

Introduction:

Arrowhead Regional Medical Center (ARMC) is a 456-bed, state-of-the-art, acute care facility, embracing advanced technology in all patient care and support areas. ARMC, a safety-net hospital, offers the latest in patient care by providing a full range of inpatient and outpatient services, three off campus community health centers, behavioral health inpatient services and numerous specialty services. ARMC is fully accredited by the Centers for Medicare and Medicaid Services (CMS) and the Healthcare Facilities Accreditation Program (HFAP). Accredited as an American College of Surgeons Level II Trauma Center, with the second busiest emergency department in the State of California, ARMC provides emergency care for approximately 130,460 County residents, 113,769 admissions and approximately 254,000 outpatient visits annually.

Of the individuals served by ARMC approximately 50.9% are Medi-Cal beneficiaries, 13.6% are Medicare beneficiaries, 25.9% are uninsured and 9.6% are third party insurance. Additionally, 48% of the patients are Latino, 34% White, 8% Black, 6% Asian/Pacific Islander, 1% Native American and 3% Other. As of 2010, the population for the County was estimated at 2,073,149. This is a 21.2% increase in population from the previous decade. According to Census estimates, the San Bernardino County -- Riverside Metropolitan area was the fastest growing area in the state and the 12th largest area in the nation.

There is a growing need for health care services among the low-income, under-insured and uninsured individuals; due in large part to the State's poor economic condition. In May 2010, the unemployment rate for the County reached 13.8%, compared to 7.2% in May 2008, an increase of 48%; during this same period the number of County residents receiving County Medical Service Plan benefits increased by 12%. From January 2007 to June of 2009, the cumulative Medi-Cal caseload for the County has increased from 84,143 to 106,678; a growth rate of 27%. Between May 2007 and May 2009, the number of Californians enrolled in Medi-Cal rose by 7.2 percent (470,965). However, the comparable figures in this County show a growth of 12%; from 86,158 cumulative cases to 96,776 for that same time period (a total of 10,618). These figures represent the effects of population increase and the disproportionate impacts of the recession on the County of San Bernardino.

According to the California Department of Finance's population estimates, the County of San Bernardino has a population of 2,073,149. It is the fifth largest county, in terms of population size, in the State of California, accounting for 5.4% of California's total population, and the twelfth largest county in the nation. Based on County Health Indicator Rankings, the County ranked 45th among 56 ranked California Counties in terms of poor health outcomes among its residents, compared to neighboring counties [i.e. Riverside (27), Los Angeles (26), and Orange (7)]. In terms of clinical care the County ranks 54th out of 56 ranked counties.

The clinical staff serves as the primary interface with patients, families, and others throughout the hospital experience. Education is a primary focus. ARMC offers numerous multi-year Residency Programs for the training of physicians in Family Medicine, Emergency Medicine, Surgery, Neurosurgery, Women's Health, Internal Medicine, Geriatric Medicine and Psychiatry. In addition we have both Traditional and Transitional Year single year residency programs. ARMC has 352 physicians and trains 158 medical residents per year.

Inpatient services provide curative, preventative, restorative and supportive care for general and specialty units within the General Acute Care Hospital, and Behavioral Health Hospital. Care is coordinated among multiple care providers responsible for patient care twenty-four hours a day. Outpatient care is an

integral part of the multifaceted health care delivery system offering a wide range of emergency, primary, preventive, chronic, follow-up and specialty care services in an ambulatory care setting.

Executive Summary

A recent study performed by the Office of Statewide Health Planning and Development¹ showed that higher-than-average numbers of San Bernardino County residents were hospitalized for manageable conditions, such as diabetes and congestive heart failure, as compared to other counties. Preventable hospitalizations occur when individuals are admitted for treatment into a hospital for a medical condition which could have been avoided had they received proper outpatient care earlier. These are missed opportunities outside of the hospital for providing treatment to improve or stabilize a medical condition to prevent hospitalization; and as such are not reliable indicators of hospital performance. Poverty, poor health habits, lack of health insurance and restricted access to care are some of the reasons health care providers gave for the County's poor results.

Dr. G. Richard Olds, founding dean of UC Riverside's medical school, said that statewide, the Inland region ranks near the bottom in almost all measurable medical categories and has high mortality rates for conditions such as heart disease. At the same time, it has the highest shortage of doctors both statewide and across the country -- about 36 primary care doctors for every 100,000 people, he said. The U.S. Department of Health and Human Services' Council on Graduate Medical Education recommends 60 to 80 primary care physicians per 100,000 people. Compounding this, the California HealthCare Foundation reports that California communities with a high concentration of low income and minority residents (representative of the County of San Bernardino's population) are especially likely to have physician shortages.

ARMC's primary care system is not conducive to effective patient care; in essence it is broken. Simple modifications to our current primary care delivery system is not enough; we will need to revolutionize the way care is provided, the way primary care teams think and act and the way patients participate in their own care. The new system will require new ideas about how primary care is delivered, how relationships are built and how patients, in coordination with their care providers, take more ownership for their care and outcomes. Evidence-based models will be used to ignite processes that are robust enough to form the basis of a new system, one that performs at exceptional levels and provides desired patient outcomes. No single initiative or set of unaligned projects will be sufficient to produce system-level results.

Through DSRIP, ARMC will gear up for the full effects of Health Reform; increasing capacity and the number of the primary care clinics; moving to an evidence-based patient centered medical home model to provide timely, proactive and coordinated care; initiating patient visit redesign to increase efficiency and productivity so more patients can be seen; utilizing disease registry systems to allow for better tracking and management of patients with chronic conditions; and implementing Chronic Care Models for two chronic diseases which are prevalent within our patient population. The DSRIP period allows for the

¹ http://www.oshpd.ca.gov/hid/products/preventable_hospitalizations/pdfs/PH_REPORT_WEB.pdf

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infrastructure and foundation necessary to redesign ARMC's primary care services; a system overhaul aimed at reducing premature morbidity and mortality and preventable procedures (i.e. below knee amputations for diabetic patients) and providing patients with a positive health experience.

ARMC's mission and vision is inline with the goals of the U.S. Department of Health and Human Service's Healthy People 2020, to:

- Attain high quality, longer lives free of preventable disease, disability, injury and premature death;
- Achieve health equity, eliminate disparities and improve the health of all groups; and
- Promote quality of life, health development and healthy behaviors across all stages of life.

Over the next five years (DSRIP period), ARMC will improve upon these goals through enhanced infrastructure, innovation and redesign, population-focused improvements and urgent improvements in quality and safety.

Category 1 – Infrastructure Development

Expand Primary Care Capacity

- **Goal:** ARMC, located in the city of Colton - approximately 60 miles east of Los Angeles - serves as the only county hospital for the residents of San Bernardino County, home to approximately 2,000,000 constituents, of which 36.8% are between 0-199% of the Federal Poverty Level¹. San Bernardino County is the largest geographic county in the United States, encompassing a 20,000 square-mile area, with a mix of highly urbanized population centers in the desert, mountain and valley environments, as well as rural and sparsely populated areas. The vast size of the county, in conjunction with the number of constituents, helps drive the need for an increase in of primary care capacity and workforce in order to meet the needs of health reform in 2014.

Primary care capacity, resources, infrastructure, and technology are severely limited. Currently in our emergency department we see patients with untreated medical conditions which have progressed to the point of requiring admission as well as those seeking medical care for non-emergent needs. Quality primary care not only addresses the patient's acute medical problem but manages chronic conditions, coordinates care if the patient requires specialty or inpatient care, and provides preventive care, such as immunizations, nutrition education and early screening for illnesses that can be treated more effectively when detected early. Our goal is to improve access to primary care allowing the patient to receive the right care in the right setting.

Primary care remains vital to decreasing disabilities secondary to complications of untreated chronic diseases, decreasing unnecessary hospital readmissions and improving our communities' health outcomes. To expand primary care ARMC must increase efficiencies to maximize the capacity ARMC already has, as well as add capacity so that we can treat more patients. In order to do this, we propose to:

- Expand and add to ARMC's primary care clinics, thereby increasing the number of patients for whom we can provide care. Westside Family Health Center, one of the three existing ARMC Family Health Centers (FHC)², is located in a relatively small, inefficient building with severely limited access to public transportation. Through the DSRIP project, ARMC will be able to relocate and expand the clinic to a more efficient and functional space with additional patient rooms and providers. With the appropriate number of new providers and support staff, ARMC estimates it will care for an additional 2,000 patients per provider. Additionally, ARMC has plans to open a primary care clinic in the Medical Office Building located on the hospital grounds. It is estimated that this new clinic will have the capacity to provide care for 4,000 additional patients.

Given the vast area encompassed by the borders of San Bernardino County, and that our target patient population is dispersed unevenly throughout the geographical region, it is not possible for ARMC to build clinics in each and every area of need. As such, in addition to ARMC's three FHCs, the hospital contracts with 11 geographically-appropriate independent clinics to provide primary care services to our medically indigent adult (MIA)

¹ 2007 California Health Interview Survey

² Arrowhead Regional Medical Center's Family Health Centers (FHC) offer comprehensive primary care medical services to individuals and families of all age groups. The FHCs are staffed with experienced attending physicians and resident doctors from the Medical Center's nationally recognized Family Medicine Practice Residency Training Program. Each patient is assigned to a primary care provider for personalized attention to their health care needs. Available services: Adult care (acute and chronic), family planning, obstetrics, geriatrics, health maintenance, preventative care, patient and family education, and pediatrics including well-child physicals and immunizations. All ARMC FHCs are owned by the County of San Bernardino.

population³. ARMC will conduct a county-wide gap analysis to identify the areas where the County-owned or contracted clinics do not meet the needs of the patient population. With this data, ARMC will contract with one additional geographically-appropriate MIA clinic during Year One to address the needs of the growing patient population, as well as develop plans to contract with additional providers/clinics based on the results of the gap analyses in future DSRIP years.

- Over the duration of the Waiver project, ARMC will recruit and hire an additional number of competent and qualified attending physicians to provide primary care services. Concurrently, ARMC will look to invest in a number of nurse practitioners. Our goal is to achieve the right blend of physicians and nurse practitioners to expand our ability to reach our diverse patient base while at the same time allowing each provider type to practice at the top of their respective license. Particular care will be paid to hiring practitioners who embrace the concepts of medical homes and understand the need for a robust and comprehensive approach to chronic disease management. These new providers will then be able to join with existing physicians and nurse practitioners to serve as role models to the many residents who are trained in our primary care residency programs.

In addition to increasing our primary care capacity, workforce and medical homes, ARMC will undertake the necessary changes to approach patient care from a more global standpoint, rather than focusing almost exclusively on individual patient encounters. Expansion of capacity is one of the first steps necessary to better reach our increasing population base. When coupled with our Category 2 projects of expanding medical homes, expanding chronic care management models and primary care clinic redesign, the expanded capacity will be melded to a global care paradigm which will allow greater numbers of patients to benefit than could be achieved from simply increasing volume alone. Furthermore, as our residents undergo additional training and mentoring in such principles as the medical home, care panel management and the need to tie these processes to measurable improvement, they will carry these skills into the community as they graduate and commence their own practices.

ARMC proposes to increase primary care capacity while transitioning to a medical home model which is organized to serve eligible patients with care that is coordinated, accessible, and managed. Medical homes will be organized to equip patients with self-management tools and proactive support resulting in a healthier patient population and an improved patient experience.

- **Expected Results:** Over the course of the five year DSRIP project, ARMC will increase primary care volume by at least 15% over baseline as a result of expanding primary care capacity through the addition of primary care clinics, expanding primary care clinic space, expanding primary care clinic staffing and expanding primary care clinic staffing knowledge.
- **Relation to Category 3 Population-Focused Improvement:** Expanded primary care capacity also feeds into the expansion of the primary care workforce, medical homes and more organized care delivery, improved prevention and management of chronic conditions, integrated physical-behavioral health care, and better utilization of health care resources. With expanded primary care capacity, more patients can have access to primary and preventive care, which increases opportunities to prevent disease and provide early treatment. Patients upon discharge can be scheduled for follow-up appointments and care at a primary care clinic, thereby reducing the risk and consequences of worsening health conditions.

³ To qualify for the County's Medically Indigent Adult (MIA) program, patients must be between the ages of 21 and 64, not have dependent children under the age of 21 in their home, reside in the County of San Bernardino, and meet the income requirements of the program (below Federal Poverty Level). Most MIA patients are a childless adult who suffer from a chronic disease such as diabetes, hypertension, congestive heart failure, or hepatitis C, many with multiple conditions.

Increase Primary Care Capacity					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
<p>1. Milestone: Develop a plan to establish additional primary care clinics for the County’s current MIA population as measured by (1) identification of current patient volume vs. primary care clinics, (2) development of a plan to add contract primary clinics and (3) determine primary care clinic volume (baseline). (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of completion of these items for the current MIA population, including timeframes and submission of the proposed new clinic locations. <p>2. Milestone: Develop a plan to establish additional/expand primary care clinics for the County’s targeted FHC population, as measured by (1) identification of</p>	<p>4. Milestone: Increase ARMC FHC primary care clinic volume by 2% over baseline. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of patient visits over baseline <p>5. Milestone: Hire 2 additional primary care providers and staff. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of completion of items described in this milestone (i.e. provider contracts) <p>6. Milestone: Expand existing primary care locations by at least one (MOB). (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of primary care clinic expansion, including new primary care schedule 	<p>7. Milestone: Increase ARMC FHC primary care clinic volume by 5% over baseline. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of patient visits over baseline <p>8. Milestone: Hire 3 additional primary care providers and staff. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of completion of items describe in this milestone (i.e. provider contracts) <p>9. Milestone: Expand existing primary care clinics by at least one (Westside). (Process)</p> <ul style="list-style-type: none"> • Metrics: Documentation of primary care clinic expansion, including new primary care schedule. <p>10. Milestone: Expand primary care clinic hours in one clinic.</p>	<p>11. Milestone: Increase ARMC FHC primary care clinic volume to 10% over baseline. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of patient visits over baseline 	<p>12. Milestone: Increase ARMC FHC primary care clinic volume to 15% over baseline. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of patient visits over baseline 	<ul style="list-style-type: none"> • Increase Training of Primary Care Workforce (Cat. 1) • Expand Medical Homes (Cat. 2) • Redesign Primary Care (Cat. 2) • Category 3 (TBD)

Increase Primary Care Capacity					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
<p>current patient volume vs. primary care clinics, (2) development of plan to add/expand primary clinics and (3) determine primary care clinic volume (baseline). (Process)</p> <ul style="list-style-type: none"> Metric: Documentation of completion of these items for the targeted FHC population, including timeframes and submission of the proposed new clinic locations. <p>3. Milestone: Increase (contract) primary care locations by one (MIA clinic). (Process)</p> <ul style="list-style-type: none"> Metric: Documentation of primary care clinic expansion, including new primary care schedule. 		<p>(Process)</p> <ul style="list-style-type: none"> Metrics: Increased number of hours at primary care clinic over baseline. 			

Increase Training of Primary Care Workforce

- **Goal:** ARMC will apply to the appropriate residency program accrediting bodies (ACGME and/or AOA) to increase the size of the primary care residency programs. The goal will be to increase the size of the primary care residency programs by at least 6 residents to account for the influx of patient population under health care reform. According to the California HealthCare Foundation, the Inland Empire has fewer primary care providers and specialists than are recommended by nationally recognized benchmarks⁴. In addition, nearly 30 percent of California’s physicians are over age 60, the largest proportion of any state, which raises concerns about physician supply as older physicians continue to retire. As more patients are covered under the Affordable Care Act, it will be essential to increase the number of primary care workforce personnel in order to meet the demands and needs of these newly covered patients. Furthermore, in order to effectively operate in a medical home model, there is a need for residency and training programs to teach the expanded capabilities of primary care providers functioning under a medical home team-based care and manage population management model.

ARMC sponsors two accredited primary care residency programs: Family Medicine and Internal Medicine. Initially ARMC has plans to expand the Internal Medicine residency program. These programs operate on an academic year of July 1 to June 30. Residency program recruitment cycles mandate potential candidates be interviewed in November, December or January of the academic year prior to the July 1 start date. The number of new residents a program enrolls is determined by the number of positions placed in the national match. Therefore, after ARMC receives expansion approval, it will recruit for two additional internal medicine residents during the November 2011 to January 2012 recruitment season. These additional primary care residents will begin training July 2012.

To successfully grow the primary care residency programs, ARMC will focus on positive primary care exposure for residents and medical students including: 1) developing a mentoring program with primary care faculty and new residents/medical students; 2) training new residents and medical students in the chronic Care Model and disease registry use; 3) having primary care residents participate in medical homes by managing panels; and 4) including primary care residents in primary care quality improvement projects.

To accommodate the expanded residency programs, ARMC must hire an additional precepting primary care faculty to who will teach and provide oversight and guidance to the residents in ARMC’s residency programs. ARMC’s internal studies have demonstrated that over the past fifteen years at least fifty percent of ARMC’s residents who complete a primary care residency remain within a fifty mile radius of the hospital. This historical data bodes well for the ongoing investment in primary care residency training as our graduates tend to remain in San Bernardino County and environs further providing care to our underserved population.

- **Expected Results:** ARMC will expand its primary care residency program by an additional 6 residents over the baseline to train more primary care providers to serve and help address the substantial primary care workforce shortage.

⁴ <http://www.chcf.org/~media/Files/PDF/C/PDF%20CaliforniaPhysicianFactsFigures2010.pdf>

- **Relation to Category 3 Population-Focused Improvement:** These additional primary care residents will be trained in the important aspects of the medical home and chronic care models, allowing ARMC to improve health outcomes in preventive care and chronic disease. An expanded primary care workforce will increase access and capacity to ARMC's care services, thereby improving the patient experience and care coordination.

Increase Training of Primary Care Workforce					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
<p>13. Milestone: Expand primary care residency training programs by: applying to the accrediting body to increase one of the primary care residency training programs at ARMC, specifically increasing the number of Internal Medicine resident slots. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of application to expand training programs. 	<p>14. Milestone: Increase primary care training by recruiting for at least 2 additional primary care residents over baseline. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Documented enrollment by class by year by primary care training program with an increased number of primary care positions placed in match over baseline year (recruiting). <p>15. Milestone: Expand primary care training by hiring one additional precepting primary care faculty member. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of number of additional training faculty/staff members. <p>16. Milestone: Expand positive primary care</p>	<p>17. Milestone: Increase primary care training by 2 residents. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Increase the number of primary care residents as measured by number change over baseline. 	<p>18. Milestone: Increase primary care training by 2 additional residents (4 total). (Improvement)</p> <ul style="list-style-type: none"> • Metric: Increase the number of primary care residents as measured by number change over baseline. 	<p>19. Milestone: Increase primary care training by 2 additional residents (6 total). (Improvement)</p> <ul style="list-style-type: none"> • Metric: Increase the number of primary care residents as measured by number change over baseline. 	<ul style="list-style-type: none"> • Expand Medical Homes (Cat. 2) • Redesign Primary Care (Cat. 2) • Category 3 (TBD)

Increase Training of Primary Care Workforce					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
	exposure for residents (train in medical home model, chronic care model, disease registry, and panel management). (Process) <ul style="list-style-type: none"> • Metric: Documentation of program. 				

Implement and Utilize Disease Management Registry Functionality

- **Goal:** ARMC reports show that 75% of patients have at least one chronic condition, with 40% having multiple chronic conditions. Specifically, for the period July 1, 2009 through June 30, 2010, 10% of ARMC's patient population was reported to have diabetes. A report generated by the Office of Statewide Health Planning and Development examined hospital discharge records between 1999 and 2008 for 15 conditions (it did not gauge hospital quality). It identified conditions for which patients may have avoided hospitalization if they had received better preventive care. The report demonstrated that the Inland Empire area's hospitalization rates for long term complications of diabetes increased between 1999 and 2008. Discharge rates per 100,000 for these diagnoses were 108.1 in 1999 growing to 124.3 in 2008.⁵

According to the Centers for Disease Control and Prevention (CDC), chronic conditions are the leading causes of death and disability in the United States and result in exorbitant hospital costs each year. In 2000, the medical cost of chronic disease amounted to 75% of health care spending⁶. Access to high-quality prevention measures (including screening, tracking and appropriate follow-up) are essential to save lives, reduce disability and lower costs for medical care. The CDC estimates that as many as 1 in 3 U.S. adults could have diabetes by 2050 if current trends continue.

Comprehensive chronic care management encompasses the oversight, tracking and educational activities conducted by a medical team to help patients with chronic diseases learn to understand and live successfully with their condition. To achieve this requires appropriate use of chronic care registries coupled with motivating and empowering patients to continue necessary therapies and interventions to help them achieve a productive and reasonable quality of life.

Chronic diseases, such as diabetes, are placing a growing burden on the health care system in the United States, causing provider organizations to look for strategies to effectively manage individuals and populations with one or more chronic diseases. One such strategy is implementing computerized disease registries, which capture and track key patient information to assist care team members in proactively managing patients, thereby improving rates of preventative care. Specifically, the disease registries:

- Produce patient reports used at the point of care to communicate condition-specific information and prompt physicians and their teams to deliver recommended evidence based care;
- Produce exception reports to identify patients overdue for care or those who are not meeting care management goals; and
- Produce progress reports to provide information about how well individual providers and overall organizations are doing in delivering recommended care to a specific patient population.⁷

A few years ago, ARMC attempted to implement a disease registry model at two of its three FHCs which tracked one chronic condition (diabetes). The system was underutilized including just 197 patients. Only a few teams were trained on how to use the tracking system and exposed to the benefits it could provide. The system's dependence on manual data entry and lack of adequate staff to keep the registry current led to frustration among

⁵ http://www.oshpd.ca.gov/hid/products/preventable_hospitalizations/pdfs/San%20Bernardino/03.pdf

⁶ O'Dell, G. "2002 AHA Environmental Assessment," Hospitals and Health Networks

⁷ <http://www.chcf.org/~media/Files/PDF/C/PDF%20ChronicDiseaseRegistryReview.pdf>

physicians and clinic staff who ultimately abandoned the project. After new review, the ARMC Family Medicine Department is interested in reinitiating disease registries. Recently there had been success in automating some of the data population in the registry. A proper chronic care management system with automated data extrapolation and integration with an EMR combined with point of care data access would facilitate improved patient outcomes.

ARMC proposes to re-implement and upgrade its current chronic disease management registry, focusing on patients with diabetes. The registry will have enhanced capabilities to improve the reporting mechanism and to capture the necessary data to actively manage patients with targeted chronic conditions. In this way, patients with chronic conditions can receive regular and routine care in the primary care setting. All FHC staff, physicians and residents will be trained on the use and importance of the disease registry.

During Year 3, ARMC will review and select a registry platform in which to collect data on patients with congestive heart failure (CHF). In Years 4 and 5 of the DSRIP project, ARMC will implement the selected registry in three of the FHCs with a plan to actively manage patients with CHF. Although our CHF population is only one fifth the size of the diabetic population (period July 1, 2009 through June 30, 2010, 2% of ARMC's patient population was reported to have CHF), these patients have an increased potential to require greater use of healthcare resources. The IHI reports that almost \$30 billion is spent annually on CHF care⁸. Improved management of CHF, through the use of a registry, can lead to decreased hospitalizations and Emergency Department visits.

- **Expected Results:** ARMC will implement and utilize a disease management registry in all Family Health Centers that supports patient population health, panel management and coordination of care. The registries will focus specifically on diabetic and CHF patients, with 2,000 diabetic patients and 120 CHF patients' data being entered and monitored into the disease registries by DY 10.
- **Relation to Category 3 Population-Focused Improvement:** Improved outpatient management of these conditions will lead to better health outcomes in both preventive services and decreased disabilities of patients with these chronic conditions.

⁸ <http://www.ihl.org/IHI/Topics/ChronicConditions/AllConditions/ImprovementStories/GoodHeartFailureCareFollowsPatientsHome.htm>

Implement and Utilize Disease Management Registry Functionality					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
<p>20. Milestone: Develop a plan to re-implement the current disease registry at ARMC's FHCs, including (1) identifying necessary staffing to support data entry, (2) develop training for enhanced registry, and (3) a plan to re-invigorate disease registry at FHCs. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of completion of these items, including timeframes and submission of the enhanced disease registry plan. 	<p>21. Milestone: Re-implement a functional disease registry (diabetes) at one of ARMC's FHCs. (Process)</p> <ul style="list-style-type: none"> • Metric: Disease management registry functionality is available at one of ARMC's 3 FHCs. <p>22. Milestone: Conduct training to at least 25% of ARMC FHC staff on populating and using the registry function. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of training programs and list of staff members trained. <p>23. Milestone: Demonstrate registry automated reporting ability to track and report on patient demographics, diagnoses, patients in need of services or not at goal, and preventive care status. (Process)</p>	<p>25. Milestone: Conduct training to at least 75% of ARMC FHC staff on populating and using the registry function. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of training programs and list of staff members trained. <p>26. Milestone: Spread disease registry (diabetes) functionality at two additional ARMC's FHCs. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Implement disease management registry functionality for diabetes in all three of ARMC's FHCs providing continuity of care for the defined population. <p>27. Milestone: Enter at least 800 diabetic patients in diabetes registry. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of 	<p>29. Milestone: Conduct training to at 100% of ARMC FHC staff on populating and using the registry function. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of training programs and list of staff members trained. <p>30. Milestone: Expand disease registry functionality to include CHF in one of ARMC's FHCs. (Process)</p> <ul style="list-style-type: none"> • Expanded number of targeted diseases. <p>31. Milestone: Enter at least 1,500 diabetic patients into the registry. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of patients in diabetes registry. <p>32. Milestone: Enter at least 60 CHF patients into the registry. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of 	<p>33. Milestone: Spread disease registry (CHF) functionality in at least 2 additional ARMC FHCs. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Implement disease management registry functionality for CHF in ARMC's FHCs providing continuity of care for the defined population. <p>34. Milestone: Enter at least 2,000 diabetic patients into the registry. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of patients in diabetes registry. <p>35. Milestone: Enter at least 120 CHF patients into the registry. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of patients in CHF registry. 	<ul style="list-style-type: none"> • Expand Medical Homes (Cat. 2) • Expand Chronic Care Management Models (Cat. 2) • Category 3 (TBD)

Implement and Utilize Disease Management Registry Functionality					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
	<ul style="list-style-type: none"> Metric: Registry automated report on file. <p>24. Milestone: Enter at least 400 diabetic patients into the registry. (Improvement)</p> <ul style="list-style-type: none"> Metric: Number of patients in registry. 	<p>patients in diabetes registry.</p> <p>28. Milestone: Review future registry platforms and select registry platform for Congestive Heart Failure (CHF). (Process)</p> <ul style="list-style-type: none"> Metric: Documentation of review of registry platforms and selection of future registry platform. 	<p>patients in CHF registry.</p>		

Expand Specialty Care Capacity

- **Goal:** Wait times in 21 specialty clinics are currently 30 days or more. Of those, wait times for 11 specialty clinics are over four months, an obvious detriment to effective patient care. Access to specialty care is limited and difficult, and referral methods are antiquated and inefficient. Specific causes include referrals to specialists when specialty care may not be required, a lack of a streamlined system to connect referring primary care providers to specialists, pre-work not consistently being done before specialty care visits, specialty providers within a given specialty not having uniform requirements for pre-specialty care evaluation, failure of specialists to access existing pre-work already in the data base and re-requesting existing studies and a lack of coordinated systems in the referral department; all of which results in an overall inefficient process that needs a complete overhaul.

ARMC's current system for patient referrals has three initiation points: 1) A patient referred by their primary care physician; 2) A patient seen in the Emergency Department by a provider who orders a consult; or 3) A patient seen by a subspecialist in one field referring the patient to a subspecialist in another field. The referral is faxed to ARMC's Referral Center where staff reviews the referral for completeness. If a referral is determined to be incomplete, the Referral Center then faxes the referral back to the primary care physician requesting additional information. Unfortunately, often the requested data already exists in either the EMR or a separate chart, but the specialty clinic staff does not always access these results. This can lead to delays in appointment time and unnecessary duplication of diagnostic tests. Once the referral is deemed complete and the primary care physician has submitted all the necessary information, the specialty physician then reviews the referral to determine if the referral is appropriate. Often times the specialty provider will request additional information from the primary care provider which requires additional faxing. The current system doesn't allow the primary care and specialty physicians to communicate effectively or in a timely manner. In addition, there is no established means to routinely ensure the primary physician receives the specialty clinic's notes and recommendations. Also, when patients are unable to keep their appointment with a specialist, the primary physician often will not be aware until the patient is later queried as to the outcome of the specialty consult. This leads to further delay of access to specialty care.

ARMC needs a better understanding of where the patient referrals are coming from, what the specialty referrals are for and the magnitude of demand, particularly in impacted specialty clinics. Specialty clinics report the number of patients being referred to specialty care without an actual need for the specialty care is growing. These unnecessary referrals are bogging down the system, creating longer appointment wait times for those in real need of specialty care.

ARMC has plans to increase specialty care access and capacity to better accommodate the high demand for specialty care services so that patients are seen in a timely manner. To address these issues, we propose to:

- Conduct a specialty care gap analysis (baseline) to identify impacted specialty clinics. ARMC is aware of the backlog within the specialty clinics but does not understand the full extent of the gap. The gap analysis will be a crucial launching point to addressing access and capacity to the specialty clinics. The gap analysis will create a baseline identifying wait times, backlog and no-shows in the specialty clinics. This baseline will be used to gauge improvement efforts, including, reducing impaction in identified clinics (increase number of specialists, clinic hours and/or procedure hours), enhancing specialty referral system processes and adding personnel to effectively oversee and coordinate the medical specialty referral management department.

- Expand upon ARMC’s current referral management system and processes. An all-encompassing referral management department will ensure that referrals are processed, reviewed and the patient’s clinical issue is addressed in a timely manner.
 - Train referral staff on new process. Training staff and providers working in the primary care and specialty clinics on the referral process creates a consistency and uniformity to manage all the referrals into the specialty clinics.
 - Reduce inappropriate referrals to the specialty clinics by developing referral guidelines, which define the clinical conditions to be referred. ARMC will work with specialists to draft a set of guidelines that outlines the clinical conditions best managed on the primary care side and the clinical conditions best referred. Guidelines will be based on numerous factors, including scope of service, patterns of referral and availability of various referral specialists, clinical condition, diagnosis or symptoms and will include current information on how each condition should be managed, including the appropriate use of laboratory and radiological tests, the elements and sequence of the work-up, and the expectations of treatment prior to referral.
- **Expected Results:** ARMC expects to increase access to specialty care services by training primary care providers, specialists and staff on processes, guidelines and technology for referrals and consultations into selected medical specialties. The current referral system will be overhauled to accommodate for a more rapid turn around to specialty care and increased access for patients, with a DY 10 goal to reduce the number of specialty clinics with waiting times for next routine appointment by 15%.
 - **Relation to Category 3 Population-Focused Improvement:** Facilitating timely access to specialty care for those patients who truly require such is an essential component for addressing specific medical problems before they progress to advanced stages which are more recalcitrant to care. Efficient exchange of information between primary care and specialist providers can help identify those patients whose conditions can be managed in a primary care environment with simple guidance from the specialist; and those patients who require more comprehensive specialty evaluation and treatment. Streamlining and expanding specialty care access is a critical component towards ensuring both the global and individual health of our patient population.

Expand Specialty Care Capacity					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
<p>36. Milestone: Collect baseline for wait times, backlog and no-show rates in the specialty clinics. (Process)</p> <ul style="list-style-type: none"> • Metric: Established baseline for performance indicators. <p>37. Milestone: Expand the ambulatory care medical specialties referral management department by adding 1 FTE to the Referral Management Department who will revamp and expand the current system. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of personnel in place to manage referrals into medical specialties. 	<p>38. Milestone: Collect baseline for number of days to process referrals and wait time from receipt of referral to actual referral appointment. (Process)</p> <ul style="list-style-type: none"> • Metric: Established baseline for performance indicators. <p>39. Milestone: Expand the ambulatory care medical specialties referral management department by implementing a revamped specialty referral process. (Process)</p> <ul style="list-style-type: none"> • Metric: System in place to manage referrals into medical specialties. <p>40. Milestone: Establish specialty care guidelines for the high/most impacted medical specialties. (Process)</p> <ul style="list-style-type: none"> • Metric: Document guidelines and 	<p>43. Milestone: Train 90% number of primary care providers, specialists and staff on processes, guidelines and technology for referrals and consultations into selected medical specialties (remaining primary and specialty care clinics). (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of training of staff and providers on referral guidelines, process and technology. <p>44. Milestone: Increase the number of available specialty appointments by 10%, for the most impacted medical specialties clinics. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Documentation of increase of available specialty appointments over baseline. <p>45. Milestone: Provide</p>	<p>46. Milestone: Reduce the number of specialty clinics with waiting times for next routine appointment by 10%. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Documentation of next routine appointment improvement over baseline. 	<p>47. Milestone: Reduce the number of specialty clinics with waiting times for next routine appointment by 15%. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Documentation of next routine appointment improvement over baseline. 	<ul style="list-style-type: none"> • Expand Medical Homes (Cat. 2) • Category 3 (TBD)

Expand Specialty Care Capacity					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
	<p>distribution of guidelines.</p> <p>41. Milestone: Train 15% number of primary care providers, specialists and staff on processes, guidelines and technology for referrals and consultations into selected medical specialties (three ARMC FHCs and two specialty clinics). (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of training of staff and providers on referral guidelines, process and technology. <p>42. Milestone: Provide reports on number of days to process referrals, and wait time from receipt of referral to actual referral appointment. (Process)</p> <ul style="list-style-type: none"> • Metric: Reports on file. 	<p>reports on number of days to process referrals, and wait time from receipt of referral to actual referral appointment. (Process)</p> <ul style="list-style-type: none"> • Metric: Reports on file. 			

Category 2 – Innovation and Redesign

Expand Medical Homes

- **Goal:** ARMC owns three off-site Family Health Centers (FHC) and contracts with 11 privately owned clinics to provide primary care services to our patient population. While two of ARMC’s primary care clinics have already embraced facets of the medical home such as open access scheduling, the “concept” of a provider team striving to provide whole person care, (limited) extended hours and some attempt at care coordination across the continuum, a shift in clinic structure from episodic provider centered care to global patient centered management has yet to be achieved. A switch to physician-led care teams where all clinic personnel work at the top of their license is essential to the medical home model.

We want to ensure sure the medical home model is appropriately embedded within our care delivery model so that all patients receive the right care in the right place at the right time. This is a strategic priority for ARMC because by providing more patients with coordinated care services grounded in primary care medical homes, patients can stay healthier and manage their chronic conditions, thereby reducing avoidable emergency room visits, admissions, and readmissions. Patients will receive this care in a proactive, evidence-based and planned manner. ARMC’s medical homes will engage willing patients to take an increasingly active role in their own management; forging a partnership with their provider teams to enhance compliance and adopt healthy lifestyles that will promote long-term improvement in their health which can be measured. To accomplish this, ARMC will develop a training module for the residents to address the aspects and rationale behind a medical home concept.

ARMC will develop a system where patients are assigned to a primary care team within a designated primary care clinic as their medical home. The designated care team will coordinate the patients’ health care needs. The system will include information technology to track the assignment of patients to their medical home site and the designated care teams that will be responsible for coordinating the patient’s care. ARMC proposes to fully implement the medical home model through the three existing primary care Family Health Centers and additional County-owned clinic(s) as a result of this initiative. As per the latest NCQA standards for its Patient-Centered Medical Home (PCMH) program, PCMH 2011⁹, ARMC’s medical homes will:

- Conduct a health assessment of the patient’s current and anticipated health care needs in order to tailor health care to the needs of the patients;
- Maintain the patient’s health records;
- Develop a proactive health care plan for the patient, in consultation with the patient and where appropriate, the patient’s family;
- Apply evidence-based medicine;
- Facilitate enhanced access to health care;
- Provide for timely preventive, primary and chronic care;
- Provide referrals to specialty and other health care services, and, where appropriate and needed, community services;
- Facilitate patient self-management support and goal-setting;

⁹ http://www.ncqa.org/Portals/0/PublicComment/PCMH2011_draft_standards_527.pdf.

- Engage in open and effective communication with patients and families, including providing timely access to qualified health care interpretation if needed and as appropriate;
- Provide health care in a culturally competent manner; and
- Use measures and technology to support quality and process improvements.

Panel management will be a key focus to the success of medical homes in the FHCs. Strong leadership and ongoing operational support are essential for making empanelment work, and for realizing the improved health outcomes associated with the continuous, comprehensive improved access and quality of care benefits associated with better managed supply and demand. Empanelment includes defining the link between the patient and the provider/care team, designating panel managers to guide and oversee panels, developing policies and procedures to ensure that patients can reliably see and build relationships with their providers and expanding/redefining the roles and responsibilities of primary care teams to ensure that all the tasks associated with managing a population of patients are covered. In addition, ARMC's enhanced disease registry will be utilized to complement the function of panel management. Panels will be able to access the registry data to determine which patients need proactive outreach and what preventive or chronic care needs should be addressed at the time of the visit¹⁰.

- **Expected Results:** At least 80% of new patients assigned to all of ARMC's FHC medical homes receive their first appointment in a timely manner. Care teams will actively manage their patient panel so that patients are reminded of services needed and receive coordinated care rooted in the primary care setting. Patients will know the professionals on their care teams, establish trusting, ongoing relationships and co-develop health care plans with the patients to reinforce continuity of care. The medical home model has been shown to improve the quality and cost-effectiveness of care for patients with chronic diseases; providing a regular source of primary care, which is associated with better health outcomes at lower cost and an improved patient experience¹¹.
- **Relation to Category 3 Population-Focused Improvement:** Using the medical home model will allow us to comprehensively manage our patients to promote compliance with evidence-based guidelines, improve the patient's experience and possibly decrease the cost of care by allowing all members of the team to operate at the top of their license. Specifically, the model is characterized by better access to needed services, improved quality of care, a greater focus on prevention and an early identification and management of health problems.

¹⁰ http://ghmedicalhome.org/safety-net/upload/Empanelment_final.pdf

¹¹ http://www.aafp.org/online/etc/medialib/aafp_org/documents/about/pcmhsum.Par.0001.File.tmp/PCMHsummary.pdf

<u>Expand Medical Homes</u>					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
<p>48. Milestone: Expand and redefine the roles and responsibilities of primary care team members. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of expanded primary care team member roles/responsibilities. 	<p>49. Milestone: Put in place policies and systems to enhance patient access to the medical home. (Process)</p> <ul style="list-style-type: none"> • Metric: Hospital policies on medical homes. <p>50. Milestone: Reorganize staff into primary care teams responsible for the coordination of care. (Process)</p> <ul style="list-style-type: none"> • Metric: Primary care team. <p>51. Milestone: Establish criteria for medical home assignment. (Process)</p> <ul style="list-style-type: none"> • Metric: Medical home assignment criteria. <p>52. Milestone: Develop training materials for medical homes. (Process)</p> <ul style="list-style-type: none"> • Metric: Training material documents. <p>53. Milestone:</p>	<p>57. Milestone: Train at least 75% ARMC FHC staff on the medical home model. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of personnel trained on the medical home model. <p>58. Milestone: Implement the medical home model in the remaining ARMC FHCs. (Process)</p> <ul style="list-style-type: none"> • Metric: Increase the number of primary care clinics using the medical home model. <p>59. Milestone: At least 60% of new patients assigned to all of ARMC’s FHC medical homes receive their first appointment in a timely manner. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Percent of new patients 	<p>60. Milestone: At least 70% of new patients assigned to all of ARMC’s FHC medical homes receive their first appointment in a timely manner. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Percent of new patients assigned to medical homes that are contacted for their first patient visit within 60-120 days. 	<p>61. Milestone: At least 80% of new patients assigned to all of ARMC’s FHC medical homes receive their first appointment in a timely manner. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Percent of new patients assigned to medical homes that are contacted for their first patient visit within 60-120 days. <p>62. Milestone: Report shared learnings of the medical home model, and any findings related to impact on improved health, experience and cost. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of shared learnings. 	<ul style="list-style-type: none"> • Redesign Primary Care (Cat. 2) • Expand Chronic Care Management Models (Cat. 2) • Category 3 (TBD)

	<p>Designate/hire Panel Managers to support and oversee panel management at the ARMC FHCs (3 panel managers). (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of designation or employment of panel managers. <p>54. Milestone: Train at least 25% ARMC FHC staff on the medical home model. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of personnel trained on the medical home model. <p>55. Milestone: Implement the medical home model at one ARMC FHC (pilot). (Process)</p> <ul style="list-style-type: none"> • Metric: Increase the number of primary care clinics using the medical home model. <p>56. Milestone: At least 50% of new patients assigned to the pilot medical home receive their first appointment in a</p>	<p>assigned to medical homes that are contacted for their first patient visit within 60-120 days.</p>			
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	timely manner. (Improvement) <ul style="list-style-type: none">• Metric: Percent of new patients assigned to medical homes that are contacted for their first patient visit within 60-120 days.				
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Expand Chronic Care Management Models

- **Goal:** The traditional practice-model of care provided during episodic visits does not align itself well with the needs of the patient with a chronic condition. This type of care does not provide adequate patient education or encouragement to patients who must comply with difficult treatment regimens and successfully make difficult lifestyle changes. The provider-centered rather than patient-centered structure does not promote patient satisfaction, also thought to be a factor in compliance with complex treatment plans. An increased focus on the patient's involvement and commitment to self-management goals will be a necessary to improve outcomes in patients with chronic conditions.

As noted in the Implement and Utilize Disease Management Registry Functionality superset, ARMC reports show that 75% of patients have at least one chronic condition, with 40% having multiple chronic conditions. Specifically, for the period July 1, 2009 through June 30, 2010, 10% of ARMC's patient population was reported to have diabetes and 2% have CHF. According to the MacColl Institute for Healthcare Innovation approximately 145 million people live with a chronic condition and almost half of those people have multiple chronic conditions. Furthermore, the rate of chronically ill patients is expected to increase by more than 1% each year; a rate that shows the current management of disease is executed poorly and not in tune with the needs of chronically ill patients.

ARMC plans to utilize components from Chronic Care Model (CCM)¹², developed by Improving Chronic Illness Care organization, a well documented and tested leading model for treating chronic diseases, summarizing the basic elements for improving care in health systems. By using evidence-based change concepts, patients will be better informed - taking an active part in their care, while patient care teams will have the resources and expertise they need to better manage chronic illness. Specifically ARMC will:

- Design a Delivery System - Improving the health of people with chronic illness requires transforming a system that is essentially reactive - responding mainly when a person is sick - to one that is proactive and focused on keeping a person as healthy as possible. That requires not only determining what care is needed, but spelling out roles and tasks for ensuring the patient gets care using structured, planned interactions. It requires making follow-up a part of standard procedures, so patients aren't left on their own once they leave the doctor's office. More complex patients may need more intensive management (case management) for a period of time to optimize clinic care and self-management.¹³ ARMC's Chronic Care Management Program will help patients systematically monitor their progress and coordinate with experts to identify and solve any problems they encounter in their treatment. Patients will be encouraged to make the lifestyle changes often necessary to achieve the best health outcomes.
- Decision Support - Treatment decisions need to be based on explicit, proven guidelines supported by clinical research. Guidelines should also be discussed with patients, so they can understand the principles behind their care. Those who make treatment decisions need ongoing training to stay up-to-date on the latest evidence, using new models of provider education that improve upon traditional continuing medical education. To change practice, guidelines must be integrated through timely reminders, feedback, standing orders and other methods that increase their visibility at the

¹² http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2

¹³ Excerpted from: http://www.improvingchroniccare.org/index.php?p=Delivery_System_Design&s=21

time that clinical decisions are made. The involvement of supportive specialists in the primary care of more complex patients is an important educational modality.¹⁴

- Clinical Information Systems - A comprehensive clinical information system can enhance the care of individual patients by providing timely reminders for needed services, with the summarized data helping to track and plan care. At the practice population level, an information system can identify groups of patients needing additional care as well as facilitate performance monitoring and quality improvement efforts.¹⁵
- Self-Management Support - Effective self-management support means more than telling patients what to do. It means acknowledging the patients' central role in their care, one that fosters a sense of responsibility for their own health. It includes the use of proven programs that provide basic information, emotional support, and strategies for living with chronic illness. Self-management support can't begin and end with a class. Using a collaborative approach, providers and patients work together to define problems, set priorities, establish goals, create treatment plans and solve problems along the way.¹⁶

In support of the Chronic Care Model, ARMC will:

- Formalize multi-disciplinary teams to include a range of skills from various specialties that work together to enhance interactions between patients and the care team. ARMC will pilot this concept by identifying a physician champion interested in redesign of diabetic care; recruiting a case manager with expertise in assessing the knowledge, skills and motivation to change of patients with chronic illness; and clinical support staff eager to have a larger more therapeutic role in their interaction with diabetic patients. The physician will educate the team about evidence based diabetes care guidelines and introduce patients to the team care approach by linking the treatment plan to self-care management. The case manager will perform the self management interview which will assist patients in their development of personal self management goals and provide ongoing contact with the patients to follow-up on their progress in a supportive non-judgmental manner. The clinic staff will perform initial contact phone calls with patients advising them of necessary visits, lab work or other testing. Clinic staff will perform proactive outreach and may assist patients with completion of advance self care questionnaires. The multi-disciplinary team will use the diabetes registry described in Category 1 to track patients and identify subsets at particular risk. This pilot program will implement the planned visits described by the Improving Chronic Illness Care.

A pilot study conducted by the Summa Health showed that the intervention of a multi-disciplinary care team that focused on individual management of patients with more than one chronic disease resulted in decreased hospital admissions and decreased costs. The pilot compared the cost of pre-hospitalization with a one-year post-care management implementation. The results showed a savings of approximately \$1,000 per patient per month.¹⁷

¹⁴ Excerpted from: http://www.improvingchroniccare.org/index.php?p=Decision_Support&s=24

¹⁵ Excerpted from: http://www.improvingchroniccare.org/index.php?p=Clinical_Information_Systems&s=25

¹⁶ Excerpted from: http://www.improvingchroniccare.org/index.php?p=Self-Management_Support&s=22

¹⁷ Wright, K, Hazelett, S, Jarjoura D, and Allen K. "The AD-LIFE Trial: Working to Integrate Medical and Psychosocial Care Management Models." *Home Healthcare Nurse* 2007; 25(5):308–314.

- Train staff and providers on the aspects and rationale of a Chronic Care Model. Once the above care team is functioning it will train the rest of the staff and providers at the pilot ARMC Family Health Center. The following year ARMC will replicate the program at two other ARMC Family Health Centers
- **Expected Results:** Patients with chronic conditions will receive proactive, ongoing care that keeps them healthy and empowers patients to self-manage their conditions in order to prevent their condition from worsening and requiring emergency or inpatient care. ARMC will improve the percentage of patients with self-management goals to 70% as well as utilize Chronic Care Models for diabetes and CHF in 3 Family Health Centers (primary care).
- **Relation to Category 3 Population-Focused Improvement:** Along with the Medical Home Mode and Primary Care Redesign, expansion of the Chronic Care Management Model will lead to improved outcomes and decreases in preventable disabilities and hospitalizations; ultimately leading to decreased health care costs.

<u>Expand Chronic Care Management Models</u>					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
<p>63. Milestone: Develop a comprehensive care management program for diabetes patients in the ARMC FHC system. (Process)</p> <ul style="list-style-type: none"> • Metric: Care management program. 	<p>64. Milestone: Implement the Chronic Care Model for diabetes at one ARMC FHC (pilot). (Process)</p> <ul style="list-style-type: none"> • Metric: Increase number of primary care clinics using the diabetes Care Model. <p>65. Milestone: Apply the Care Model to one targeted chronic disease (diabetes) which is locally prevalent. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of targeted chronic diseases. <p>66. Milestone: Train at least 25% staff in the Care Model. (Process)</p> <ul style="list-style-type: none"> • Metric: Increase the number of staff trained in the Care Model. <p>67. Milestone: Formalize multi-disciplinary teams in one ARMC FHC. (Process)</p> <ul style="list-style-type: none"> • Metric: Number of ARMC owned 	<p>69. Milestone: Expand the Chronic Care Model for diabetes to the remaining ARMC FHCs. (Process)</p> <ul style="list-style-type: none"> • Metric: Increase number of primary care clinics using the Care Model for diabetes. <p>70. Milestone: Train at least 75% staff in the Care Model. (Process)</p> <ul style="list-style-type: none"> • Metric: Increase the number of staff trained in the Care Model. <p>71. Milestone: Formalize multi-disciplinary teams in all of ARMC’s FHCs. (Process)</p> <ul style="list-style-type: none"> • Metric: Number of ARMC owned Family Health Centers with formalized multi-disciplinary teams. <p>72. Milestone: Designate/hire at least 2 chronic disease case managers to provide case management services</p>	<p>74. Milestone: Improve the percentage of patients with self-management goals to 60%. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Percent of patients with self-management goals in registry. <p>75. Milestone: Apply the Chronic Care Model to a total of two targeted chronic diseases (diabetes and CHF) which are locally prevalent in one ARMC FHC (pilot). (Improvement)</p> <ul style="list-style-type: none"> • Metric: Number of targeted chronic diseases. 	<p>76. Milestone: Improve the percentage of patients with self-management goals to 70%. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Percent of patients with self-management goals in registry. <p>77. Milestone: Expand the Chronic Care Model for CHF to at least 2 more of ARMC’s FHCs. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Increase number of primary care clinics using the Care Model for CHF. 	<ul style="list-style-type: none"> • Expand Medical Homes (Cat. 2) • Category 3 (TBD)

	<p>Family Health Centers with formalized multi-disciplinary teams.</p> <p>68. Milestone: Designate/hire a chronic disease case manager to provide case management services at one of ARMC’s FHC. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of personnel in place to provide case management to chronic care patients. 	<p>in at least 2 of ARMC’s FHC. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of personnel in place to provide case management to chronic care patients. <p>73. Milestone: Improve the percentage of patients with self-management goals to 50%. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Percent of patients with self-management goals in registry. 			
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Redesign Primary Care

- **Goal:** In 2005, ARMC's McKee clinic was the first safety net hospital-associated primary care clinic to undergo patient redesign with the assistance of Coleman and Associates which led to a more patient-centered approach to care. The clinic implemented same-day scheduling, care teams, huddles at the beginning of each half day clinic and modified the patient's flow through the system decreasing the amount of time patients spent waiting. The new method promoted communication between providers and staff to occur in front of the patient during care rather than having the patient wait alone. The redesigned clinic experienced an increase in both provider and staff satisfaction. Subsequently, the Fontana Family Health Center also underwent a successful primary care redesign.

Unfortunately, over the last few years, most of the clinic staff that took part in the initial process are no longer employed by the hospital, and none of the current ARMC Family Health Center managers or the Outpatient Care Administrator has personal experience with the redesign process. Economic realities have seen the necessary support staff and infrastructure to maintain the efficiencies gained from redesign dwindle, while the number of patients relying on the primary care clinics continues to grow rapidly. Long patient lines at registration have returned at McKee Family Health Center. After seeing the provider, patients are asked to wait until clinic staff can get to their chart to process any orders or provide patient education. Often the provider will perform the discharge function thereby reducing the opportunity to provide care for another patient. Consequently provider dissatisfaction is rising. Not only is the provider dissatisfied, but patient frustration with the system is growing as evidenced by an increase in patient complaints. Re-invigorating the patient centered redesign process in one pilot clinic and expanding the process to other clinics is key to improving the patient experience in the primary care clinics.

To redesign the primary care setting, ARMC will work with a consultant group to revamp the process patients undergo in the primary care clinic to vastly improve their experience. Decreasing patient's frustration can lead to more effective patient education and ultimately, improved patient outcomes. Patient centered redesign will be expanded to each of ARMC's three primary care clinics, and when coupled with open access scheduling, will be better able to accommodate patient's appointments when needed, rather than simply when convenient for the provider. Specifically, ARMC plans to work with a consulting firm to implement the following seven steps of Patient Visit Redesign¹⁸:

- Perform direct observation of patient experiences in real time; directly observing and documenting ten to twelve patient visits.
- Translate the observations into graphic representations, allowing us to see the dysfunctional patterns of our current visit process.
- Gather baseline cycle time and productivity data.
- Create an ideal visit model.
- Test the visit model in a series of eight tests that begin with three hour clinic sessions and then extend to all day sessions. After each test, debrief thoroughly and refine the model.
- After the tests, determine our final patient visit model, and run it for three full days, gathering cycle time and productivity data to measure results and compare to our baseline data.

¹⁸ Excerpted from: http://www.patientvisitredesign.com/about_redesign/index.html

- Implement our final model across the clinic site.

As a result of primary care redesign ARMC expects to lower no-show rates, increase capacity for same day visits, decrease reliance on the Emergency Department and be better prepared to balance supply and demand of appointments. By reducing patient wait-times for appointments and during the visit, providers and staff are more productive and better able to meet the needs of more patients. This will lead to an overall improvement in patient, provider and staff satisfaction. Redesign tactics and strategies lead to better providers, care teams, care coordinators and care managers.

- **Expected Results:** ARMC expects to increase efficiency and productivity at the three Family Health Centers so that care is oriented around the patient, improving primary care access and the patient experience. Specifically, the patient “no-show” to appointment rate will be reduced to 15% or less and the visit cycle time will be reduced to 45 minutes or less.
- **Relation to Category 3 Population-Focused Improvement:** With increased access to primary care, patients are better able to receive preventative, primary and ongoing care, developing a continuity of care with their primary care team and improve their overall experience.

Redesign Primary Care					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
<p>78. Milestone: Establish baseline data for patient appointment ‘no-show’ rates and primary care visit cycle times. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of baseline rates. 	<p>79. Milestone: Implement practice management system. (Process)</p> <ul style="list-style-type: none"> • Metric: Documentation of practice management system, such as a vendor contract. <p>80. Milestone: Implement patient visit redesign at one ARMC FHC (pilot). (Process)</p> <ul style="list-style-type: none"> • Metric: Completion of all four phases of the redesign project: (1) Establish method to collect and report cycle time at least monthly; (2) Compare cycle time to other potential measures of efficiency; (3) Map patient visits from beginning to end to determine how time in the clinics is spent, and to identify any bottlenecks in the visit process; and (4) Conduct a series of tests on the visit 	<p>82. Milestone: Implement patient visit redesign at two additional ARMC FHCs. (Process)</p> <ul style="list-style-type: none"> • Metric: Completion of all four phases of the redesign project. <p>83. Milestone: Train 75% of ARMC FHC staff on methods for redesigning clinics to improve efficiency (including primary care residents). (Process)</p> <ul style="list-style-type: none"> • Metric: Percent of staff trained. <p>84. Milestone: Reduce patient appointment no-show rates to 25% or less. (Improvement)</p> <ul style="list-style-type: none"> • Metric: No-show rate over baseline. <p>85. Milestone: Reduce average visit cycle time for primary care clinics to 50 minutes or less – without reducing the time a patient spends with his/her provider. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Visit cycle time. 	<p>86. Milestone: Reduce patient appointment no-show rates to 20% or less. (Improvement)</p> <ul style="list-style-type: none"> • Metric: No-show rate over baseline. <p>87. Milestone: Reduce average visit cycle time for primary care clinics to 45 minutes or less – without reducing the time a patient spends with his/her provider. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Visit cycle time. 	<p>88. Milestone: Reduce patient appointment no-show rates to 15% or less. (Improvement)</p> <ul style="list-style-type: none"> • Metric: No-show rate over baseline. <p>89. Milestone: Maintain average visit cycle time for primary care clinics at 45 minutes or less – without reducing the time a patient spends with his/her provider. (Improvement)</p> <ul style="list-style-type: none"> • Metric: Visit cycle time. 	<ul style="list-style-type: none"> • Expand Medical Homes (Cat. 2) • Expand Chronic Care Management Models (Cat. 2) • Category 3 (TBD)

Redesign Primary Care					
Year 1	Year 2	Year 3	Year 4	Year 5	Other Category Projects This Project Feeds Into
	model, debrief and refine the model. 81. Milestone: Train 25% of ARMC FHC staff on methods for redesigning clinics to improve efficiency (including primary care residents). (Process) <ul style="list-style-type: none"> • Metric: Percent of staff trained. 				

Intervention #1: Improve Severe Sepsis Detection and Management

Key Challenge: Reducing harm or death to patients seeking care due to sepsis.

Sepsis is the body’s response to any kind of infection; bacterial, viral, parasitic, or fungal. It can start in a single area of the body or it can be wide-spread in the bloodstream and if not diagnosed and treated promptly, sepsis can rapidly lead to organ failure and death. Sepsis can strike anyone at any age; although the very old, very young, hospitalized patients and people with certain chronic medical conditions (pneumonia, trauma, surgery, burns, cancer and AIDS) may be at greater risk. Early detection and evidenced-based management are crucial tools to improve patient outcomes and reduce mortality rates.

According to the Surviving Sepsis Campaign®, severe sepsis strikes an estimated 750,000 people in the United States each year, resulting in 210,000 deaths. The rate of severe sepsis continues to rise with an expected 1 million cases in 2010 as the population ages. ARMC’s sepsis mortality rate is 24% compared to a national average of 17%.

ARMC has a Sepsis Taskforce that has been working to address the issue of identifying and treating sepsis and sepsis mortality. To date, the taskforce has focused on individual elements from the Sepsis Bundles, rather than all the elements implemented together. The taskforce has made marginal improvements but is not achieving the types of results the integrated bundles are producing. The taskforce has fallen short in these three areas: (1) standardized physician orders were created but there hasn’t been any solid follow through on implementation; (2) new residents added to the staff haven’t been consistently trained and educated on the new processes; and (3) lack of follow through on results from the project.

Major Delivery System Solution(s): Reduce avoidable harm or deaths due to severe sepsis to patients receiving inpatient services

ARMC is committed to continuous quality improvement to ensure our patients receive the safest and highest quality health care possible. We propose to improve severe sepsis detection and management to reduce unnecessary death and harm attributable to sepsis. Our interventions and improved processes are based upon the IHI recommended Surviving Sepsis Campaign to establish reliable detection and treatment for severe sepsis. This includes implementing both the Sepsis Management and Resuscitation Bundle.

To address this challenge, ARMC will focus on early recognition and treatment of severe sepsis patients, increase the use of evidence based treatment protocols, educate healthcare professionals, monitor compliance with treatment guidelines, and facilitate data collection for purposes of improvement and feedback. Specifically, ARMC will implement the Sepsis Resuscitation and Sepsis Management Bundles which are designed to allow multi-disciplinary medical teams (physicians, nurses, respiratory therapists, pharmacists and other clinicians) to follow timing, sequence and outcomes of the individual elements of care with a goal of reducing sepsis mortality by 25 percent. As a teaching facility, ARMC will utilize standardized tools for early detection and treatment protocols, thereby improving patient outcomes through safe and efficient quality care.

Utilizing the Sepsis Bundle elements, a series of evidence-based interventions that achieve better outcomes when implemented together, ARMC will create custom protocols and pathways designed to meet the needs of its patients. These protocols will closely mirror the bundles, allowing for flexibility for logistical

and other needs specific to ARMC. Sepsis bundles were derived from the 2008 Surviving Sepsis Campaign Guidelines which incorporate the Grades of Recommendation, Assessment, Development and Evaluation (GRADE) system approach. The bundles are constructed from evidence-based practices, where science supporting the individual treatment strategies in a bundle is sufficiently mature such that implementation is considered a best practice. ARMC anticipates that making the Severe Sepsis Bundles standard practice will enhance the quality of care provided to its patients and reduce the overall mortality caused by sepsis.

The Sepsis Resuscitation Bundle is to be completed within 6 hours for patients with severe sepsis, septic shock and/or lactate > 4mmol/L (36mg/dl). To perform this bundle, four elements must be accomplished within the first 6 hours of presentation. These items include:

- Serum lactate will be measured
- Blood cultures will be obtained prior to antibiotic administration
- Broad-spectrum antibiotics will be administered within 3 hours for Emergency Department (ED) admissions and within 1 hour for non-ED Intensive Care Unit (ICU) admissions
- In the event of hypotension and/or lactate >4mmol/L (36mg/dl):
 - Deliver an initial minimum of 20ml/kg of crystalloid (or colloid equivalent)
 - Apply vasopressors for hypotension not responding to initial fluid resuscitation to maintain mean arterial pressure (MAP)>65mm Hg.

In the event of persistent hypotension despite fluid retention (septic shock) and/or lactate >4mmol/L (36mg/dl):

- Achieve central venous pressure (CVP) of > 8mm Hg
- Achieve central venous oxygen saturation (ScvO₂) of > 70%

The Sepsis Management Bundle is to be completed within 24 hours for patients with severe sepsis, septic shock and/or lactate > 4mmol/L (36mg/dl). To perform this bundle, four elements must be accomplished within the first 24 hours of presentation. These items include:

- Low-dose steroids administered for septic shock in accordance with standardized ICU policy and procedure
- Drotrecogin alfa (activated) administered in accordance with a standardized ICU policy and procedure
- Glucose control maintained > lower limit of normal, but < 180mg/dl (10mmol/L)
- Inspiratory plateau pressures maintained < 30cm H₂O for mechanically ventilated patients

Through ARMC's Severe Sepsis Detection and Management (Multi-Disciplinary) Task Force, the following will be reviewed and developed:

- A sepsis screening tool to assist Residents and Staff Physicians in early recognition of signs and symptoms of sepsis.
- Consider utilizing the Rapid Response Team for identification of septic patients, and initiate resuscitation treatment.

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- Review the ED Triage process for early detection of possible sepsis when a patient presents in the ED.
- Review current antibiotic selection and timeliness of administration.
- Educate Residents and Nursing staff on the International Healthcare Improvement (IHI) Bundles for Sepsis.
- Track and trend patient outcomes.

To make the elements of the Sepsis Bundles more reliable, ARMC will:

- Coordinate strong partnerships among the ED, Critical Care and Medical-Surgical units. Staff from each of these departments will be represented on the multi-disciplinary taskforce ensuring success of the Severe Sepsis Detection and Management Project. The Medical Director in each of these areas will play a crucial role in following the evidenced-based protocols and sharing the data with all involved parties. Early detection and management in the ED is vital in order to initiate the treatments, resuscitation and antibiotics within the initial six hour window.
- Continue membership with the Southern California Patient Safety Collaborative (SCPSC) in order to share ideas and receive ongoing training and benchmarking data.
- Create an order set in ARMC's Health Information Management System, Meditech, for patients in the ED who have been identified as possibly having sepsis. This order set will contain a STAT lab requisition which will be sent to the Laboratory for blood cultures and lactate collection. Reports will also be developed to track and trend compliance and turn around time of the lab results.
- Ensure that the Pharmacy Department is vital to the multi-disciplinary team to ensure immediate access to appropriate antibiotics in the ED; this includes a broad spectrum of pre-mixed and ready to administer intravenous antibiotics.
- The multi-disciplinary team will develop pre-printed Physician Order sets for ED and ICU treatment, and immediate treatment for the non-critical care units until the patient can be transferred to the ICU. The Physician Order sets will ensure compliance with the pre-defined IHI Bundle elements.
- Broker an agreement for line placement with other services upon detection of possible sepsis. The most qualified physician will be required to insert a Central Line in the patient (if not done previously). Utilization of portable ultrasound in the ED will facilitate appropriate placement of central lines.
- Protocols and screening tools will be used for early detection and immediate treatment for all patients with severe sepsis or septic shock. The Nursing Supervisor will assist with proper level of care, bed assignment (ICU, or Step-down Unit.)
- Ensure that the Performance Improvement department performs medical record reviews on 100% of all patients diagnosed with septic shock syndrome and/or sepsis. The review will determine if all elements of the resuscitation bundle were utilized. Results of the medical record review will be tracked and

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trended by the Department/Provider. Findings will be sent to the Department Chairman and reported to the hospital-wide Quality Management Committed as well as the Medical Executive Committee.

- ARMC's Performance Improvement department will hire three (3) additional FTEs for the Category Four Supersets; one (1) Staff Analyst to perform report writing for data collection and analysis, and two (2) LVNs to assist with medical record review and data abstraction.
- Physicians, Residents, and Nursing Staff in the ED, ICUs, and Non-Critical Care Units will be educated on the Sepsis Bundle Elements and Protocols, Checklists, and Screening Tools to ensure compliance with the bundle elements. In addition all data collected will be shared with staff directly involved to solicit feedback as to any barriers that prevent ARMC from achieving 100% compliance with the sepsis bundles. All outcome measures will be shared with the task force and staff members to provide feedback to further improve patient outcomes.

ARMC will reduce sepsis mortality by introducing multifaceted approaches to patient management, the use of evidence-based interventions (Sepsis Resuscitation and Sepsis Management Bundles) and incremental milestone strategies to combat this complex, aggressive and prevalent condition. ARMC will continuously measure compliance with the bundle elements, as well as patient outcomes, in an effort to identifying new opportunities to further improve patient care. ARMC understands that in order to be successful with the sepsis bundles, all elements must be implemented together as defined by IHI.

Intervention #1: Improve Severe Sepsis Detection and Management

Improve Severe Sepsis Detection and Management (required)				
Year 1	Year 2	Year 3	Year 4	Year 5
<p>1. Begin to collect data on Sepsis Resuscitation Bundle to SNI for purposes of establishing the baseline and setting benchmarks.</p>	<p>2. Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 interventions).</p> <p>3. Hire Staff Analyst to perform report writing data collection and analysis (shared amongst all 4 interventions).</p> <p>4. Join the Surviving Sepsis Campaign to learn and share best practices related to improving severe sepsis and septic shock detection and management.</p> <p>5. Train clinical staff on the Sepsis Bundle Element and Protocols, Checklists and Screening Tools (maintain on-going training education).</p>	<p>10. Achieve X% compliance with Sepsis Resuscitation Bundle, where “X” will be determined in Year 2 based on baseline data.</p> <p>11. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>12. Report Sepsis Resuscitation Bundle and Sepsis Mortality results to the State.</p> <p>13. Initiate LEAN methodologies to assist in identifying any barriers related to compliance with IHI Sepsis Resuscitation Bundle elements.</p>	<p>14. Achieve X% compliance with Sepsis Resuscitation Bundle, where “X” will be determined in Year 2 based on baseline data.</p> <p>15. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>16. Report results to the State.</p>	<p>17. Achieve X% compliance with Sepsis Resuscitation Bundle, where “X” will be determined in Year 2 based on baseline data.</p> <p>18. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>19. Report results to the State.</p>

Improve Severe Sepsis Detection and Management (required)				
Year 1	Year 2	Year 3	Year 4	Year 5
	<p>6. Develop Intensive Care Unit policies and procedures to support compliance with the Sepsis Resuscitation Bundle.</p> <p>7. Implement the Sepsis Resuscitation Bundle.</p> <p>8. Report at least 6 months of data collection on Sepsis Resuscitation Bundle to SNI for purposes of establishing the baseline and setting benchmarks.</p> <p>9. Report the Sepsis Resuscitation Bundle results to the State.</p>			

Intervention #2: Central Line-Associated Bloodstream Infection (CLABSI) Prevention

Key Challenge: Reducing harm or death to patients seeking care due to Central Line-Associated Bloodstream Infections

Central line venous catheters (CVCs) are being increasingly used in both the inpatient and outpatient settings at ARMC to provide long-term venous access. CVCs disrupt the integrity of the skin, making infection with bacteria and/or fungi possible. Infection can spread to the bloodstream and hemodynamic changes and organ dysfunction may ensue possibly leading to death. Studies show that approximately 90 percent of the catheter-related bloodstream infections occur with CVCs.

An estimated 248,000 bloodstream infections occur in U.S. hospitals each year; between 14,000 and 28,000 patients die annually from these infections. It is believed that large portions of these are associated with the presence of a CVC, though this is an area where more study is needed.

Bloodstream infections are usually serious infections typically causing a prolongation of hospital stay and increased cost and risk of mortality. Central Line Associated Bloodstream Infections (CLABSI) can develop if the central line is not placed or maintained using sterile conditions and the highest infection control standards. Due to their difficulty to diagnose and treat, CLABSI can lead to death in a critically ill patient.

A key challenge with CLABSI for ARMC is that discontinuing the central line as soon as possible is not designated with a definitive timeframe; therefore. Currently, there are no evidenced based timeframes, such as from the Centers for Disease Control (CDC), as to when a Central Line should be discontinued. ARMC will need to work collaboratively with our Infection Control Officer, Intensivist, and other members of the healthcare team to develop guidelines for discontinuing a Central Venous Catheter.

ARMC does not have a baseline utilizing the IHI Global Trigger Tool. Data is currently measured and collecting using the National Healthcare Safety Network Database/Benchmark.

Major Delivery System Solution(s): Reduce avoidable harm or deaths due to Central Line-Associated Bloodstream Infections to patients receiving inpatient services

To address this challenge, ARMC will implement the Central Line Bundle in all departments that currently insert and/or manage Central Line Catheters. Specific areas include the Emergency Department (ED), Operating Room, Post Anesthesia Care Unit, and all in-patient units. All Physicians and Nursing staff will be required to attend training on Central Line bundle elements. Standardized Protocols will be developed to address the following elements:

- Hand Hygiene – The Infection Control Department currently performs surveillance to ensure proper hand-hygiene techniques are followed by all healthcare workers. Department Safety Representatives attend a training course outlining the importance of hand hygiene. This information is then funneled to department staff through department safety meetings. In addition, Department Safety Representatives have partnered with the Infection Control

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Department to perform Hand Hygiene surveillance in their respective departments. All employees are oriented to hand hygiene upon hire and re-educated annually through an annual employee update.

- Maximal Barrier Precautions upon Insertion – Currently all areas complete a checklist for all central line insertions. Through a taskforce and quality management, this form will be reviewed to identify any areas of concern. Changes will be implemented and training will follow.
- Chlorhexidine Skin Antisepsis – All central line kits include chlorhexidine skin preparation swabs.
- Optimal Catheter Site Selection with avoidance of using femoral vein for Central Venous access in adult patients – ARMC’s current policy states that femoral vein central line catheters are only to be inserted during an emergency situation and must be discontinued within 24 hours of insertion.
- Daily review of line necessity with prompt removal of unnecessary lines – At the present time, ARMC’s ICUs monitor central line necessity on a daily basis. This practice will be expanded to all units that have patients with central lines. Specific training related to daily review will be provided to all pertinent staff who oversee patients with a central line.

To make the elements of the Central Line Associated Bloodstream Infection Prevention more reliable, ARMC will:

- Keep standard equipment for central line placement stocked in a cart or kit to avoid the difficulty of finding necessary equipment too institute bundle elements.
- Use an insertion checklist that includes all bundle elements for central line insertions. ARMC currently utilizes a checklist. All checklists are sent to the Infection Control Department and results of compliance are shared with the individual Medical Departments and the hospital-wide Infection Control Committee.
- Continue to have the Infection Control Nurse collect all data related to Central Line Insertion Practices and report by unit location to the hospital-wide Specialty Care Committee and the Quality Management Committee; with a goal to add the data collected by specific service and provider inserting the line so that education can be provided on a one-to-one basis to any Physician/Resident who fails to follow the safe practice for central line insertions.
- ARMC has a policy in place that empowers nursing staff to stop an insertion if elements of the bundle are not being executed.
- In the ICUs all pertinent staff are trained to utilize the assessment for removal of central lines. Staff are required to complete this assessment on a daily basis. This process will be rolled out to all patient care areas where staff care for patients with a central line.

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- Physician and nursing staff will be trained to document the line day (e.g. “Line day 6”) during rounds as part of daily goal sheets. This practice will be implemented and monitored for compliance.
- Ensure that soap or alcohol-based hand gel dispenser prominently placed in or near patient rooms, and make universal precautions equipment, such as gloves available near hand sanitation equipment.
- Quality Improvement staff will measure bundle compliance using an “all or nothing” measurement and share compliance data with staff. From these measurements, processes will be revised or implemented to meet all bundle elements.
- ARMC’s Performance Improvement department will hire three (3) additional FTEs for the Category Four Supersets; one (1) Staff Analyst to perform report writing for data collection and analysis, and two (2) LVNs to assist with medical record review and data abstraction.

Recently, ARMC changed the way it collected data on CLABSI. Prior to April 2010, all data collected was grouped into a hospital-wide figure; individual department data wasn’t separated out, thereby giving generic figures to specific areas. In April 2010, the Quality Improvement department began tracking and trending data by unit. In doing so, the taskforce is able to more clearly identify where the break down occurred and provide a better analysis for improvement.

Intervention #2: Central Line-Associated Bloodstream Infection (CLABSI) Infection Prevention

Central Line-Associated Bloodstream Infection (CLABSI) Infection Prevention (required)				
Year 1	Year 2	Year 3	Year 4	Year 5
<p>20. Begin to collect data on: (1) compliance with optimal catheter site selection, with avoidance of using the femoral vein for central venous access in adult patients, and (2) evidence of daily review of line necessity; with prompt removal of unnecessary lines.</p>	<p>21. Train clinical staff to document line day during rounds as part of daily goal sheets.</p> <p>22. Hire Staff Analyst to perform report writing, data collection and analysis (shared amongst all 4 interventions).</p> <p>23. Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 interventions).</p> <p>24. Train clinical staff on the Central Line Bundle (maintain on-going training education).</p> <p>25. Obtain a baseline on: (1) compliance with optimal catheter site selection, with avoidance of using the femoral vein for central venous access in</p>	<p>30. Achieve X% compliance with CLIP, where “X” will be determined in Year 2 based on baseline data.</p> <p>31. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>32. Report CLIP and CLABSI results to the State.</p>	<p>33. Achieve X% compliance with CLIP, where “X” will be determined in Year 2 based on baseline data.</p> <p>34. Reduce Central Line Bloodstream Infections by X%, where “X” will be determined in Year 2 based on baseline data.</p> <p>35. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>36. Report CLIP and CLABSI results to the State.</p>	<p>37. Achieve X% compliance with CLIP, where “X” will be determined in Year 2 based on baseline data.</p> <p>38. Reduce Central Line Bloodstream Infections by X%, where “X” will be determined in Year 2 based on baseline data.</p> <p>39. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>40. Report CLIP and CLABSI results to the State.</p>

Central Line-Associated Bloodstream Infection (CLABSI) Infection Prevention (required)				
Year 1	Year 2	Year 3	Year 4	Year 5
	<p>adult patients, and (2) evidence of daily review of line necessity; with prompt removal of unnecessary lines.</p> <p>26. Implement the Central Line Insertion Practices (CLIP).</p> <p>27. Report at least 6 months of data collection on CLIP to SNI for purposes of establishing the baseline and setting benchmarks.</p> <p>28. Report at least 6 months of data collection on CLABSI to SNI for purposes of establishing the baseline and setting benchmarks.</p> <p>29. Report CLIP results to the State.</p>			

Intervention #3: Hospital-Acquired Pressure Ulcer Prevention

Key Challenge: Reducing harm or death to patients seeking care due to Hospital-Acquired Pressure Ulcer Prevention

Pressure ulcers are most common on bony prominences with little protective fat or muscle and tend to develop when a patient remains in one position too long without shifting their weight. Patients who are bedridden or wheel-chair bound are extremely vulnerable to pressure ulcers; though patients who sit in a regular chair without moving can also become susceptible to pressure ulcers. Pressure ulcers form when there is constant pressure against the skin thereby reducing blood flow to that area. The skin begins to break down and the tissue dies causing redness at the area followed by a blister, then an open sore, and finally a crater. Research continues to show that most pressure ulcers are preventable.

Approximately 2.5 million patients are being treated for pressure ulcers in the U.S. annually. Rates of occurrences in hospitals range from 0.4 percent to 38 percent. Further statistics indicate that 60,000 patients will die annually from complications due to hospital acquired pressure ulcers and that the total cost for treating pressure ulcers in the U.S. is estimated at \$11 billion.

All sedentary patients are at risk of forming a pressure ulcer, but the elderly and severely compromised patient population whose skin can fail just as other organs do are at even greater risk. Pressure ulcers have been shown to slow recovery, extend hospital stays and increase mortality rates.

Historically, ARMC has collected minimal data on pressure ulcer incidence and prevalence; not addressing all the components of pressure ulcers, including, timeliness of skin assessment, education, hydration, etc. ARMC's current pressure ulcer prevalence rate is 7% and incidence rate is 8%. By expanding the data collected, ARMC will improve our prevention of pressure ulcers by ensuring a consistent practice of evidenced-based practice by Nursing and Medical Staff. Developing new protocols and providing house-wide education on Pressure Ulcer Prevention, ARMC will benefit in improving our overall quality of care, patient satisfaction and cost avoidance in the following ways:

- Hourly rounding by nurses ensures that patients receive timely/consistent assessments/re-assessments of their current status. Hourly rounding also improves patient satisfaction due to the Nurse anticipating and addressing all patient needs immediately.
- Reducing Pressure Ulcer Incidence decreases length of stay, as well as reducing Hospital Acquired Infection rates.
- Medicare can deny in-hospitalization reimbursement if the patient develops a pressure ulcer during their hospital stay.

Major Delivery System Solution(s): Reduce avoidable harm or deaths due to Hospital-Acquired Pressure Ulcers to patients receiving inpatient services

To make the process of the pressure ulcer prevention more reliable, ARMC will implement the following elements as part of the Pressure Ulcer Prevention bundle:

- Conduct a pressure ulcer admission assessment for all patients

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- Perform an admission risk assessment on every patient.
- Include reliable, detailed skin assessment for all patients.
- ARMC currently performs a detailed skin assessment for all admitted patients. This practice will be expanded to include risk assessments in the Emergency Department (ED). Appropriate ED staff will be trained on the standardized assessment tool. Charts will be audited to ensure compliance with mandatory skin assessments.
- Reassess risk for all patients daily
 - Use a standardized tool to assess risk for all patients, at all levels of care.
 - Use visual cues to identify patients at risk, such as stickers on charts, logos on door and on the chart, etc. Currently ARMC places a turn clock schedule poster in all patients' rooms that are identified as high risk for pressure ulcers. These visual flags remind staff of importance of turning patients.
 - Standardize intervention for at-risk patients.
- Inspect skin daily
 - Standardize documentation tools to ensure details of assessment are documented consistently.
 - Develop a process for daily skin assessment and allow staff to develop a standard time of day to assess and document skin assessment.
 - Ensure that all staff are consistent with skin inspection and documentation standards.
- Manage moisture on skin
 - Develop a process (such as hourly rounds) for ensuring that patients are clean and dry.
 - Standardize skin care products, utilizing products that wick away or block moisture.
 - Use tools to ensure that appropriate supplies and products are at the bedside of at-risk patients (e.g. skin care kit that includes supplies to clean patients, change pads, skin care products, etc.).
- Optimize nutrition and hydration
 - Develop a reliable process to consult the dietician when nutritional elements contribute to risk.
 - Ensure fluid balance by providing fluids and supplements as appropriate.
- Minimize pressure
 - Ensure a reliable process for redistributing pressure (e.g. use a turn clock as a reminder to staff, implement turn rounds, etc.)
 - Triage use of pressure redistributing beds and mattresses. ARMC has developed an algorithm for implementation of specialty beds and mattresses.

As noted in the Key Challenge, ARMC needs to expand the data collected on each patient that is admitted into the hospital. Specific measures to collect and develop a baseline on are as follows:

- Is the Initial Skin Assessment completed 100% on all patient admissions?
- Is the shift Skin Assessment completed 100% on every shift? (every 12 hours)
- Once a patient is identified, are all interventions on the Pressure Ulcer Prevention Bundle implemented?
- Are Pressure Ulcer Risk Assessments and issues reported when a patient is transferred to another unit?
- Is there documentation of daily moistening to the patient's skin?

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- Is there evidence that the head of the patients' bed is at 30°, except at time of meals?
- Is there evidence of the patient receiving daily activity?
- Is there a dietary consult completed and do the patient's orders reflect the dietician's recommendations?
- Is the patient receiving at least 1,500 – 2,000 ml of fluid daily?
- Is there evidence that the patient and the family have been educated on ways to prevent skin breakdown?

In addition to the measures collected and baseline developed, ARMC will take the following steps towards implementing an effective bundle system for pressure ulcer prevention:

- Use a standardized tool to assess risk for all patients, at all level of care. ARMC currently performs a skin assessment every shift (12 hours) using the Standardized Braden Scale.
- Standardize interventions for at-risk patients. ARMC currently follows the Pressure Ulcer Prevention Initiative:
 - Moisture dry skin daily
 - Maintain head of bed at 30° or less except at meals
 - Promote activity (a bed rest patient is at the highest risk for pressure ulcer development)
 - Consider dietary intervention (dietary consult, nutritional supplement)
 - Encourage fluid intake, unless contraindicated (1,500 - 2,000ml every day)
 - use a barrier cream every time the patient has incontinence
 - Educate patient to shift weight every 15 minutes when sitting and to turn ever hour when in bed
 - Educate patient/family about ways to prevent skin break-down
- Report findings to Pressure Ulcer Multi-Disciplinary Committed and the hospital-wide Quality Management Committee.
- Utilize LEAN methodologies to assist with identification of any barriers related to compliance with any of the IHI Pressure Ulcer Bundle elements.
- Nursing management and all levels of clinical nursing staff (RN, LVNs and CNAs) are required to complete an eight (8)-hour educational program on the Pressure Ulcer Prevention Initiative and Wound Management. This training is hosted monthly. As part of this initiative, ARMC will work to integrate the Pressure Ulcer Prevention Initiative education into New Employee Orientation for Nursing, with a refresher course in the Annual Employee Update (clinical staff). Each nursing unit will develop a Pressure Ulcer Prevention Nurse who will receive additional training in pressure ulcer prevention and serve as a resource person to the nursing staff and residents on the unit.
- Physician and Resident training-- All attending Physicians will need to be trained in the Bundle System for Pressure Ulcer Prevention. In addition, the Residents will need to receive education on the Bundle System for Pressure Ulcer Prevention as part of their Initial Orientation to ARMC

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- ARMC's Performance Improvement department will hire three (3) additional FTEs for the Category Four Supersets; one (1) Staff Analyst to perform report writing for data collection and analysis, and two (2) LVNs to assist with medical record review and data abstraction.
- Join the Cal-Noc Collaboration so that data on pressure ulcer incidence and prevalence can be added to our current CHART reporting.

Intervention #3: Hospital-Acquired Pressure Ulcer Prevention

Hospital-Acquired Pressure Ulcer Prevention				
Year 1	Year 2	Year 3	Year 4	Year 5
<p>41. Develop a plan to establish a baseline on Hospital Acquired Pressure Ulcer Incidence and Prevalence.</p>	<p>42. Train physicians, residents, nursing staff and allied health professionals on the Pressure Ulcer Prevention Bundle (maintain on-going training education).</p> <p>43. Hire Staff Analyst to perform report writing data collection and analysis (shared amongst all 4 interventions).</p> <p>44. Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 interventions).</p> <p>45. Establish pressure ulcer baseline data.</p> <p>46. Implement hourly rounding by nursing staff in all adult inpatient units.</p> <p>47. Join Cal-Noc to report Pressure Ulcer Incidence and Prevalence.</p>	<p>50. Utilize LEAN methodologies to assist in identifying any barriers related to compliance with IHI Pressure Ulcer Bundle elements.</p> <p>51. Achieve hospital-acquired pressure ulcer prevalence of less than 4.2 %.</p> <p>52. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>53. Report hospital-acquired pressure ulcer prevalence results to the State.</p>	<p>54. Achieve hospital-acquired pressure ulcer prevalence of less than 1.7%.</p> <p>55. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>56. Report hospital-acquired pressure ulcer prevalence results to the State.</p>	<p>57. Achieve hospital-acquired pressure ulcer prevalence of less than 1.1%.</p> <p>58. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>59. Report hospital-acquired pressure ulcer prevalence results to the State.</p>

Hospital-Acquired Pressure Ulcer Prevention				
Year 1	Year 2	Year 3	Year 4	Year 5
	<p>48. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>49. Report hospital-acquired pressure ulcer prevalence results to the State.</p>			

Intervention #4: Stroke Management

Key Challenge: Reduce harm or death to patients seeking care due to a stroke

According to the Centers for Disease Control and Prevention, strokes are the third leading cause of death in the United States, with approximately 137,000 Americans dying from a stroke each year. Even more alarming, every year, about 795,000 people in the United States have a stroke; approximately 610,000 of these are first or new strokes; and 185,000 are the individuals who survive a stroke eventually have another. With the hundreds of thousands of Americans suffering from a stroke each year ARMC, in line with its mission and vision, “To improve the health of the community by being the provider of choice for health care delivery and education”, made a commitment to become certified as a designated Stroke Center through the Healthcare Facilities Accreditation Program (HFAP). In April 2010, ARMC received approval from HFAP to be certified as a designated Stroke Center, letting our community and patients know that ARMC complies with national standards for strokes and in receiving their medical care at ARMC, they will get the best stroke care possible.

Given the narrow therapeutic window for treatment of acute ischemic stroke, timely evaluation and diagnosis of ischemic stroke is paramount. A key challenge for ARMC is reaching out and educating the community on the signs and symptoms of impending stroke. The average time that our patient population presents to the Emergency Department (ED) after the onset of signs and symptoms is 22.4 hours.

Another stroke management challenge at ARMC is consistent activation of a “Code Stroke” per policy. ARMC’s policy states that when a patient exhibits any signs and symptoms of a stroke, a “Code Stroke” is to be called within 15 minutes of the symptom onset, including patients that present in the ED. Currently the average time for notification of a “Code Stroke” to the Stroke Team is 35 minutes.

Another measure ARMC struggles with is the Standard Swallow Evaluation prior to oral intake. Recently, ED Nurse’s Notes have been revised to include a place to document that the RN performed a Swallow Evaluation prior to giving the patient anything by mouth.

Major Delivery System Solution(s): Reduce avoidable harm or deaths due to strokes to patients receiving inpatient services

To make the process of stroke management more reliable, ARMC will implement the following elements as part of the Stroke Management Bundle:

- Provide Intravenous TPA (Tissue Plasminogen Activator) within 180 minutes of onset of stroke symptoms. ARMC’s current protocol for Acute Ischemic Stroke includes this element. Compliance with this element is tracked monthly and reported monthly to the Stroke Committee and the hospital-wide Quality Community.
- Provide anti-thrombotic medication within 48 hours of hospitalization. The protocol for Acute Ischemic Stroke includes this element. Compliance with this element is tracked monthly and reported to the Stroke Committee and the hospital-wide Quality Management Committee.

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- Provide DVT (Deep Vein Thrombosis) prophylaxis for patients at risk by the second hospital day. This is currently an order on ARMC's pre-printed Standard Acute Stroke Physician orders.
- Prescribe Anti-thrombotics (e.g., warfarin, aspirin, and other anti-platelet drug) at discharge. This is currently part of the standing discharge orders for all stroke patients.
- Prescribe anti-coagulation therapy – warfarin (Coumadin) and/or heparin/heparinoids at discharge to patients with atrial fibrillation unless an absolute or relative contraindication exist. This is part of ARMC's standing discharge orders for all stroke patients.
- Provide cholesterol-reducing drugs at discharge to patients who have LDL \geq 100 mg/dl or who were taking a cholesterol reducer prior to admission. This is part of ARMC's standing discharge orders for all stroke patients.
- Provide smoking cessation advice or medication (e.g., Nicoderm or Zyban) at discharge. At ARMC, all patients receive information on smoking cessation as part of their admission process.

To make the elements of the Stroke Management bundle more reliable, ARMC will perform the following:

- Establish a baseline on: (1) Thirty (30) day readmissions for stroke; (2) Cost of care for inpatient case; and (3) Average length of stay per inpatient case.
- Maintain certification with the Healthcare Facilities Accreditation Program (HFAP) for Stroke Care awarded to ARMC in 2010.
- Continue to send ARMC stroke indicators results/data findings to HFAP and the American Hospital Association.
- Implement a process between the Emergency Department and Laboratory to ensure compliance with completion of required lab studies <45 minutes.
- All Nurses, Physicians and Residents will be trained in the HFAP standards related to care of stroke patients. Currently, stroke patients are admitted to the two Intensive Care Units (ICU) and Step Down Unit where 100% of the Nursing Staff are Stroke Certified.

On-going education is required for new nursing staff hired into the ICU's and the Step Down Unit. In addition, on-going education in the HFAP Standards for stroke care is required for all new residents when they begin their rotations at ARMC.

- ARMC's Performance Improvement department will hire three (3) additional FTEs for the Category Four Supersets; one (1) Staff Analyst to perform report writing for data collection and analysis, and two (2) LVNs to assist with medical record review and data abstraction.

Intervention #4: Stroke Management

Stroke Management				
Year 1	Year 2	Year 3	Year 4	Year 5
<p>60. Develop a plan to report at least 6 months of data collection on the 7 stroke management process measures to SNI for purposes of establishing the baseline and setting benchmarks.</p>	<p>61. Hire Staff Analyst to perform report writing data collection and analysis (shared amongst all 4 interventions)</p> <p>62. Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 interventions).</p> <p>63. Report at least 6 months of data collection on the 7 stroke management process measures to SNI for purposes of establishing the baseline and setting benchmarks.</p> <p>64. Report the data to the State.</p>	<p>65. Increase the rate of patients with an ischemic stroke prescribed antithrombotic therapy at discharge by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>66. Increase the rate of patients with an ischemic stroke with atrial fibrillation/flutter discharged on anticoagulation therapy by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>67. Increase the rate of acute ischemic stroke patients who arrive at the hospital within 120 minutes (2 hours) of time last known well and for whom IV t-PA was initiated at this hospital within 180 minutes (3 hours) of time last known well by X, where “X” will be determined in Year 2 based on baseline data.</p>	<p>75. Increase the rate of patients with an ischemic stroke prescribed antithrombotic therapy at discharge by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>76. Increase the rate of patients with an ischemic stroke with atrial fibrillation/flutter discharged on anticoagulation therapy by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>77. Increase the rate of acute ischemic stroke patients who arrive at the hospital within 120 minutes (2 hours) of time last known well and for whom IV t-PA was initiated at this hospital within 180 minutes (3 hours) of time last known well by X, where “X” will be</p>	<p>84. Increase the rate of patients with an ischemic stroke prescribed antithrombotic therapy at discharge by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>85. Increase the rate of patients with an ischemic stroke with atrial fibrillation/flutter discharged on anticoagulation therapy by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>86. Increase the rate of acute ischemic stroke patients who arrive at the hospital within 120 minutes (2 hours) of time last known well and for whom IV t-PA was initiated at this hospital within 180 minutes (3 hours) of</p>

Stroke Management				
Year 1	Year 2	Year 3	Year 4	Year 5
		<p>68. Increase the rate of patients with ischemic stroke who receive antithrombotic therapy by the end of hospital day two by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>69. Increase the rate of ischemic stroke patients with LDL > 100, or LDL not measured, or, who were on cholesterol reducing therapy prior to hospitalization are discharged on statin medication by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>70. Increase the rate of patients with ischemic or hemorrhagic stroke or their caregivers who were given education and/or educational materials during the hospital stay addressing all of the following: personal risk factors for stroke, warning signs for stroke, activation of emergency medical system, need for</p>	<p>determined in Year 2 based on baseline data.</p> <p>78. Increase the rate of patients with ischemic stroke who receive antithrombotic therapy by the end of hospital day two by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>79. Increase the rate of ischemic stroke patients with LDL > 100, or LDL not measured, or, who were on cholesterol reducing therapy prior to hospitalization are discharged on statin medication by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>80. Increase the rate of patients with ischemic or hemorrhagic stroke or their caregivers who were given education and/or educational materials during the hospital stay</p>	<p>time last known well by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>87. Increase the rate of patients with ischemic stroke who receive antithrombotic therapy by the end of hospital day two by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>88. Increase the rate of ischemic stroke patients with LDL > 100, or LDL not measured, or, who were on cholesterol reducing therapy prior to hospitalization are discharged on statin medication by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>89. Increase the rate of patients with ischemic or hemorrhagic stroke</p>

Stroke Management				
Year 1	Year 2	Year 3	Year 4	Year 5
		<p>follow-up after discharge, and medications prescribed at discharge by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>71. Increase the rate of patients with an ischemic stroke or hemorrhagic stroke who were assessed for rehabilitation services by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>72. Utilize LEAN methodologies to assist in identifying any barriers related to compliance with IHI Stroke Management Bundles.</p> <p>73. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>74. Report the 7 process measures and stroke mortality rate results to the State.</p>	<p>addressing all of the following: personal risk factors for stroke, warning signs for stroke, activation of emergency medical system, need for follow-up after discharge, and medications prescribed at discharge by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>81. Increase the rate of patients with an ischemic stroke or hemorrhagic stroke who were assessed for rehabilitation services by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>82. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>83. Report the 7 process measures and stroke</p>	<p>or their caregivers who were given education and/or educational materials during the hospital stay addressing all of the following: personal risk factors for stroke, warning signs for stroke, activation of emergency medical system, need for follow-up after discharge, and medications prescribed at discharge by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>90. Increase the rate of patients with an ischemic stroke or hemorrhagic stroke who were assessed for rehabilitation services by X, where “X” will be determined in Year 2 based on baseline data.</p> <p>91. Share data, promising practices, and findings with SNI to foster</p>

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Stroke Management				
Year 1	Year 2	Year 3	Year 4	Year 5
			mortality rate results to the State.	shared learning and benchmarking across the California public hospitals. 92. Report the 7 process measures and stroke mortality rate results to the State.