

Testimony to the Oversight and Government Reform Committee

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William Beaumont Hospital - Royal Oak Michigan

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Beaumont Mission

We will provide the highest quality health care services to all of our patients efficiently, effectively, and compassionately, regardless of where they live or their financial circumstances.

Beaumont Vision

We will rank among the nation's leading institutions in the provision of health care services, patient safety, medical education and financial performance.

William Beaumont Hospital, Royal Oak is a 1,061-bed major academic and referral center with Level 1 trauma status and Michigan's first Magnet-designated hospital for nursing excellence. Beaumont ranks first in the United States for inpatient admissions and second for its number of surgeries. Beaumont is a regional health provider with 91 medical and surgical specialties with more than 3,100 physicians. Beaumont also has two other community hospitals, and numerous community-based medical centers, and nursing centers.

Beaumont is a major teaching facility that has 37 accredited residence and fellowship programs with 380 residents and fellows. Beaumont is partnering with Oakland University, in Rochester Michigan to establish a private medical school to open in 2010.

Beaumont Rankings:

U.S. News & World Report's "Best Hospital" listed in 9 medical specialties

AARP - Best Employers for Workers 50 and Over

Marcia & Eugene Applebaum Surgical Learning Center Accredited by the American College of Surgeons

One of 41 U.S. Hospitals on Leapfrog Group's 2007 Top Hospitals list for quality and safety

One of America's "50 Best Hospitals 2008" by Healthgrades for superior clinical outcomes

Beaumont 2007 Statistics

Number of licensed beds 1,061 Royal Oak Campus

Number of 2007 admissions 58,212

Number of surgeries 54,120

Number of adult intensive care units 5, totaling 100 adult ICU beds

Second highest Medicare admission hospital in the United States

The Beaumont Story

William Beaumont Hospital, Royal Oak has long recognized the need for and supported an aggressive infection prevention and control program. Hospital leaders believe that we have an obligation to prevent and control healthcare associated infections and to protect our health care workers. This is even more important today than in decades in the past. Beaumont has a Centers for Disease Control (CDC) trained medical epidemiologist knowledgeable of epidemiological and scientific principles and in statistical analysis. We believe that an effective infection prevention and control program can reduce rates of health

care associated infection and are cost-effective. We have provided administrative support, resources, and an organizational commitment to a culture of safety. Reports on the effectiveness of our infection control programs are provided to our Infection Control Committee, Medical Evaluation Committee, Medical Executive Board, and our Board of Directors.

In health care today, we are faced with new communicable diseases such as HIV and hepatitis C and re-emerging infections such as, pertussis (whooping cough), measles, mycobacterium tuberculosis, as well as changing pathogens such as a new toxigenic strain of *Clostridium difficile*. We have heightened the importance of infection control. However, as the population ages and treatments continue to advance, patients are more susceptible to infectious diseases. Organisms previously treatable with antibiotics are becoming more resistant. Infection prevention and control has many challenges; challenges we must face and address. New lifesaving technology confers new risks of infection.

The results of our infection control program have been extraordinary with institutional health care infection rates well below our peer groups, and the rates of other hospitals reported voluntarily to the Centers for Disease Control with anonymity protected. Between 2000 and 2007 our overall health care associated infection rate was approximately 1% or 2.1 per 1,000 patient days, a rate significantly below other large tertiary care hospitals with rates of more than 4% or 5 per 1,000 patient days. Each year, potential problem areas specific to our hospital are reviewed, analyzed, and a plan is created to further reduce rates of infection. We have been largely successful because our infection control personnel are proactive in developing programs and policies to address our specific needs.

Since 1999, when the Institute of Medicine's compelling report on medical errors was unveiled, there have been only a few measurable improvements in patient outcomes and the safety culture in hospitals. The Michigan Health & Hospital Association (MHA) Keystone ICU Project in the State of Michigan demonstrates how broad-based collaboration can improve care not only at an individual hospital or patient level, but for all hospitals and patients in the state of Michigan. The MHA Keystone Center brings together hospitals, national experts, and best practices to improve patient safety by addressing the quality of health care delivered at the bedside.

The Keystone Center for Patient Safety & Quality

The MHA Keystone Center for Patient Safety and Quality was created in March 2003 as a not-for-profit division of the MHA Health Foundation in response to growing concern about patient safety and health care quality and in recognition of the unique willingness of Michigan hospitals to collaborate to improve care. To date, Keystone has been funded by grants, MHA-member hospitals and Blue Cross and Blue Shield of Michigan (BCBSM). The original Agency for Health Care Research and Quality (AHRQ) matching grant was for \$1,000,000. The hospitals contributed a match of in-kind contribution of staff time. Keystone now represents the largest regional partnership of intensive care units assembled in a single initiative. The MHA Keystone Center has partnered with safety experts from Johns Hopkins University, the Centers for Disease Control and Prevention, and others to bring this work to the State of Michigan.

The MHA Keystone Projects allow hospitals to apply local wisdom to implement best-practice interventions to prevent harm to patients. This work requires dedicated participants, leadership support, resources, and physician engagement to achieve measurably improved outcomes and sustained results. Engagement of frontline staff to change behavior is the key to implementing and sustaining any successful change in practice.

Through the Michigan Health and Hospital Association Keystone Center for Patient Safety and Quality, Michigan hospitals have launched groundbreaking programs to reduce errors and improve the quality of patient care in the state of Michigan. While participation in the Keystone projects is voluntary in

Michigan, this effort demonstrates the serious commitment of the MHA and its member hospitals to provide the safest, most effective care to all Michigan residents. Michigan hospitals have a proven track record of accountability through voluntary reporting. Voluntary reporting efforts have allowed us to devote our time correcting problems and implementing changes, rather than on laborious data collection. Voluntary non-punitive reporting encourages ownership, transparency and action. The MHA Keystone projects emphasize sharing of information, challenges, and successes among Michigan hospitals in a non-competitive manner through the exchange of ideas among health care systems so that we can assist each other in providing better and safer care.

At Beaumont Hospital, Royal Oak, we have been involved in all of the Keystone statewide collaboratives, the first being the Keystone ICU Project which focused on providing safer ICU care. Beaumont was an early adopter of the Keystone ICU Project. Our clinicians endorsed the use of evidence-based protocols, and the approach defined by the Keystone ICU Project. It has been estimated that the average patient in the ICU has 1.7 errors in his or her care per day in the ICU. The Keystone ICU Project gave us the infrastructure to improve our safety culture, lower infection rates and enhance teamwork and communication.

Our Keystone ICU team consists of an intensivist, the registered nurse caring for the patient, pharmacist, respiratory therapist, resident, and other key disciplines such as the infection control practitioner, care management, and physical therapy. This model for collaborative rounding provides an opportunity for our resident staff to learn behaviors such as team building and communication preparing them for their future in medicine.

We implemented an organized approach to improving quality and patient safety in our ICUs by doing the following:

Keystone ICU Project

1. Implementing a Comprehensive Unit-Based Safety Program (CUSP) to educate staff on the science of safety. This is an 8-step safety program that begins and ends with staff assessments of safety in the workplace. CUSP advocates open communication and collaboration between all levels of staff from senior leadership to entry level staff.
2. Improving team communication through the development of a daily goals checklist. We have implemented daily multi-disciplinary rounding to include all participants in patient care. With the addition of a pharmacist to our daily rounding team, we are able to address medication appropriateness, and compatibility, and discuss evidence-based treatment. Infection Control Practitioners are also able to reinforce proven methods of prevention.
3. Reducing catheter-related blood stream infections which increase morbidity, mortality, and cost of care. We implemented the use of a standardized central line checklist that ensures that we are compliant with evidence-based practices and have followed all of the infection control practices accordingly. We evaluated the contents of our central line equipment cart and added full-barrier draping to help maintain a sterile field and reduce complexity of the procedure.
4. Improving the care of ventilated patients in the ICUs to ensure that best practices were consistently applied in the care of these patients. These best care process include: Elevating the head of the bed 30 degrees which reduces the frequency of pneumonia; appropriate use of peptic ulcer disease prophylaxis which reduces the risk of upper gastrointestinal bleeding; daily interruption of sedative drug infusions to decrease the duration of mechanical ventilation; daily screening of respiratory function to determine if the patient could be removed from the ventilator.

5. Improving the identification and implementation of early goal-directed therapy to treat patients with sepsis by reducing complexity and creating independent redundancy. This helps to ensure that patients with severe sepsis and septic shock receive the care they should in the intensive care unit with evidence based clinical guidelines.

Beaumont Results

Every day, 247 people die in the United States as a result of health care associated infections which is equivalent to over 90,000 deaths a year. At Beaumont we have taken direct action to prevent infections. For example, we have implemented several successful initiatives in our institution targeted to reduce the most serious types of health care associated infections, such as central venous catheter-associated bloodstream infections, and mechanical ventilator-related lower respiratory tract infections in our adult ICUs as part of our Keystone work. Prior to the implementation of Keystone, our rates were already well below our peer group. We have experienced a 53% reduction in blood stream infections and a 44% decline in ventilator-related lower respiratory tract infections in 2007 when compared to 2006. Through hospital-wide efforts, infections associated with peripherally inserted central catheters also decreased from 1.8% to 1.4% (22%). Through our antimicrobial stewardship program, we have been able to reduce unnecessary antibiotic exposures to our patients and reduce rates of antibiotic resistant organisms.

Keystone Hospital Associated Infection (HAI) Project

In addition to the ICU Project, we participate in a second MHA Keystone statewide Project that focuses on reducing hospital-associated infections in general. Hospital associated infections add to patient morbidity, mortality and costs of care. It's estimated that 5 to 10% of inpatients develop an infection, which is roughly 2 million patients a year, at a cost of \$4.5 to \$5.7 billion nationally. We have implemented several interventions with our staff to reduce infections. We, along with over one 100 Michigan hospitals, have voluntarily committed to work together in this statewide collaborative to reduce the patient's risk of infection. Between 2007 and 2009, we will be fully implementing additional interventions to reduce infections.

1. Appropriate hand hygiene. Hand hygiene is the primary measure to reduce infections. We have developed an aggressive hospital-wide awareness and marketing campaign to remind our health care providers of the importance of hand washing, and have installed hand hygiene stations in patient care and public areas throughout the hospital for staff and visitor use. We are beginning to observe remarkable results. Hand hygiene has already improved from 40-50% compliance to rates in excess of 85%. We continue to strive for 100% compliance. Hand hygiene is considered the leading measure to reduce the transmission of pathogens in health care settings. The importance of this simple procedure is often times not recognized by health care workers. Though the act of washing your hands is simple, the lack of compliance among health care providers is problematic throughout the world.
2. Reduction of blood stream infections - We have empowered our staff to speak up if they perceive a breakdown in sterile technique during catheter placement. We have implemented an ICU protocol using a standardized checklist that is completed prior to every catheter insertion to ensure the adherence of proper precautions to prevent infections. The checklist is used throughout our hospital.
3. Reduction of indwelling bladder catheter use to prevent urinary track infections (UTI) - With this being the most common hospital-associated infection, our hospital is endorsing the concept of an aggressive hospital-wide effort to minimize bladder catheter-associated UTIs. We now have approved indications for placement of a bladder catheter requiring a physician order and are developing a nurse-initiated urinary catheter discontinuation protocol. Prompt removal can minimize the risk of catheter-associated UTIs that increases every day a catheter remains in place.

Keystone Surgery

As a result of the benefits realized in the intensive care units, we expanded Keystone into other clinical areas. Our third MHA Keystone collaborative is geared toward improving care and safety for our surgical patients in the peri-operative setting. Our objective is to improve communication and collaboration among caregivers by conducting preoperative briefings and debriefings. We are focusing our efforts on reducing surgical site infections, mislabeled specimens, and preventing the National Quality Forum's "Never" events of wrong site surgery and retained foreign objects. Beaumont is leading the pilot to test the Keystone Surgery interventions that will be launched to nearly 80 other hospitals across the State of Michigan on April 28, 2008.

During the 18-month testing period, we have developed and implemented pre-operative briefings and debriefings. The OR briefing is a one-to-two minute discussion that takes place in the OR among all surgical team members before the case begins. Its purpose is to check critical information and promote open communication by all team members during the operation. Topics that are discussed include the operative plan, patient risks, potential hazards, safety concerns, and operating knowledge of the equipment needed for each case. To date we have implemented this procedure in all of our operating room suites, and have performed more than 40,000 briefings and debriefings.

We have improved our delivery of perioperative antibiotics to patients and continue to examine risk factors for surgical site infections. By implementing interventions, we were able to achieve an additional 11% reduction in sternal wound infections in patients undergoing coronary bypass grafting, a patient population at very high risk for infection.

Barriers To Reduce Healthcare Associated Infections

We face many challenges in our efforts to improve patient safety and outcomes. In health care, there is a tremendous need for standardization of practices and procedures, institution of evidence-based practices, and consistent data collection and reporting standards. There is a need to create safer systems of care. According to the Institute of Medicine, it takes 17 years for evidenced-base guidelines to translate to actual bedside practices. The Keystone projects provide a method for rapid and effective patient safety improvements, where evidence-based interventions are implemented and the outcomes are reviewed. While this work is financially beneficial, more importantly it is just the right thing to do for any patient in any hospital. Health care leaders need to support clinical practice and operational changes and own the challenge of providing safer care. Health care workers need to understand that everyone is important in our system and plays a vital role in reducing infections by following infection prevention safety practices and procedures.

As a health care leader, I recognize that understanding and effectively addressing quality and safety issues requires a strong strategic commitment to improvement and sustainability. As part of our commitment to constantly improving our care, we have made implementation of the Keystone projects a key hospital-wide objective. We have taken lessons learned from our intensive care units, and have adapted them to practices in our non-ICU medical and surgical areas. Our work should continue to lower infection rates, and provide safer care with evidence-based practices. As health care providers, we also need to learn and adopt safety ideas and techniques from other industries, as we continue to transform our current health care model.

Costs to Implement

William Beaumont Hospital, Royal Oak has more than a 50-year history of building an infrastructure for patient safety and quality. At Beaumont, we take patient safety very seriously. We take organizational and leadership responsibility for patient safety, and as a health care system we strive to build a culture of safety through open communication, and empowerment of our staff. The cost to implement the Keystone project has been minimal for our hospital. One full-time registered nurse was added for project facilitation, and a pharmacist was added to the intensive care area to address medication appropriateness, compatibility, and discuss evidence-based treatment regarding therapy. Another infection control practitioner was added to assist with surveillance, educational programs and data collection. Investments to reduce infection have been made by hospitals and must continue during a time when they are also faced with growing needs for investment in supplies, equipment, medications, staffing and other resources. Health care systems are also facing costs associated with the need to create more private rooms for patients requiring contact isolation precautions as well as the need for more airborne isolation rooms and other costs of airflow and negative pressure, and exhaust changes. The adoption of new technology of proven scientific value comes with tremendous cost for hospitals.

Infection control programs should be designed around the needs of individual hospitals. The threat of mandates may add to the additional costs. For example, requiring that all patients be screened for MRSA rather than allowing infection control programs to adopt screening policies to best fit their own needs would be cost prohibitive. Mandated programs may have components that are not applicable to all hospital settings and are inflexible in interpretation. Often with mandated programs there are unrealistic goals and they become bureaucratic nightmares. Mandated programs can be extremely costly and place an unnecessary financial burden on hospitals. A collaborative approach, such as that in Michigan, allows hospitals to take ownership of safety interventions and to share best practices in order to achieve similar goals despite different systems. A “one size fits all” approach is not ideal.

Financial Savings

In general, the magnitude of a hospital's infection rate is strongly correlated to two factors: (1) the underlying risk of its patients, and (2) the effectiveness of its infection control program. Our ability to maintain infection rates 50% below our peers, despite caring for comparable or even sicker patient populations, attests to the effectiveness of our hospital-wide programs. Every time we prevent a patient from developing an infection this results in reduced length of patient stay, hospital costs, and more importantly, reduced patient mortality and morbidity. Patients that develop an infection typically stay an average of 7 hospital days, resulting in added costs of at least \$7,850 per infection, and have an associated 15% attributable mortality. If our infection rate met the CDC average, there would be an additional 850 infections, \$6.7 million in cost, and 125 patient deaths at our hospital. We initiated an active surveillance system to identify high-risk patients with MRSA and VRE. Through these efforts, we lowered hospital-associated MRSA, VRE, and C difficile infection rates significantly below those reported by other tertiary care hospitals. We were able to remove isolation precautions from 188 patients (1,586 patient bed days) which resulted in savings of \$125,000.

Patient Impact

As a health care system we strive for continuous improvement. We identify potential problem through the review of reliable and rigorous data. We perform epidemiologic studies to determine the reasons for problems discovered, implement control measures, provide feedback to all concerned, and measure the impact of our interventions. These actions result in reductions in both health care associated infections and improved healthcare worker safety results. We continuously monitor our compliance with scientifically validated methods of infection prevention. We provide education to our staff and patients. We also recognize the importance of studies to improve quality of care and research to reduce health care

associated infections. By maintaining involvement in each of these areas, our patients benefit greatly as attested by our low rates of hospital-associated infections.

Conclusion

Patient safety is an organizational priority at our hospital. Significant resources are allocated to support this commitment. Just as in retooling of any industry, we must first invest in change to see the benefits of improved quality and efficiency downstream. Hospitals in Michigan have been investing in this work. State and national funding sources are needed for this work to continue and spread throughout the country. As a nation, there is a national call for greater transparency in health care that must be answered. We need federal support for studies to improve patient outcomes and to assess novel strategies to enhance patient safety. We must strive for continuous quality improvement and never accept the status quo. Much attention on the national level has focused on issues such as mandatory reporting of hospital-associated infections and the need for additional regulations. Mandatory reporting and bureaucratic programs are not the answer to improving our health care system. These programs place a heavy burden on an already flawed system. We have found that quality improvement and patient safety efforts are best left in the hands of a motivated clinical team at the point of care where success motivates excellence.

We would like to acknowledge our nursing, medical, and support staff for their dedication in implementing the Keystone Project.