

**Illinois Hospital Report Card
And
Consumer Guide to Health
Care**

**Report to the General
Assembly: Fiscal Year 2014**

(July 1, 2013 – June 30, 2014)

**Division of Patient Safety and Quality
Illinois Department of Public Health**

This report highlights data published on the Illinois Hospital Report Card and Consumer Guide to Health Care website (www.healthcarereportcard.illinois.gov). It also provides an overview of key related quality and safety initiatives of the Division of Patient Safety and Quality (the Division) at the Illinois Department of Public Health (IDPH). The Division was established in late 2007 in response to growing national concerns about the quality and safety of health care, reflected locally in the Illinois Hospital Report Card Act (210 ILCS86) and Illinois Health Finance Reform Act (20 ILCS 2215). The Division is responsible for publishing the Illinois Hospital Report Card and Consumer Guide website.

The Division of Patient Safety and Quality is dedicated to fostering improvements in health care quality and patient safety, and raising public awareness through transparent reporting of health care quality measures. Putting the spotlight on health care quality issues helps inform public health policy and can activate changes to improve the health and well-being of our communities. High quality health care should result in positive and targeted health outcomes in communities, be guided by evidence-based best practices, and have cost value.

The Division is responsible for the collection of patient discharge data from Illinois hospitals and ambulatory surgery treatment centers. Collecting, measuring and analyzing data are essential components of the Division's work and facilitate the public reporting of health care quality measures. The Illinois Hospital Report Card and Consumer Guide to Health Care website was developed to provide ready access to these reports to consumers. Data is compiled from an array of sources including the discharge data set, the Illinois Annual Hospital and Ambulatory Surgery Center Profile, Illinois nurse staffing data, the Department of Health and Human Services Centers for Medicare and Medicaid, the Centers for Disease Control and Prevention's National Healthcare Safety Network surveillance system, and the Department's Vital Records.

The Illinois Hospital Report Card and Consumer Guide to Health Care (HRCCGH) website has had twelve releases since its inception in November, 2009. This includes a newer feature of the website called the Illinois Public Health Community Map, which was launched in the spring of 2011. This feature examines issues related to quality of health care at the community level. The HRCCGH website currently displays over 175 indicators of quality, safety, utilization and charges for specific procedures and conditions. This report highlights data published on the HRCCGH during the 2013/2014 fiscal year (July 1, 2013 – June 30, 2014) and associated patient safety and quality initiatives. During this time, the website received an average 3800 visits per month. Approximately 74 percent of visitors were new to the site. For more detailed reports, please visit the HRCCGH web site directly at www.healthcarereportcard.illinois.gov.

In March of 2011, the Department of Health and Human Services released the "National Strategy for Quality Improvement in Health Care", a strategic plan to guide the nation in increasing access to high quality, affordable health care for all Americans (1). The National Strategy promotes three broad aims and six priorities for quality improvement. The three aims are:

1. **Better Care** – Improve the overall quality of care, by making health care more patient-centered, reliable, accessible and safe

2. **Healthy People/Healthy Communities:** - Improve the health of the U.S. population by supporting proven interventions to address behavioral, social and environmental determinants of health in addition to delivering higher-quality care.
3. **Affordable Care:** Reduce the cost of quality health care for individuals, families, employers, and government.

The six priorities of the National Quality Strategy are:

1. **Patient Safety** – Making care safer by reducing harm caused in the delivery of care.
2. **Person and Family-Centered Care** – Ensuring that each person and family are engaged as partners in their care.
3. **Effective Communication and Care Coordination** – Promoting effective communication and coordination of care.
4. **Prevention and Treatment of Leading Causes of Mortality** – Promoting the most effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease.
5. **Health and Well-Being** – Working with communities to promote wide use of best practices to enable healthy living.
6. **Affordable Care** – Making quality care more affordable for individuals, families, employers, and governments by developing and spreading new health care delivery models.

The HRCCGHC web site provides an array of measures that examine the quality and value of health care, and the Public Health Community Map feature examines issues of health quality at the community level in the context of social determinants of health. A compilation of data that highlights these issues is provided below using the framework of the National Quality Strategy six priorities for quality improvement. Statewide data is provided, and is compared to national benchmarks when possible. Some data can be found on the Centers for Medicare and Medicaid Hospital Compare and other websites, but most of the measures are unique to the HRCCGHC. Special Division quality improvement initiatives are also highlighted.

Patient Safety – Making care safer by reducing harm caused in the delivery of care

Health Care-associated Infections

Health care-associated infections, or HAIs, are infections that patients acquire while they are receiving treatment for other conditions in a health care setting, such as a hospital, nursing home, or community clinic. According to the Centers for Disease Control and Prevention (CDC), HAIs account for over a million infections and some 99,000 deaths annually in the United States. Hospital acquired HAIs alone are estimated to cost in excess of 28 billion dollars in preventable health care expenditures. Many of these infections are preventable with appropriate health care practices. HAIs are a top patient safety concern being addressed nationally. The Department of Health and Human Services issued a national action plan to prevent HAIs in 2009 that set specific 5 year target reduction goals for the top HAIs (2).

Health and Human Services, the Center for Medicare and Medicaid, the CDC and State public health departments have all collaborated to help drive reduction efforts locally across the country.

To combat health care-associated infections aggressively, the Division of Patient Safety and Quality launched a phased implementation of the CDC's National Healthcare Safety Network (NHSN) surveillance system in Illinois hospitals. The NHSN surveillance system provides the most rigorous and valid method for measuring and monitoring information on HAIs, and has been embraced by the Centers for Medicare and Medicaid Services as the national reporting tool of choice.

Over the past five years, the Division staggered implementation of surveillance reporting for individual HAIs to allow infection prevention staff at hospitals to become familiar with reporting protocols and requirements. Hospitals now report central line-associated bloodstream infections (CLABSI), surgical site infections, Methicillin-resistant *Staphylococcus Aureus* (MRSA) and *Clostridium difficile* (CDI) infections to the Division. NHSN surveillance data is published on the Illinois Hospital Report Card and Consumer Guide to Health Care. Data on CLABSI is reported for all hospitals with adult, pediatric and/or neonatal intensive care units and surgical site infection (SSI) data is published for infections associated with coronary artery bypass graft and total knee replacement surgeries. MRSA and CDI data is published facility-wide for all hospitals. NHSN surveillance data is published on the HRCCGH website both individually on unique hospital profiles, as well as in a statewide report.

Illinois has seen significant improvements in four of the five health care-associated infections monitored by the Division as measured by the standardized infection ratio. The standardized infection ratio, or SIR, is a summary measure that can be used to track HAIs at state and national levels over time. It is used to measure relative difference in HAI occurrence during a given reporting period, compared to a common referent period of national data. (For further information on Standardized Infection Ratios (SIRs), see the methodology section of the Illinois Hospital Report Card website <http://www.healthcarereportcard.illinois.gov/methodology#ir>).

The table below summarizes progress in Illinois infection reduction between 2012 and 2013. This is consistent with national trends. Illinois data is also compared to national referent data as well. Many health care organizations have successfully implemented quality improvement activities to reduce HAIs. Public reporting and media attention have also stimulated prevention efforts.





Table 1. Snapshot of HAI Prevention Progress in Illinois between 2012 and 2013 and Compared to National Referent Data

Infection	% Change in Illinois 2013 vs. 2012	% Difference in Illinois 2013 vs. National Referent Data
CLABSI	17% ↓	53% ↓
SSI KPRO	35% ↓	55% ↓
SSI CABG	14% ↓	52% ↓
MRSA	16% ↓	28% ↓
C. DIFF	2% ↓	9.6% ↓

Central Line-associated Blood Stream Infections

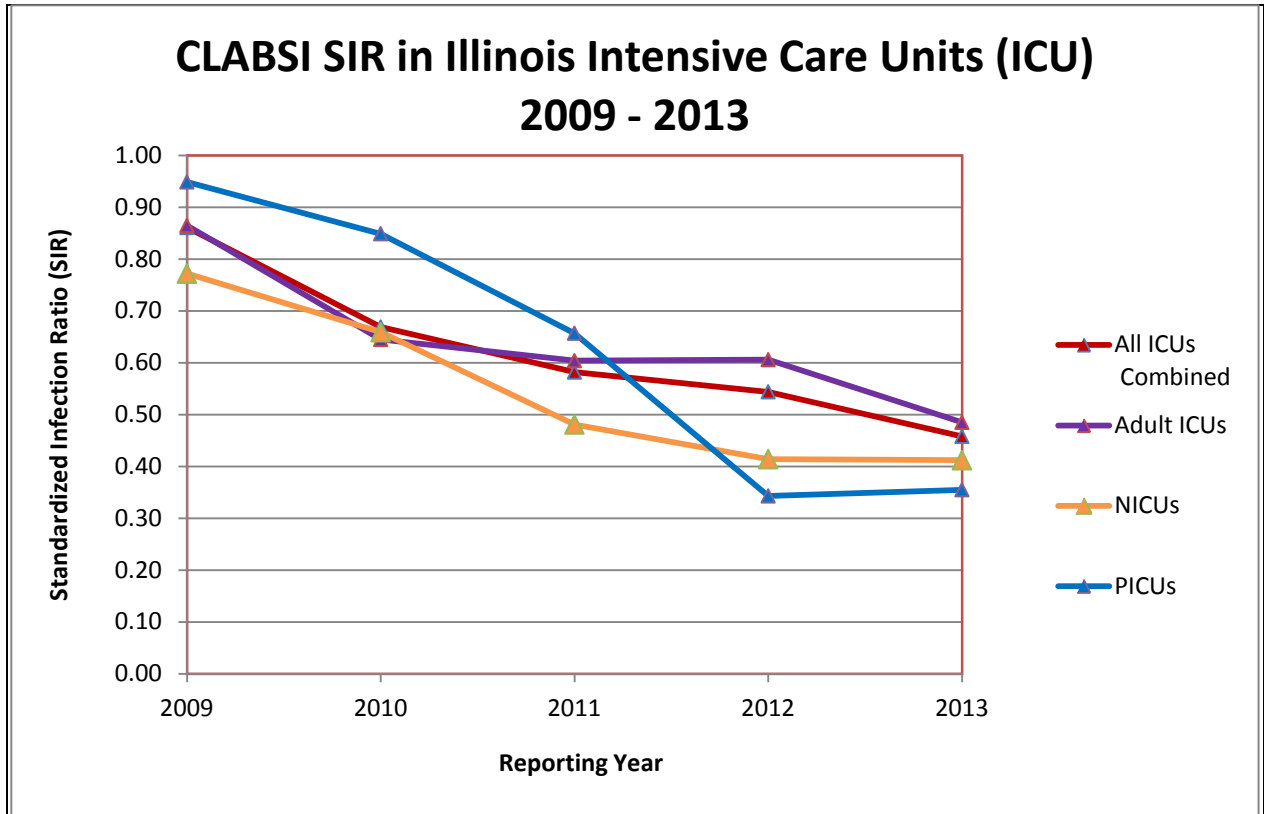
Annual reports of central line-associated bloodstream infections were published on the HRCCGH website for 2009 through 2013. A comparison of all Intensive Care Units between these years showed that fewer CLABSI occurred in Illinois hospitals overall, and the state’s standardized infection ratio for CLABSIs reduced significantly. The overall decrease in the number of central line-associated blood stream infections reported in adult Intensive Care Units (ICUs), pediatric ICUs, Neonatal ICUs, and all ICUs combined are statistically significant since 2009. The table below shows the relative percent change in SIR for all ICUs combined and each ICU type individually between 2009 and 2013.

Table 2. Relative Change in CLABSI SIR in All Illinois ICU Types: 2009-2013

Reporting Year	2009 (SIR1)	2013 (SIR2)	Relative Change in SIR (%) (SIR2/SIR1)*100 used by NHSN	Statistical Interpretation
All ICUs Combined	0.861	0.458	 53.19	Significant Decrease
Adult ICUs	0.865	0.485	 56.07	Significant Decrease
NICUs	0.772	0.412	 53.37	Significant Decrease
PICUs	0.949	0.355	 37.41	Significant Decrease

The graph in figure 1 below shows the downward trend in infections as measured by the SIR in each of the three ICU types individually, and all ICUs combined between 2009 and 2013.

Figure 1. SIR of CLABSI in Adult ICU, Neonatal ICU, Pediatric ICU, and All ICU Combined from 2009 - 2013



In summary, this analysis shows that Illinois hospital infections rates as noted by the SIR for all ICU located central line-associated blood stream infections has been steadily decreasing for the 5-year period of 2009 – 2013. This is similar to national improvements in CLABSI reduction and reflects progress toward meeting the National Action Plan target goals. NHSN surveillance provides the ability to monitor for such improvements over time.

Surgical Site Infections

Surgical Site Infections (SSI) Overview

Illinois hospitals have been reporting surgical site infection (SSI) data to the Illinois Department of Public Health (IDPH) using the NHSN since April, 2010. SSIs are infections that occur in the wound created by an invasive surgical procedure and are one of the most important causes of healthcare-associated infections (HAI). The surgeries monitored for SSI in Illinois include coronary artery bypass surgery (CABG) procedures and knee replacements (KPRO).

The CDC describes three types of surgical site infections:

- **Superficial incision SSI.** This infection occurs just in the area of the skin where the surgical incision was made.

- **Deep incision SSI.** This infection occurs beneath the incision area in muscle tissue and in fascia, the tissue surrounding the muscles.
- **Organ or space SSI.** This type of infection can be in any area of the body other than skin, muscle, and fascia that was involved in the surgery, such as a body organ or a space between organs.

IDPH monitors inpatient procedures and Deep Incision Primary and Organ/Space SSIs that were identified during admission or readmission to Illinois facilities as defined in the NHSN Manual. This report and analysis reflects the July 1, 2012 to June 30, 2013 SSI data of Illinois hospitals that perform coronary artery bypass graft (CABG) and total knee replacement (KPRO)surgery.

Coronary Artery Bypass Graft Surgery (CABG)

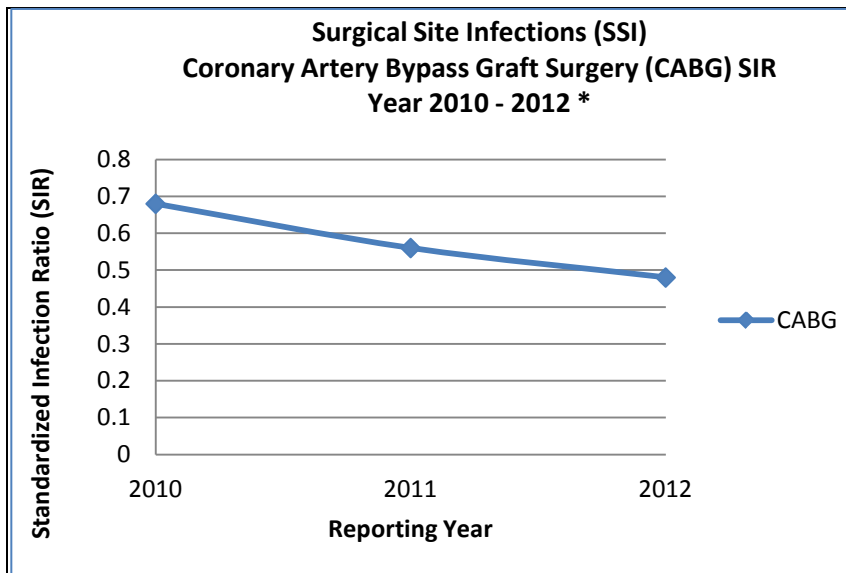
As shown in the following Tables and Figures, reductions in CABG SSIs have been observed since Illinois hospitals have started reporting CABG SSI in 2010. The reduction of CABG SSI from 2010 to 2012 was 29%. However, this was not a statistically significant reduction in SSI.

Table 3. Changes in SIR in Illinois SSI, 2010 compared to 2012: CABG

Year *	2010	2012	Percent Change	Significant Change	p-value
SIR	0.68	0.48	-29.41%	No	0.0818

The Illinois SIR values for CABG SSIs are trended over time in Figures 2 below.

Figure 2. SIR of CABG SSI in Illinois Hospitals from 2010 - 2012



Summary

CABG SSI trend analysis indicates consistent decreases in the number of CABG SSIs reported in all Illinois hospitals combined between 2010 and 2012, as reflected in the decreased SIR. This yearly decrease is not statistically significant. However, the number of CABG SSIs reported in all Illinois hospitals combined is statistically significant when compared to the national infection rate for each year reported.

Knee Arthroplasty (KPRO)

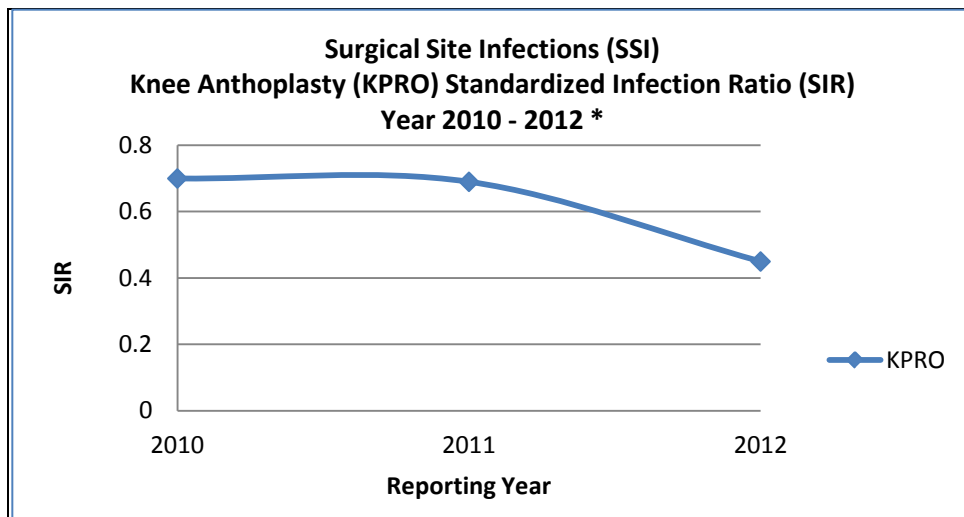
A knee arthroplasty, or KPRO, is a total knee replacement surgical procedure. As shown in the following Tables and Figures, significant reductions in KPROs have been observed since Illinois hospitals have started reporting KPRO SSI in 2010. The reduction of KPRO SSI collectively from 2011 to 2012 was 35% and from 2010 to 2012 was 36%. These were both statistically significant changes in SSI.

Table 4. Changes in Standardized Infections Ratios (SIRs) in Illinois KPRO SSI from 2010 - 2012

Reporting Year *	2010	2011	2012
Standardized Infection Ratio (SIR)	0.70	0.69	0.45

The Illinois SIR values for KPRO SSIs are trended over time in Figures 3 below.

Figure 3. SIR of KPROs in Illinois Hospitals from 2010 - 2012



Summary

KPRO SSI trend analysis indicates consistent decreases in the number of KPRO SSIs reported in all Illinois hospitals combined between 2010 and 2012, as reflected in the decreased SIR. The overall decrease in the number of KPRO SSIs reported in all Illinois hospitals combined is statistically significant since 2010.

Methicillin-Resistant Staphylococcus aureus (MRSA) Infections in Illinois Acute Care Hospitals

As indicated earlier, surveillance of health care-associated infections was phased in at Illinois hospitals over approximately 4 years. As of January 1, 2012, all Illinois hospitals began mandated reporting of blood cultures positive for MRSA using the Center for Disease Control and Prevention’s NHSN Multidrug-Resistant Organism (MDRO) Laboratory-identified (LabID) Event surveillance module. The LabID event surveillance method enables facilities to report proxy measures for healthcare-associated infections based on data obtained from the laboratory without clinical evaluation of the patient. Positive blood cultures for MRSA indicate if a patient has MRSA bacteremia or blood stream infection. Table 5 below provides a snapshot summary of hospital onset MRSA bloodstream infections in Illinois acute care hospitals from 2012 through 2013.

Table 5. Summary of HO MRSA bloodstream infections Data, 2012-2013

Reporting Year	# Facilities Reporting	# MRSA Infections (Observed)	# MRSA Infections (Predicted)	SIR (95% Conf. Interval)	% Change (SIR) (95% Conf. Interval)	p-value	Statistical Interpretation (% Change)
2012	179	358	419.80	0.853 (0.768, 0.945)	16.2% (0.718, 0.978)	0.0251	Significant Decrease
2013	183	293	408.56	0.715 (0.636, 0.800)			

Summary

In 2013, 293 hospital onset MRSA infections were reported compared to 409 predicted, for an SIR of 0.715 (95% CI 0.636, 0. 800). This translates to a significant reduction of 28% compared to the national referent period data. In addition, there was a significant decrease of 16.2% in the number of hospital onset MRSA infections reported in Illinois acute care hospitals (based on SIR) compared to 2012.

Clostridium difficile Infections Reporting in Illinois Acute Care Hospitals

As of January 1, 2012, all Illinois hospitals began mandated reporting of blood cultures positive for *Clostridium difficile* Infections (CDI) using the NHSN Multidrug-Resistant Organism (MDRO) Laboratory-identified (LabID) Event module. *Clostridium difficile* Infections data are summarized using the standardized infection ratio (SIR). Table 6 below provides a snapshot summary of hospital onset CDI in Illinois acute care hospitals from 2012 through 2013.

Table 6. Summary of HO CDI infections Data, 2012-2013

Reporting Year	# of Facilities Reporting	# CDI Infections (Observed)	# CDI Infections (Predicted)	SIR (95% Conf. Interval)	% Change (SIR) (95% Conf. Interval)	p-value	Statistical Interpretation (% Change)
2012	179	4620	4994.79	0.925 (0.899, 0.952)	2.3% (0.938, 1.019)	0.279	Not Significant
2013	183	4466	4939.25	0.904 (0.878, 0.931)			

Summary

In 2013, 4466 hospital onset CDI were reported compared to 4939 predicted, for an SIR of 0.904 (95% CI 0.878, 0.931). This translates to a significant reduction of 9.6% compared to the national referent period noted above. In addition, there was a decrease of 2.3% in the number of hospital onset CDI reported in Illinois acute care hospitals compared to 2012. However, this reduction of CDI SIR is not statistically significant (p-value=0.279). Persistent efforts toward prevention of CDI are indicated.

Health Care-associated Infection Prevention Programs

The Division of Patient Safety and Quality has led an array of quality improvement activities focused on prevention of HAIs. Once accepted as an unfortunate but inevitable consequence of health care, HAI prevention is now considered a “winnable battle”. Successful and sustained HAI prevention requires close integration and collaboration between state and local health care organizations. The Illinois Department of Public Health has a central role in HAI prevention in Illinois because it is responsible for the protection of patients across health care systems and is uniquely situated to serve as a bridge between health care systems and the community. The Division has an HAI program coordinator, a statewide HAI plan and a HAI Prevention Advisory Council representing an array of partners across the state. Over the last several years, the Department has targeted quality improvement initiatives for HAI elimination that address areas that were identified as the most challenging “battles” in need of support from the state health department: Clostridium difficile (CDI), Carbapenem-resistant Enterobacteriaceae (CRE), and antibiotic (antimicrobial) stewardship. Not coincidentally, CDC has classified Clostridium difficile and CRE as two of the top three antibiotic resistant infection threats in the United States (3). The Division’s HAI Prevention program has played an instrumental leadership role in driving the state’s agenda to prevent multi-drug resistant organisms and promote antimicrobial stewardship – from prevention collaboratives and statewide education campaigns, to state and regional seminars and summits with health care facilities.

CDI Prevention

The HAI Program's work in CDI prevention began with two small hospital prevention collaboratives in 2009 and 2010 that resulted in a 15% and 26% reduction in CDI respectively. Prevention collaboratives engage health care facilities to work together to implement improvements in the delivery of care to patients in specifically identified areas.. Building on the success of these collaboratives, a statewide CDI prevention campaign was implemented in 2012 to disseminate evidence based best practices for CDI prevention and facilitate an increase in health care facility engagement in CDI prevention activities. The campaign widened to include both acute care hospitals and long term care facilities. Over 250 hospitals and long term care facilities participated in the campaign, which included eight educational webinars, and 3 regional conferences. Over 450 participants attended the regional meetings.

Since CDI can spread across health care agencies that transfer or share patients, in March 2013 a collaborative was initiated with 4 hospitals and 11 skilled nursing facilities to prevent CDI across the continuum of care. This project ended in July 2014 and brought together hospitals and skilled nursing facilities in regional teams for the first time. It has highlighted the need for infection prevention and quality improvement infrastructure at skilled nursing facilities and shown the gaps and difficulties in communicating CDI prevention across health care settings. Based on this work, more focused efforts on preventing CDI across transitions of care is being planned.

Antimicrobial Stewardship

An estimated 25% - 50% of systemic antimicrobials, or antibiotics, are prescribed in hospitals inappropriately (4). These estimates range even higher at long term care facilities. Antibiotic misuse propels antibiotic resistance and increases in health care-associated infections. Three major initiatives around antimicrobial (antibiotic) stewardship were launched over this past year to promote best practices : 1) a small antimicrobial stewardship collaborative with 6 acute care hospitals, five being part of a major hospital system; 2); an assessment of antimicrobial stewardship practices amongst long term care facilities; 3) and 5 statewide educational webinars on antimicrobial stewardship were presented.

The antimicrobial collaborative was launched in the fall of 2013 and is currently in progress. All hospitals are submitting antimicrobial use data through the CDC's NHSN surveillance system. Major activities of the collaborative thus far included facility self-assessment of antibiotic use based on a framework developed in an earlier collaborative, two in-person meetings, monthly planning and sharing calls, development and piloting of facility-specific guidelines for use of select priority antimicrobials, and data review for evaluation. Clinical pharmacists implemented post-prescription reviews to assess provider adherence to the criteria for use with early success. Final outcome evaluation will take place at project end next year.

A two pronged assessment of long term care facility (LTCF) antimicrobial stewardship practices was undertaken to understand and improve the use of antibiotics and identify the challenges in stewardship efforts in this setting. An online survey was sent to 755 LTCF, with 462 respondents. Eleven in-depth interviews were conducted with five different health care provider team members at each setting. Only 20% of survey respondents agreed that antibiotic resistance or use is a problem at their facility. While

93% of facilities have a designated infection control staff member as mandated by Illinois law (210 ILCS 45), only half of these individuals had any training specific to infection control. Monitoring of antibiotic use was reported at 89% of facilities surveyed. However fewer than 50% of facilities provide feedback to providers and data is reviewed only by the Director of Nursing. The LTCF reported challenges with expectations from residents and their families, prescriber attitudes, quality of nurses' assessments and communication with prescribers. This assessment has provided valuable information that will allow tailoring of continued stewardship and prevention efforts to target existing gaps.

CRE Prevention

Carbapenam –resistant enterbacteriaceae, or CRE, is a recently emerging infectious disease threat. CRE are a family of bacteria that are difficult to treat because they are highly resistant to antibiotics. CRE infections occur in people who are sick or have been exposed to treatment in acute and long term health care settings. Because of the high resistance to antibiotics, CRE can be very difficult to treat and risk of death is higher than many other infections.

The Division initiated a three pronged approach to CRE prevention in Illinois: 1) a statewide task force of subject matter experts was convened to guide CRE prevention activities; 2) a CRE Education campaign for health care facilities, labs and health departments was implemented; and 3) an XDRO (extremely drug resistant organism) registry was established for reporting CRE.

Over 30 representatives from facilities across the care continuum, laboratories, state and local health departments, hospital and long-term care associations, and the state quality improvement organization comprise the CRE Task Force which developed guidelines for CRE laboratory testing procedures, providing outbreak response and prevention guidance to health care organizations, and adapted the CDC CRE prevention toolkit recommendations for long-term care settings.

A statewide CRE Detect and Protect Campaign provided education to health care facilities, labs, and health departments. Twenty three key stakeholders sponsored the campaign, nine training webinars were provided with 1,033 people from 227 facilities attending, two websites were created to provide resources and archives of webinars, and 650 CRE resource packets were printed for health care facilities and laboratories. In an evaluation, 203 participants reported taking at least one infection control action as a result of the campaign. Highlights of the evaluation included: 53% monitored hand hygiene, 46% educated staff about CRE, 47% monitored adherence to contact precautions, and 32% promoted antimicrobial stewardship.

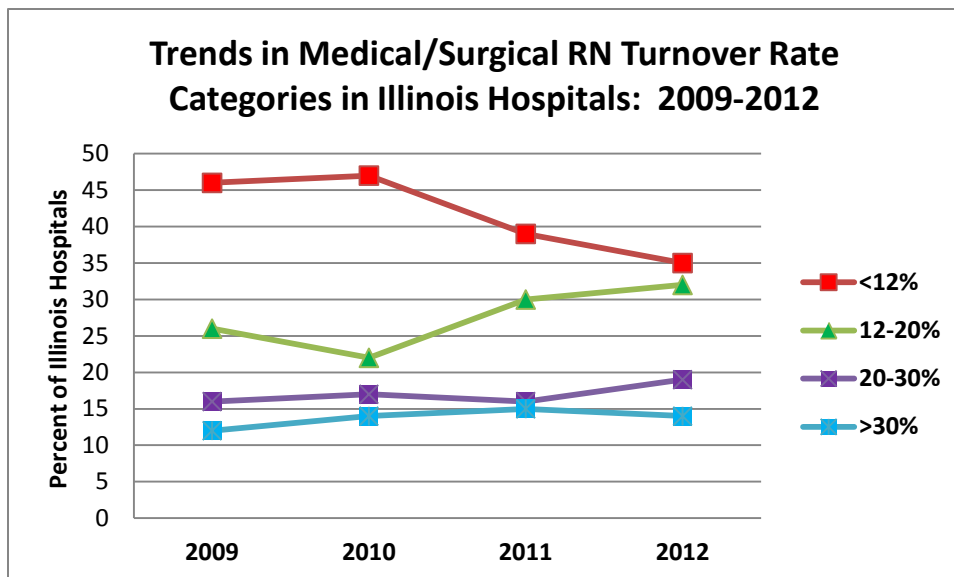
Central to the Division's Detect and Protect campaign was the development of a novel public health tool called the Extensively Drug Resistant Organism (XDRO) registry which launched on November 1, 2013. Acute and long-term care facilities and laboratories began reporting CRE to the XDRO registry as required by the Illinois Communicable Disease Act (77 Ill. Adm. Code 690). Through June 30, 2014 121 facilities had submitted 735 reports (by culture date, de-duplicated by patient).

Nurse Turnover

Nurses provide around the clock, direct care for patients in hospitals. As such, they play a key role in ensuring the safety and quality of care for patients. Researchers have linked several measures of nurse staffing to improved patient outcomes and patient safety (5).

Nursing turnover reflects the rate at which nurses leave a hospital staff position. High turnover can represent nurse job dissatisfaction. A high turnover rate may impact a hospital's productivity, delivery, and quality of care if skilled and experienced nursing staff is lost. The information below is based on data submitted from hospitals to the Illinois Department of Public Health. National benchmarks for nursing turnover are not publicly available. However, a number of investigators consider a turnover rate of less than 12% among hospital staff as most optimal (6). Hospitals with official "Magnet Designation" reported overall R.N. turnover rates of 10.72% in February 2014 (7). Magnet recognition is a formal designation of the American Nurses Credentialing Center, a subsidiary of the American Nurses Association, which recognizes health care organizations that demonstrate excellence in nursing practice and quality patient care as a driving force. In Illinois, of 182 acute care hospitals 65% reported a turnover rate higher than is considered optimal in medical/surgical units for the year 2012. Turnover data for 2013 was not available for this report. However, trend data on R.N. turnover is presented below from 2009 through 2012. Hospitals included in this analysis included all rural, urban, large and small acute care facilities. Note that the percent of hospitals falling into the optimal turnover rate category of <12% actually decreased 24% between 2009 and 2012. Concurrently, during the same period the percent of hospitals falling into the 12-20% category of R.N. turnover rate increased by 23%. Continued monitoring of this trend will be important.

Fig. 4 Trends in Medical/Surgical RN Turnover Rate Categories in Illinois Acute Care Hospitals: 2009-2012

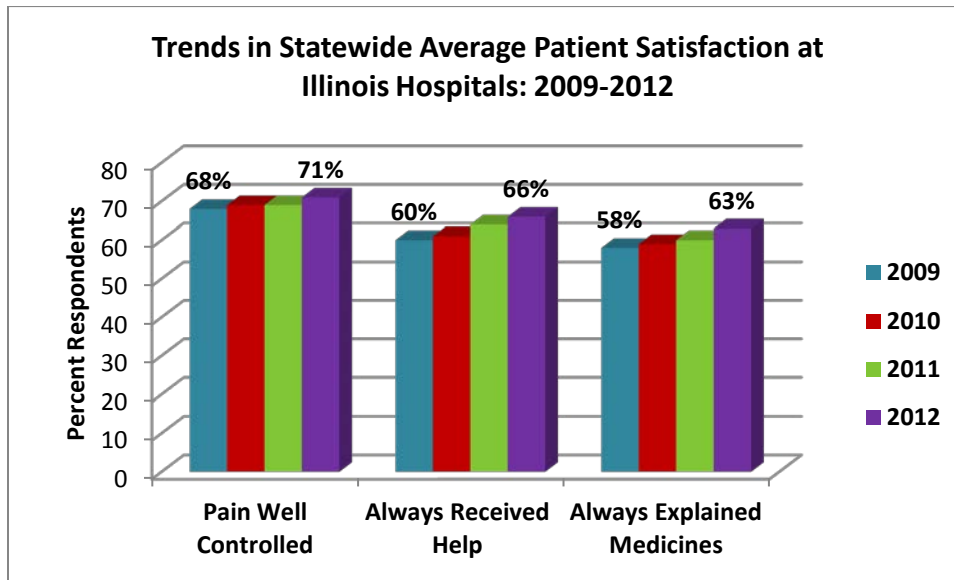


Person and Family-Centered Care – Ensuring that each person and family are engaged as partners in their care

Timely access to health care that is sensitive to the needs and preferences of patients and their families is one of the six priority aims of the National Quality Strategy. Understanding what is needed to optimize an individual's health, what relevant treatment options are available, and being able to make choices that fit an individual's lifestyle are essential for staying healthier. High quality health care entails getting clear information about care plan options and having positive experiences with the health care delivery system. Patient-centered care is a dimension of health care quality that highlights the importance of patients being at the center of health care delivery, with emphasis on listening to patients' perspectives and choices, providing information and support for health care self-management and decision making, collaborating and using a shared decision-making process, and enabling patients to navigate and manage their care effectively. Patient experience of care should be evaluated related to quality and safety to help guide improvements in this arena. Data on patient satisfaction with recent hospitalization is presented and updated regularly on the Illinois Hospital Report Card.

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) is a national, standardized survey of hospital patients. The survey asks a random sample of recently discharged patients about important aspects of their hospital experience. The data are collected by the Centers for Medicare and Medicaid Services. Highlighted below are trends in Illinois statewide average patient satisfaction for three survey questions: 1) pain was always well controlled; 2) always received help as soon as wanted; and 3) staff always explained medications. Note that although improvements are indicated, some progress in improving success with these measures has been made in recent years. Health care facilities are being challenged to redesign care in ways that are authentically patient-centered. Annual results of the HCAHPS survey is one avenue to evaluate improvement in this arena over time, and will continue to be monitored on the HRCCGHC web site.

Fig. 5 Trends in Statewide Average Patient Satisfaction at Illinois Hospitals: 2009-2012

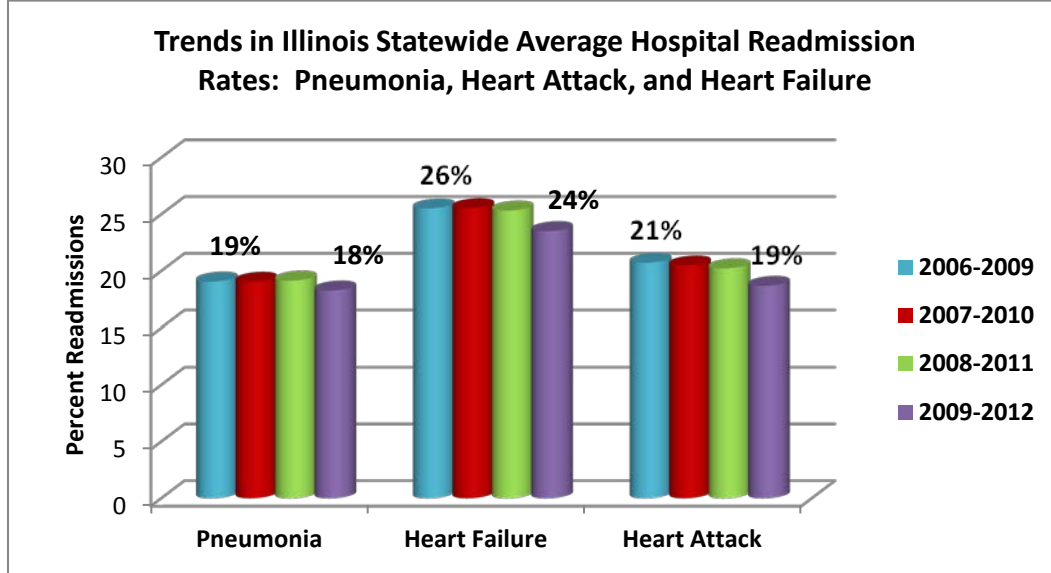


Coordination of Care – Promoting effective communication and coordination of care

A 2009 study in the New England Journal of Medicine found that nearly one in five Medicare recipients discharged from the hospital is readmitted within thirty days (8). This translates into approximately 2.4 million patients. It has been estimated that three quarters of these readmissions could have been prevented, and that the cost to Medicare was \$17.4 billion dollars. Readmissions are associated with a variety of factors including poor coordination of care from the inpatient to outpatient settings, poor communication and medication errors. Promoting effective communication and coordination of care can improve the quality and safety of health care by decreasing preventable health complications and unnecessary hospitalizations, duplication of diagnostic tests and fewer conflicting prescriptions. Driven by the Affordable Care Act, the National Quality Strategy and a host of other national initiatives, efforts have been underway to reduce hospital readmission rates and improve coordination of health care.

Rates of hospital readmission can give information about whether a hospital is doing its best to prevent health complications, educate patients at discharge, and ensure patients make a smooth transition to their home or another setting such as a nursing home. The HRCCGHC website presents data from the Centers for Medicare and Medicaid on hospital readmissions for three major conditions: pneumonia, heart failure, and heart attack. The graph below shows trends in Illinois statewide average hospital readmission rates for these three conditions. These measures are published in three year combined reporting periods over time with a July 1-June 30th reporting cycle. The data below highlights four reporting periods. Note that rates are trending downward as part of initial efforts to reduce readmission rates by 20 per cent.

Fig. 6 Trends in Illinois Statewide Average Hospital Readmission Rates: Pneumonia, Heart Attack, and Heart Failure



Clinical Care – Promoting Effective Prevention and Treatment

Chronic diseases are the leading cause of death in this country. Over 130 million Americans have at least one chronic illness (9). Many Americans have several. Preventing and treating the leading causes of mortality and illness is a major aim of the National Quality Strategy. This includes cardiovascular disease, cancer, diabetes, HIV/AIDS, premature births and behavioral health conditions. Below are data from the Illinois HRCCGH as well as highlights of special projects related to effective prevention and treatment of several of these health conditions.

Maternal Child Health

Breast Feeding

Breast feeding has been shown to provide important benefits for both mother and baby. Breast milk contains antibodies that protect infants from bacterial and viral infections, and breast fed infants are at lower risk of certain chronic diseases including diabetes, obesity and asthma (10). Research indicates that women who breast feed may also have lower risk of some health problems, including certain breast and ovarian cancers, Type 2 Diabetes, and postpartum depression (11). In 2013, the Illinois Department of Public Health Vital Statistics began collecting more precise measures of breast feeding that include a measure for exclusive breast feeding. Breast feeding exclusively without reliance on formula milk provides the most protective benefits for mother and child.

Between January 1, 2013 and December 31, 2013 the percent of newborns exclusively breast fed prior to release from Illinois hospitals was 54%. This provides a baseline for examining this measure over

time. The percentage of newborns that received “any” breast feeding prior to hospital release, including those who were exclusively breastfed, was 73%, while those newborns exclusively fed formula was 25%.

The CDC’s Breastfeeding Report Card, which includes data from their national survey shows similar results for “any” breast feeding for Illinois at 75.2%. However, the CDC data for Illinois for exclusive breastfeeding at three months was 34.6% and six months was 11.1 % demonstrating room for improvement (12). Overall it has been shown that the longer a woman breastfeeds, the greater the protective benefit. Healthy People 2020 recommends the following target breastfeeding goals for 2020 (13):

Healthy People 2020 Breast Feeding Category	Target Goal
Ever breast fed	81.9%
Exclusive breastfed through 3 months	46.2%
Exclusive breastfed through 6 months	25.5%

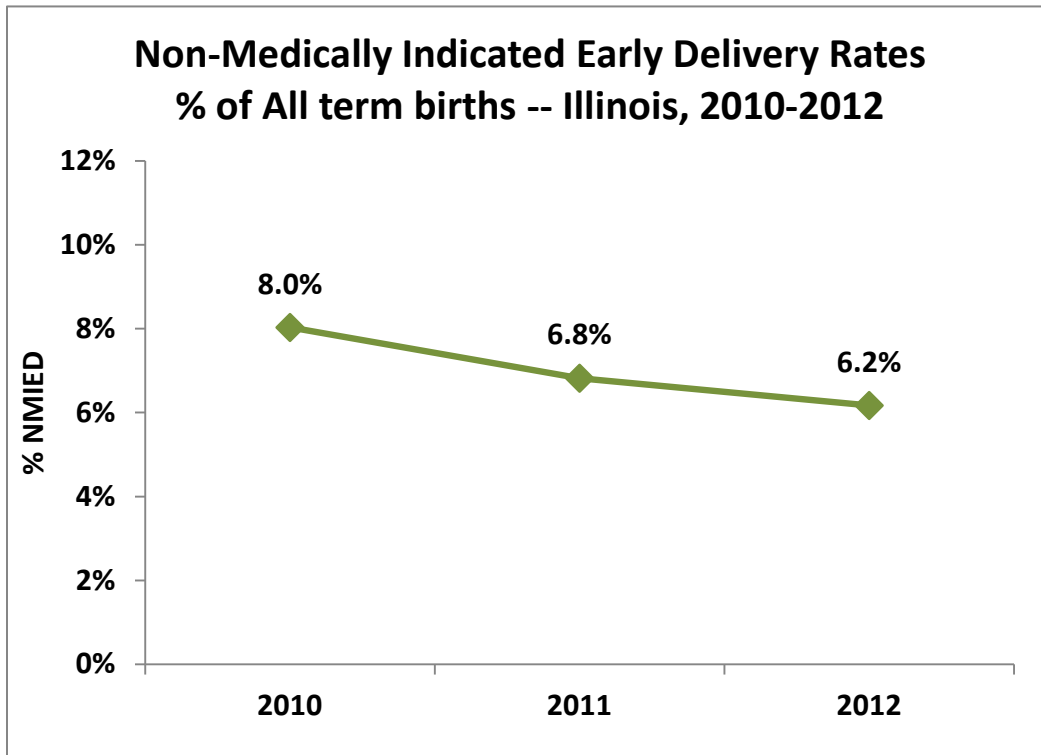
Success with breast feeding can be supported in a variety of ways and settings. One way is for health care institutions to adopt policies that foster effective breast feeding. The World Health Organization, the Centers for Disease Control and Prevention, Healthy People 2020 and the U.S. Surgeon General have all released initiatives to increase the percentage of “baby friendly” hospitals (www.babyfriendlyusa.org). The Healthy People 2020 goal is to increase “baby friendly” designated hospitals from less than 5% to 8.1 % (14). Four Illinois hospitals currently have the WHO baby friendly designation as of June 2014. According to the CDC Breastfeeding Report Card, approximately 2.55% of hospitals delivering babies in the State are designated as Baby Friendly.

Early Elective Deliveries

Non-medically indicated early elective deliveries (NMIEED) occurring at 37 and 38 weeks gestation have potential health consequences for both mothers and newborns, including neonatal respiratory distress, neonatal intensive care unit admissions, and neonatal mortality. A study in the American Journal of Obstetrics and Gynecology estimated the cost of non-medically indicated early elective deliveries to be nearly \$1 billion dollars (15) per year and recommends all hospital have a “hard stop” policy to address this practice. A hard stop policy is a policy that prohibits early deliveries within the hospital that are not medically indicated.

The Division of Patient Safety and Quality used 2010-2012 birth certificate and discharge data and a nationally vetted algorithm to identify non-medically indicated deliveries between 37-38 weeks gestation. Figure 7 shows the percent of all Illinois births that were non-medically indicated between 2010 and 2012. Note that the rate is decreasing, although continued monitoring is indicated to achieve the target benchmark of <5% (16).

Fig 7: The % of non-medically indicated early elective deliveries between 37-38 weeks of all term births in Illinois.



The Division of Patient Safety and Quality worked with the Collaborative Improvement and Innovation Network (<http://mchb.hrsa.gov/infantmortality/coiin/>), a public/private partnership to reduce infant mortality and improve birth outcomes, to build a network to support continued reduction in NMIEED. In addition to the statewide data above, hospital-specific rates of NMIEED were calculated for each hospital and compared to rates for the regional perinatal network, other hospitals within the perinatal care level, and the state. Letters were sent to each hospital from the Director of IDPH encouraging implementation of “hard stop” policies together with individual hospital data and quality improvement resources. Data resources and partnership infrastructure built for this effort will be used for ongoing efforts to improve maternal health care and reduce infant mortality.

Cardiovascular Disease Reduction

Despite significant decline in recent years, cardiovascular disease is still the leading cause of mortality in this country. It accounts for one of every three deaths in the country and over \$503 billion in expenditures annually (17). In Illinois, cardiovascular disease mirrors the national picture. It is the leading cause of death in the State and responsible for one third of all deaths. The mortality rate in 2009 for Illinois was 453 per 100,000 population versus 451.8 for the nation. Despite these statistics, cardiovascular disease is preventable. Cardiovascular disease prevention and treatment is a major focus of the National Quality Strategy.

An array of risk factors can increase the likelihood of developing cardiovascular disease, including hypertension, high cholesterol, smoking, obesity, physical inactivity, poor nutrition, and diabetes. Many of these risk factors can be effectively controlled to decrease cardiovascular risk. If people with hypertension were effectively treated to reach the targeted goal (<140/90mmHg) for example, an estimated 46,000 deaths would be prevented annually. Effective risk factor control requires interventions that address both clinical care and the broader social/environmental determinants of health and promotion of healthy behaviors.

The Million Hearts Initiative is a public-private partnership led by the Centers for Disease Control and Prevention with 65 partners. The goal is to prevent 1 million heart attacks and strokes over the next five years. The focus includes targeting use of aspirin, blood pressure and cholesterol control, clinical decision support and smoking cessation to achieve this goal. The Division was one of 9 awardees funded by the Association of State and Territorial Healthcare Organizations to implement a Million Hearts Learning collaborative focused on hypertension control in 2013/2014. The collaborative focused on two Illinois counties and fostered partnerships with local health departments, federally qualified health clinics, community agencies, and local provider groups. Local partnerships worked together to identify populations with high hypertension rates, resources available to address hypertension and then to activate system level change to improve hypertension control. Three major strategies of the project included 1) data driven quality improvements including the use of quality dashboards at clinics; 2) development of public health and clinical linkages; and 3) implementation of self-management tools. State and local data identified 3,086 patients with hypertension and 1,156 patients with uncontrolled hypertension. Seventeen quality dashboards for clinics reporting on approximately 10,394 patients helped identify those with uncontrolled hypertension along with state prepared zip code analysis of high burden zip codes. One county implemented a referral system for lifestyle management classes and home blood pressure monitoring. The other county developed a high blood pressure measurement training program, trained church based community health workers and developed monitoring clinics at 5 churches located in zip codes with disparate hypertension burden. Plans to expand this initiative to three other counties is underway pending continued funding.

Population and Community Health – Working with communities to promote widespread use of best practices to enable healthy living.

This fifth aim of the National Quality Strategy focuses on promoting access to effective preventive and primary health care, as well as factors beyond the health care delivery system that focus on the social determinants of health. Social determinants of health include the physical and social environment of communities, healthy behaviors such as nutritious foods and physical activity, and equity in opportunity for healthy living.

The Illinois Public Health Community Map feature of the HRCCGHC web site (<http://www.healthcarereportcard.illinois.gov/map>) makes information about the quality of health in communities available to the public, and highlights socioeconomic and racial/ethnic disparities that may exist. Data are presented and displayed geographically by Illinois region, county, and by sub-region and

zip code for Cook County and Chicago. A major focus of the website is on access to health care. An array of measures are presented that can serve as a screening tool for identifying problems involving access to primary care and other quality issues. These data are a unique view of Illinois health care issues at the community level. In October 2013 the technical platform for the Map was rebuilt to allow dynamic population of measures and data as well as to increase speed and modern browser compatibility. An “export data” feature was built to allow users to export data on selected measures. New measures on supply of primary care physicians and air pollution were added and other measures were updated to include the most recent available year’s data. The Map provides data on overall emergency room uses as well as use associated with diabetes and asthma, preventable hospitalizations, and geographic variation for these measures across the state. Highlighted below are trend data from the Map focused on access to health care.

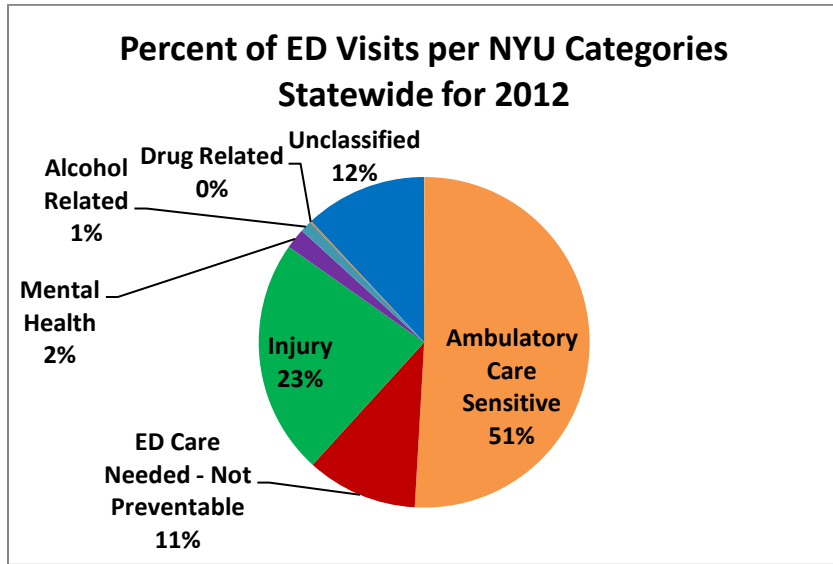
Access to Care: Potentially Preventable Emergency Department Visits

Emergency department (ED) visit volume has surged in recent years, and many people are using these services as a primary means of obtaining medical care. When access to health care is compromised inappropriate emergency department use is more likely to occur – an expensive alternative. Healthy People 2020 describes four essential components for understanding the issue of access to care: 1) adequate health insurance coverage; 2) having a usual and ongoing source of care with a primary care provider; 3) timely provision of health care when needed; and 4) having an adequate workforce of primary care physicians. Ensuring access to high quality health care, reducing inappropriate care and decreasing costs are key aims of the national quality agenda.

Illinois emergency department discharge data were initially examined using an algorithm developed by New York University center for Health and Public Service Research that categorizes emergency department visits according to primary care preventable versus emergent visits (18). The algorithm also categorizes visits by mental health (psychiatric, alcohol or drug abuse) and injury visits. Discharge data for calendar years 2009 through 2012 were examined to provide information about the magnitude and trends associated with primary care preventable ED visits and disparities that exist. For purposes of the forthcoming data highlights, ambulatory care sensitive is terminology often used interchangeably with primary care preventable.

In 2012 there were approximately 4.3 million outpatient (treat and release) Emergency Department visits in Illinois, with \$11.7 billion dollars in associated charges. As the graph below depicts, 51 percent of visits were categorized as Primary care preventable, or “ambulatory care sensitive”. The distribution of ambulatory care sensitive visits has remained remarkably stable for the past four years at approximately 50% of visits.

Fig. 8 Distribution of Illinois ED Visits by New York University Algorithm Categories: 2012



Between 2009 and 2012 overall ED visit volume increased, while the percent distribution of ambulatory care sensitive, emergent, injury, and mental health/substance abuse visit categories remained remarkably stable. Ambulatory care sensitive visits accounted for 50 -52 percent of visits during this time period. Visit volume is depicted below for total ED visits and ambulatory care sensitive visits. Total ED visit volume increased 8.39% between 2009 and 2012, while ambulatory care sensitive visits increased 6.38% during this time.

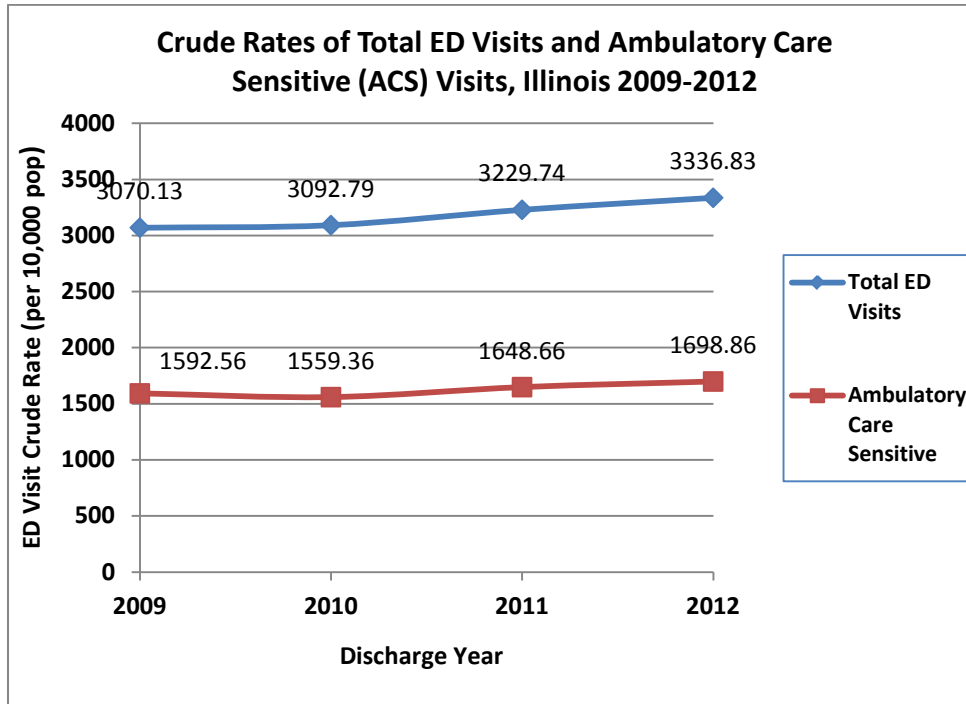
Table 7.

Number of outpatient ED visits in Illinois, FY 2009 and FY 2012

	2009	2012	Percent Change
Total ED Visits	3,963,659	4,296,260	8.39%
Ambulatory Care Sensitive Visits	2,056,058	2,187,324	6.38%

Correspondingly, crude rates for both total and ambulatory care sensitive ED visits increased similarly between 2009 and 2012 as shown below. The total ED crude rate increased 8.68%, while the ambulatory care sensitive crude rate increased 6.67%.

Fig. 9 Crude rates of total ED visits and ambulatory care sensitive visits in Illinois: 2009-2012



Characteristics of Patients Visiting Emergency Departments

Examination of characteristics of ED visitors for year 2012 revealed use by a higher percentage of women, 56% of total ED visits and 61% of ambulatory care sensitive visits. Although Illinois census data shows 14.8% of the population is African American, 27% of total ED and 31% of ambulatory care sensitive visits occurred amongst this group indicating a higher visit burden. The largest percentage of visits by payer were associated with Medicaid (35% of total visits and 39% of ambulatory sensitive visits) and private insurance (33% of total visits and 30% of ambulatory sensitive visits).

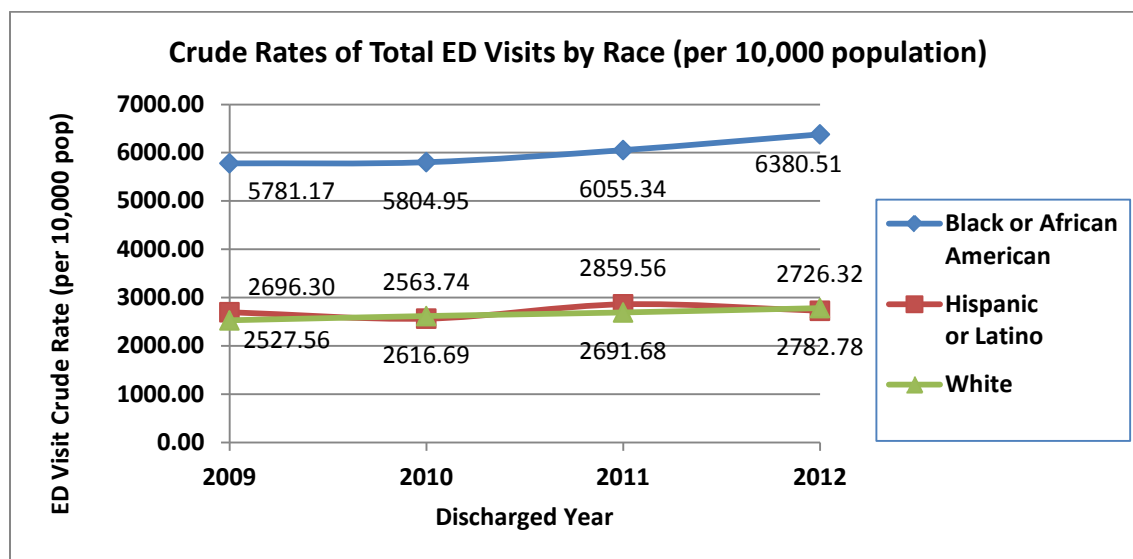
Table 8 Distribution of Outpatient ED Visits by Patient Characteristics, 2012

Category	Total ED Visits		Ambulatory Care Sensitive (ACS)	
	# ED Visits	ED Visits (%)	ACS Visits	ACS (%)
Race/Ethnicity				
White	2252294	52%	1059736	48%
Black or African American	1164842	27%	672469	31%
Hispanic or Latino	572529	13%	302999	14%
Other/Unknown	306595	7%	152120	7%
Sex (Female or Male)				
Female	2423304	56%	1324293	61%
Male	1872871	44%	862999	39%

Age Group				
Under 5 years	495561	12%	297385	14%
5-17 years	645914	15%	310439	14%
18-24 years	537948	13%	279904	13%
25-44 years	1252648	29%	649814	30%
45-64 years	883263	21%	430699	20%
65 and older	480926	11%	219084	10%
Payer Mix				
Medicaid	1493368	35%	863082	39%
Medicare	620833	14%	295989	14%
Private Insurance	1434735	33%	652792	30%
Uninsured/ Other	747324	17%	375460	17%
Statewide Total Visits	4296260		2187324	

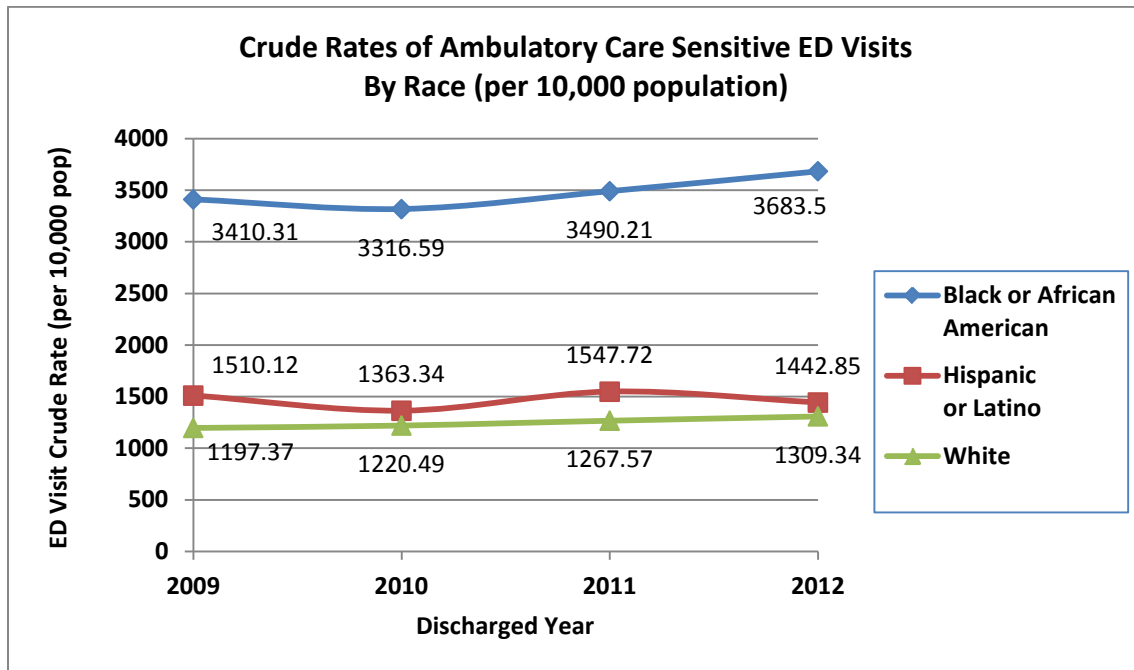
To examine the issue of disparities in ED visits more carefully, crude rates by race/ethnicity were analyzed for both total ED visits and ambulatory care sensitive ED visits for 2009 through 2012. Total ED crude visit rates increased similarly between African American and white Americans during this time (10%). However, visit rates for African Americans were approximately 2.3 times higher in 2012, a marked difference. Total ED visit rates increased only 1% for Hispanics, remaining fairly stable and notably lower than the African American visit rate.

Fig. 10 Crude rates for total ED visits by race, 2009-2012



Although ambulatory care sensitive ED visit crude rates for black and white people increased similarly between 2009 and 2012 (8 and 9% respectively), black people had ambulatory sensitive visit rates that were 2.8 times higher than white people and 2.5 times higher than Hispanic people. Rates for Hispanic people actually went down approximately 4% during this time period.

Fig. 11 Crude rates of ambulatory care sensitive ED visits by race, 2009-2012



Efficiency and Cost Reduction – Making Quality Care More Affordable

Over the past decade the pace of health care spending has grown faster than inflation and national income. This growth is expected to continue to increase without intervention. An essential aim of the National Quality Strategy is to reduce the cost of quality health care for individuals, families, employers, and government. High quality health care becomes meaningful when it is affordable for the American public. Improvements in quality of care can also be mirrored by improvements in costs of care. Highlighted below are three issues from the HRCCGHC and Map web sites related to quality and expenses of care.

Preventable Emergency Department Visit Charges

Charges associated with preventable ED visits are featured on the Illinois Public Health Community Map. In 2012 the 4.3 million outpatient ED visits in Illinois were associated with \$11.7 billion dollars in total charges. Of these visits, 51 percent were categorized as primary care preventable with 5.5 billion dollars of associated charges. The table below shows the charges associated with different categories of ED visit. Note that charges are list prices established by hospitals each year before negotiated discounts are applied.

Table 9 Charges associated with different categories of ED visit

2012 ED Category	Charges	% of Charges
Ambulatory Care Sensitive	\$5,511,686,510	47%
ED Care Needed - <u>Not</u> Preventable	\$2,330,374,165	20%
Injury	\$2,082,834,968	18%
Mental Health	\$202,629,403	2%
Alcohol Related	\$151,682,799	1%
Drug Related	\$18,079,314	<1%
Unclassified	\$1,406,538,783	12%
Total ED Charges	\$11,703,825,942	100%

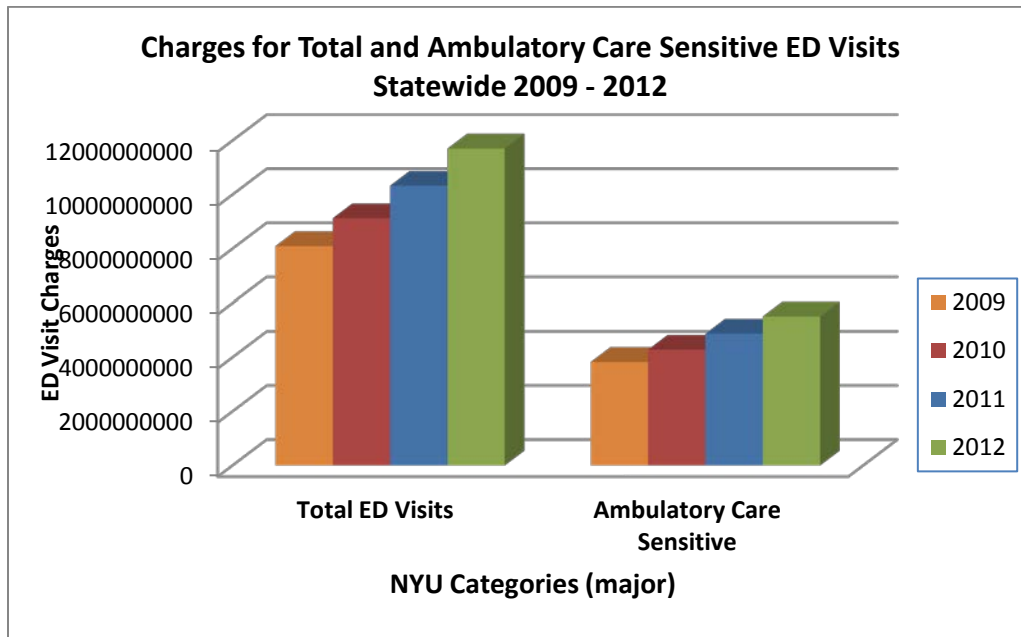
Charges associated with ED visits increased annually for both visit categories as shown below. Charges for total ED visits rose 45 percent and for ambulatory care sensitive visits 44% between 2009 and 2012, a marked contrast to the more modest increase in total ED visits that occurred during this time.

Table 10 Percent change in total and ambulatory care sensitive charges, 2009-2012

	2009	2012	Percent Change
Total ED Charges	\$8,094,887,154	\$11,703,825,942	45%
Ambulatory Care Sensitive Charges	\$3,830,402,092	\$5,511,686,510	44%

The graph below shows the annual step-wise growth in charges for total and ambulatory care sensitive ED visits between 2009 and 2012.

Fig. 12 Growth in charges for total and ambulatory care sensitive ED visits, 2009-2012



Although charges do not reflect actual payments, they give some insight into potential costs. With new innovations in health care delivery focused on primary care and prevention and development of the patient centered medical home, preventable ED visits and their associated charges could potentially be significantly reduced. This data provides a potential baseline for measuring improvements in the organization and efficiency of health care delivery and associated excess costs.

Variation in Hospital Charges for Specific Conditions and Procedures

The Illinois Health Finance Reform Act states that public and private sector purchasers of health care need health care cost and utilization data to enable them to make informed choices among health care providers in the market place. The Illinois Department of Public Health, through publication of the Consumer Guide to Health Care provides utilization and charge data for a variety of inpatient and outpatient conditions and procedures. Below are highlights in variation of charges for several inpatient conditions and outpatient procedures. Note that charges are list prices established by hospitals each year, not actual dollar amounts received in payment. All patients are charged the same list price for the same services before applying any discounts. Cost data are not available in the discharge data set.

Fig. 13 Variation from median charge for three inpatient conditions, 7/1/12-6/30/13

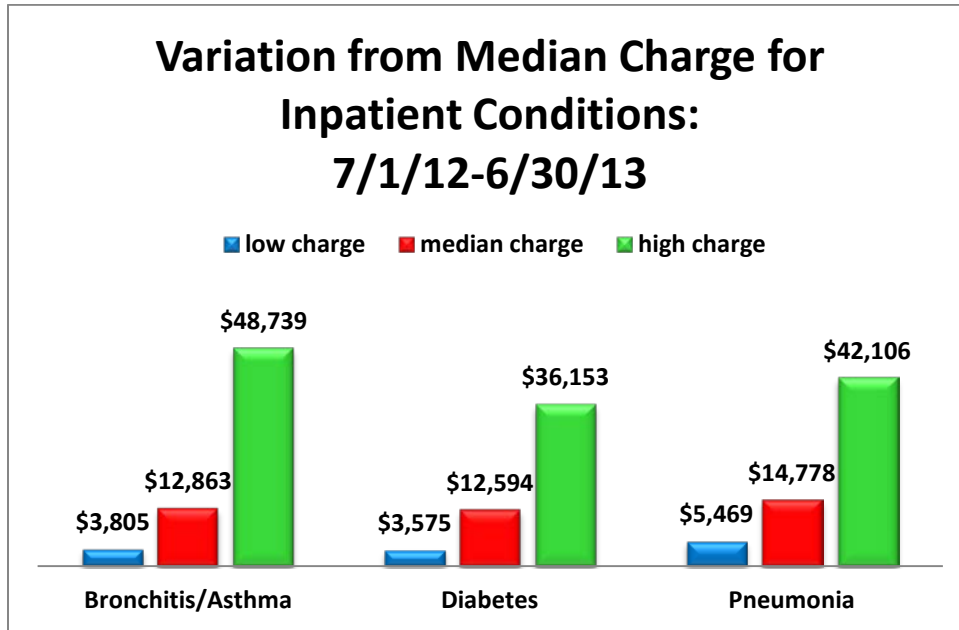
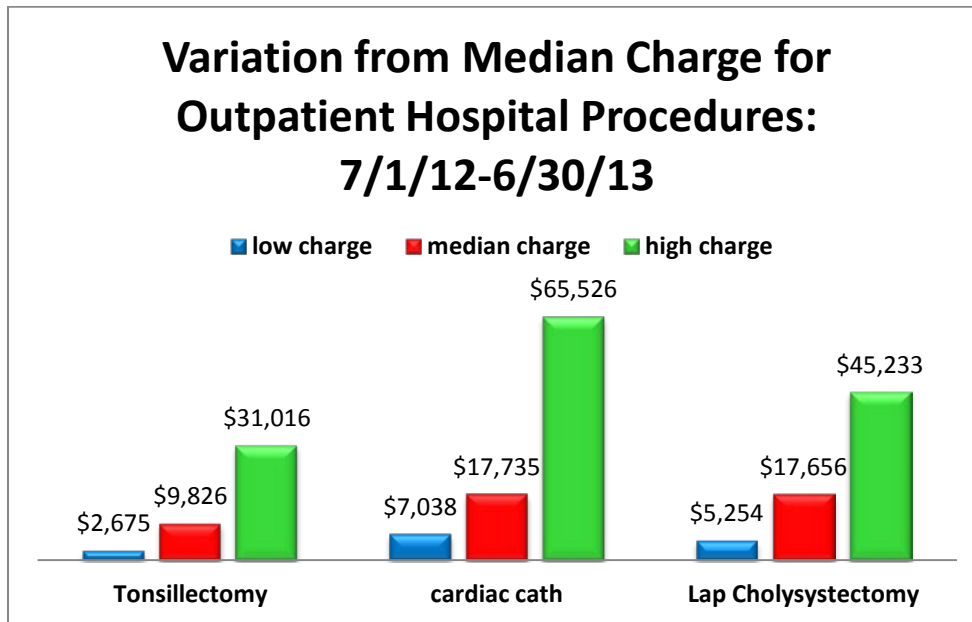


Fig. 14 Variation from median charge for three outpatient hospital procedures, 7/1/12-6/30/13



References

1. Health and Human Services, Report to Congress: National Strategy for Quality Improvement in Health Care; March 2011.
2. Health and Human Services. National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination; April 2013: http://www.health.gov/hcq/prevent_hai.asp#hai
3. Centers for Disease Control and Prevention. National Strategy for Combating Antibiotic-Resistant Bacteria. Atlanta, Georgia; September 2014.
<http://www.cdc.gov/drugresistance/national-strategy/>
4. Hecker MT, Aron DC, Patel NP, Lehmann MK, Donskey CJ. Unnecessary use of antimicrobials in hospitalized patients: current patterns of misuse with an emphasis on the antianaerobic spectrum of activity. Arch Intern Med 2003;163:972–8.
5. Aiken, L., Sloane, D., Cimiotti, J., Clarke, S., Flynn, L., Spetz, J., Seago, J., Smith, H. Implications of California nurse staffing mandate for other states. Health Services Research 2010; 45: 904-921.
6. VHA Research Series. The Business Case for Workforce Stability. 2002; 1-16.
7. American Nurses Credentialing Center. Characteristics of Magnet Organizations. Feb. 2014:
<http://www.nursecredentialing.org/CharacteristicsMagnetOrganizations.aspx>
8. Jencks, S. Williams, M. and Coleman, E. Rehospitalizations among Patients in the Medicare Fee-for-Service Program. New Engl J Med. 2009; 360: 1418-1428.
9. *Ibid* [1]
10. U.S. Department of Health and Human Services. The Surgeon General’s Call to Action to Support Breastfeeding. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; 2011.
<http://www.surgeongeneral.gov/library/calls/breastfeeding/calltoactiontosupportbreastfeeding.pdf>
11. U.S. Department of Health and Human Services. Your Guide to Breast Feeding. Washington, DC: U.S. Department of Health and Human Services, Office of Women’s Health; Jan 2011.
<http://www.womenshealth.gov/publications/our-publications/breastfeeding-guide/breastfeedingguide-general-english.pdf>
12. CDC National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity, Breastfeeding Report Card United States, 2013
<http://www.cdc.gov/breastfeeding/pdf/2013breastfeedingreportcard.pdf>

13. Healthy people 20/20 baby friendly hospital goal <https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives>
14. *Ibid* [13]
15. Clark SL, MD, Donna RF, RN, MN, Janet AM, RN, et al. Reduction in elective delivery at < 39 weeks of gestation: comparative effectiveness of 3 approaches to change and the impact on neonatal intensive care admission and still birth. *American Journal of Obstetrics and Gynecology*. November 2010
16. Jensen JR, White W, Coddington CC. Maternal and Neonatal Complications of Elective Early Term Deliveries. *Mayo Clinic Proc*; 2013 88(11):1312-1317.
17. *Ibid* [1]
18. Billings J, Parikh N, and Mijanovich T. Emergency Department Use in New York City: A Substitute for Primary Care? Commonwealth Fund; Issue Brief Nov 2000. (see also: <http://wagner.nyu.edu/faculty/billings/nyued-download>)