’Neill, emphasized the importance of treating employees with respect and giving them the resources they needed to do their job. Workers should be safe both physically and psychologically.

References
Improving Care in the Emergency Department

Ongoing performance improvement review by one hospital’s Department of Emergency Medicine led to the following actions: (1) a “direct to bed” process was initiated to eliminate waiting room time; (2) C-diff guidelines were updated and integrated into computerized monitoring; and (3) a “team-based” care system was created to improve communication. The following additional actions were taken to improve patient flow within the ED: (1) development of a “check-in” system, versus full registration; (2) implementation of a rapid RN assessment, versus traditional triage; (3) creation of a “Flow Manager” position; and (4) introduction of the concept - “a bed ahead.”

Ambulatory Surgical Center Update

All currently operating, licensed Ambulatory Surgical Centers (ASCs), have submitted their initial Semi-Annual Reports (SARs) to the Quality and Patient Safety (QPS) Division, which were due March 30, 2012. A number of Safety and Quality Reviews (SQRs) have also been received. Reports to the QPS Division provide evidence of the ASC’s systems for review and response to unexpected patient outcomes. The SQRs are an essential tool in your review, and the confidential data will serve the QPS Division to enhance practice for all. The next SARs will be due September 30, 2012.

A workshop was held on June 21, 2012 to discuss the PCA regulatory requirements, with focus on the PCA Plan and PCA reports. The session was available by Webinar for the first time. Hopefully, this medium will prove a useful tool to facilitate our interaction with the ASCs. The QPS Division hopes to provide more opportunities for learning in the months ahead.

The Center for Medicare and Medicaid Services (CMS) is now requiring that ASCs begin to report quality data on the following criteria, starting October 1, 2012: 1) patient burns; 2) falls; 3) surgery on wrong site, (side, patient, or procedure); 4) hospital transfers or admissions; and 5) number of patients who did not receive IV antibiotic within one or two hours before incision. Many ASCs have reported in their SARs that they are already collecting this data. The QPS Division supports your work in meeting these new requirements.

The ASCs are to be commended for their cooperation, professionalism and dedication throughout this past year, as the QPS Division has worked with ASC leaders to implement the PCA regulatory requirements.

In 2011, the Quality and Patient Safety Division received 42 Safety and Quality Review reports, where the reported events were described in the basis codes as being related to care provided in the Emergency Room.

The QPS Division is now able to search the basis codes that health care facilities include on the Safety and Quality Review forms. Please be sure to complete that section of the SQR form, as these codes will assist us in researching topics for newsletters and advisories.
**Gain Full Value From Your Root Cause Analysis” Workshop**

Held June 14th in Marlborough

The Quality and Patient Safety Division in co-sponsorship with the Massachusetts Society for Healthcare Risk Management, the Massachusetts Hospital Association and the Massachusetts Medical Society held a full day workshop in Marlborough on June 14th. The workshop was facilitated by Patrice Spath, BA, RHIT, of Brown-Spath Associates.

Ms. Spath described the elements of a “thorough” root cause analysis, discussing what is often missing from investigations. She presented the analytical tools caregivers need to identify the event’s root cause and latent conditions, and determine how these issues have been found. Lastly, Ms. Spath discussed how to identify strategies for designing sustainable corrective actions and follow-up monitoring activities.

**Safety and Quality Review (SQR) Reports**

Here are some examples of the types of cases reported in SQR Reports.

**Acute Care Hospitals**
- Retained foreign body (sponge, needle tip)
- Wrong site procedure (paravertebral block, )
- Contrast induced neuropathy
- Cautery burn
- Delayed intubation for respiratory failure
- Aspiration post bariatric surgery
- Pneumothorax during NGT placement
- CVA during cardiac catheterization
- Fetal Distress during labor and delivery
- Popliteal artery perforation during TKA
- Medication error related to IV pump settings

**Ambulatory Surgery Centers**
- Colon perforation
- CVA
- Respiratory compromise
- Sepsis

**Rehabilitation/LTAC transfer within 24 hours**
- Seizure
- Sepsis
- Respiratory failure
- CVA
- Chest pain

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Send mail to Massachusetts Board of Registration in Medicine, QPS Division, 200 Harvard Mill Square, Suite 330, Wakefield, MA 01880.

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