**Arrowhead Regional Medical Center**

**REQUEST FOR DSRIP PLAN MODIFICATION TO DSRIP FIVE-YEAR PLAN SUBMITTED ON FEBRUARY 18, 2011**

**FOR CATEGORY 4: URGENT IMPROVEMENT IN QUALITY AND SAFETY –**

**IMPROVE SEVERE SEPSIS DETECTION AND MANAGEMENT**

**CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTION (CLABSI) PREVENTION**

**HOSPITAL-ACCQUIRED PRESSURE ULCER PREVENTION**

**STROKE MANAGEMENT**

*DSRIP Plan Submitted: February 18, 2011*

*Revised Submission for Plan Modification Submitted on July 18, 2011*

**Request for DSRIP Plan Modification**

Arrowhead Regional Medical Center (ARMC) is requesting a Delivery System Reform Incentive Payment Plan Modification as outlined in the Incentive Pool Review Process and Program Mechanics: Reporting, Assessment and Modification Process (pages 12-13, Section IV, Part C). The proposed change aligns our reporting with that of the technical specifications per the California 1115 Waiver, Terms and Conditions, Attachment Q, Category 4. ARMC proposes the following changes to align with the Terms and Conditions of the California 1115 Waiver:

* In preparation for meeting the goals and milestones of Category 4’s Severe Sepsis Detection and Management Project, Team Leaders from ARMC’s Severe Sepsis Detection and Management Multi-Disciplinary Task Force met to review the Severe Sepsis Detection and Management project and necessary reporting requirements. The Task Force noted that ARMC’s original plan for Category 4 alluded in the narrative to the Sepsis Management Bundle and items that will be accomplished in the event of persistent hypotension. Although no mention was made in the original plan that ARMC would report these additional elements at this time, ARMC does wish to clarify/emphasize that these elements lie outside the current technical specifications of the Severe Sepsis Detection and Management reporting requirements. Per the Severe Sepsis reporting requirements, hospitals are to report on, “Percent compliance with elements of the Sepsis Resuscitation Bundle…as measured by percent of hospitalization with sepsis, severe sepsis or septic shock and/or infection and organ dysfunction where targeted elements of the Sepsis Resuscitation Bundle were completed. The four elements of the resuscitation bundle for which there is the most evidence of reliability and efficacy: i. Serum lactate measured, ii. Blood cultures obtained prior to antibiotic administration, iii. Improve time to broad-spectrum antibiotics: within 3 hours for ED admissions and one hour for non-ED ICU admissions iv. In the event of hypotension and/or lactate>4mmol/L (36mg/dl): 1. Deliver an initial minimum of 20 ml/kg of crystalloid (or colloid equivalent) 2. Apply vasopressors for hypotension not responding to initial fluid resuscitation to maintain mean arterial pressure (MAP) > 65mm Hg.” As such, ARMC requests to modify its plan to clarify that ARMC will only be reporting the key measures associated with the Sepsis Resuscitation Bundle and Sepsis Mortality, as outlined in the technical specifications. In line with this clarification, ARMC would also like to further define the statement “all patients diagnosed with septic shock syndrome and/or sepsis” to include ONLY those adult (18 and over) patients diagnosed with septic shock syndrome and/or sepsis”, as this not only reflects the technical specifications, but guidelines for pediatric and neonatal sepsis resuscitation are different from those defined for adults. Modifying ARMC’s DSRIP Plan to discuss only the key measures listed in the specifications manual does not change the focus of ARMC’s Severe Sepsis Detection and Management project; it simply clarifies and emphasizes the alignment of reporting requirements with the technical specifications for Severe Sepsis.
* In preparing for meeting the goals and milestones of Category 4’s, Central Line-Associated Bloodstream Infection (CLABSI) Prevention project, ARMC’s Infection Control Committee met to review the CLABSI Prevention project and necessary reporting requirements. The Committee noted that ARMC’s original plan for Category 4 included reporting the CLIP requirements on *all* of the patients admitted to the hospital, which is not in line with the technical specifications of the Central Line Insertion Practice (CLIP) reporting requirements. Per the CLIP reporting requirements, hospitals are to report on, “patients with central lines that occur in all intensive care units (ICUs) including adult, pediatric and NICUs within the facility…” As such, ARMC requests to modify its original plan to include only reporting on ICU patients for the CLABSI Prevention project. Modifying the reporting requirements to include only ICU patients does not change the focus of ARMC’s CLABSI Prevention project; simply it aligns the project’s reporting requirements with the technical specifications for CLIP.
* In preparation for meeting the goals and milestones of Category 4’s, Hospital-Acquired Pressure Ulcer (HAPU) Prevention project, ARMC’s Patient Safety Committee met to review the HAPU project and necessary reporting requirements. The Committee noted that ARMC’s original plan for Category 4 included assessing and surveying all patients who are admitted to the hospital. This modification requests “all” to be defined by the 1115 Waiver Terms and Conditions, Attachment Q, Category 4 as, “all adult patients”, excluding:
  + Patients under 16 years of age
  + Patients who are medically unstable at the time of the study for whom assessment would be contraindicated at the time of the study (e.g. unstable blood pressure, uncontrolled pain, or fracture awaiting repair)
  + Patients who are actively dying and pressure ulcer prevention is no longer a treatment goal
  + Patients not on the unit during the survey (e.g. survey, x-ray, physical therapy, etc.)
  + Patients who refuse to be assessed
* In preparation for meeting the goals and milestones of Category 4’s Stroke Management project, ARMC’s Stroke Committee met to review the Stroke Management project and necessary reporting requirements. The Committee noted that ARMC’s original plan for Category 4 included, obtaining a baseline for cost of care for inpatient case. Per the California 1115 Waiver Technical Specifications for Stroke Management, hospitals are not required to complete a baseline cost analysis for inpatient cases. This plan modification requests to remove this requirement in order to align with the Terms and Conditions of the California 1115 Waiver.

All requested changes are in “red” font; additions are underlined, deletions are struck-through. Additionally, there are no proposed changes to the dollar allocations for any Category 4 projects. The dollars for this project remain the same as submitted on February 25, 2011. The Delivery System Reform Incentive Payments Allocation Table submitted on February 25, 2011 is attached at the end of this request for plan modification.

**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.

The following will also be implemented by ARMC over the course of improvements, but are not currently key measures selected for reporting:

Additionally, 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.
* 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 adult (18 and over) 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 trended by the Department/Provider. Findings will be sent to the Department Chairman and reported to the hospital-wide Quality Management Committee 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**

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| **Improve Severe Sepsis Detection and Management (required)** | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| 1. **Begin to collect data on Sepsis Resuscitation Bundle to SNI for purposes of establishing the baseline and setting benchmarks.** | 1. **Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 interventions).** 2. **Hire Staff Analyst to perform report writing data collection and analysis (shared amongst all 4 interventions.** 3. **Join the Surviving Sepsis Campaign to learn and share best practices related to improving severe sepsis and septic shock detection and management.** 4. **Train clinical staff on the Sepsis Bundle Element and Protocols, Checklists and Screening Tools (maintain on-going training education).** 5. **Develop Intensive Care Unit policies and procedures to support compliance with the Sepsis Resuscitation Bundle.** 6. **Implement the Sepsis Resuscitation Bundle.** 7. **Report at least 6 months of data collection on Sepsis Resuscitation Bundle to SNI for purposes of establishing the baseline and setting benchmarks.** 8. **Report the Sepsis Resuscitation Bundle results to the State.** | 1. **Achieve X% compliance with Sepsis Resuscitation Bundle, where “X” will be determined in Year 2 based on baseline data.** 2. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 3. **Report Sepsis Resuscitation Bundle and Sepsis Mortality results to the State.** 4. **Initiate LEAN methodologies to assist in identifying any barriers related to compliance with IHI Sepsis Resuscitation Bundle elements.** | 1. **Achieve X% compliance with Sepsis Resuscitation Bundle, where “X” will be determined in Year 2 based on baseline data.** 2. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 3. **Report results to the State.** | 1. **Achieve X% compliance with Sepsis Resuscitation Bundle, where “X” will be determined in Year 2 based on baseline data.** 2. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 3. **Report results to the State.** |

**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, Intensivest, 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 Intensive Care services

To address this challenge, ARMC will implement the Central Line Bundle in all Intensive Care Units (ICUs) ~~departments~~ that currently insert and/or manage Central Line Catheters. Specific areas include the Adult and Neonatal ICUs. ~~Emergency Department (ED), Operating Room, Post Anesthesia Care Unit, and all in-patient units~~ All Physicians and Nursing staff who treat patients in the ICUs 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 Department to perform Hand Hygiene surveillance in their respective departments. All employees are oriented to hand hygiene upon hire and re-educated annually though 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.
* 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**

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| **Central Line-Associated Bloodstream Infection (CLABSI) Prevention (required)** | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| 1. **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.** | 1. **Train clinical staff to document line day during rounds as part of daily goal sheets.** 2. **Hire Staff Analyst to perform report writing, data collection and analysis (shared amongst all 4 interventions).** 3. **Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 interventions).** 4. **Train clinical staff on the Central Line Bundle (maintain on-going training education).** 5. **Obtain a baseline 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.** 6. **Implement the Central Line Insertion Practices (CLIP).** 7. **Report at least 6 months of data collection on CLIP to SNI for purposes of establishing the baseline and setting benchmarks.** 8. **Report at least 6 months of data collection on CLABSI to SNI for purposes of establishing the baseline and setting benchmarks.** 9. **Report CLIP results to the State.** | 1. **Achieve X% compliance with CLIP, where “X” will be determined in Year 2 based on baseline data.** 2. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 3. **Report CLIP and CLABSI results to the State.** | 1. **Achieve X% compliance with CLIP, where “X” will be determined in Year 2 based on baseline data.** 2. **Reduce Central Line Bloodstream Infections by X%, where “X” will be determined in Year 2 based on baseline data.** 3. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 4. **Report CLIP and CLABSI results to the State.** | 1. **Achieve X% compliance with CLIP, where “X” will be determined in Year 2 based on baseline data.** 2. **Reduce Central Line Bloodstream Infections by X%, where “X” will be determined in Year 2 based on baseline data.** 3. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 4. **Report CLIP and CLABSI results to the State.** |

**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
  + - 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 al 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. ARMC will define “all patients” per the 1115 Waiver Terms and Conditions, Attachment Q, Category 4, as “all adult patients”, excluding:

* + Patients under 16 years of age
  + Patients who are medically unstable at the time of the study for whom assessment would be contraindicated at the time of the study (e.g. unstable blood pressure, uncontrolled pain, or fracture awaiting repair)
  + Patients who are actively dying and pressure ulcer prevention is no longer a treatment goal
  + Patients not on the unit during the survey (e.g. survey, x-ray, physical therapy, etc.)
  + Patients who refuse to be assessed

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?
* 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 breakdown
* Report findings to Pressure Ulcer Multi-Disciplinary Committee 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
* 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**

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| --- | --- | --- | --- | --- |
| **Hospital-Acquired Pressure Ulcer Prevention** | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| 1. **Develop a plan to establish a baseline on Hospital Acquired Pressure Ulcer Incidence and Prevalence.** | 1. **Train physicians, residents, nursing staff and allied health professionals on the Pressure Ulcer Prevention Bundle (maintain on-going training education).** 2. **Hire Staff Analyst to perform report writing data collection and analysis (shared amongst all 4 interventions).** 3. **Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 interventions).** 4. **Establish pressure ulcer baseline data.** 5. **Implement hourly rounding by nursing staff in all adult inpatient units.** 6. **Join Cal-Noc to report Pressure Ulcer Incidence and Prevalence.** 7. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 8. **Report hospital-acquired pressure ulcer prevalence results to the State.** | 1. **Utilize LEAN methodologies to assist in identifying any barriers related to compliance with IHI Pressure Ulcer Bundle elements.** 2. **Achieve hospital-acquired pressure ulcer prevalence of less than *4.2* %.** 3. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 4. **Report hospital-acquired pressure ulcer prevalence results to the State.** | 1. **Achieve hospital-acquired pressure ulcer prevalence of less than 1*.7*%.** 2. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 3. **Report hospital-acquired pressure ulcer prevalence results to the State.** | 1. **Achieve hospital-acquired pressure ulcer prevalence of less than 1.1%.** 2. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 3. **Report hospital-acquired pressure ulcer prevalence results to the State.** |

**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.
* 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 > 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; and (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** |
| 1. **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.** | 1. **Hire Staff Analyst to perform report writing data collection and analysis (shared amongst all 4 interventions)** 2. **Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 interventions).** 3. **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.** 4. **Report the data to the State.** | 1. **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.** 2. **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.** 3. **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.** 4. **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.** 5. **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.** 6. **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 follow-up after discharge, and medications prescribed at discharge by X, where “X” will be determined in Year 2 based on baseline data.** 7. **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.** 8. **Utilize LEAN methodologies to assist in identifying any barriers related to compliance with IHI Stroke Management Bundles.** 9. **Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.** 10. **Report the 7 process measures and stroke mortality rate results to the State.** | 1. **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.** 2. **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.** 3. **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.** 4. **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.** 5. **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.** 6. **Increase the rate of patients with ischemic or 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data.** 2. **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.** 3. **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.** 4. **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.** 5. **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.** 6. **Increase the 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**Allocation Table for Categories 1, 2, and 4 Plans**

**Submitted to California Department of Health Care Services and Centers for Medicare and Medicaid Services of February 25, 2011**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ARMC | DY 6 | DY 7 | DY 8 | DY 9 | DY 10 |
| Category 1 | | | | | |
| Expand Primary Care | $6,060,207 | $5,555,641 | $4,502,205 | $1,953,778 | $784,169 |
| Increase Training of Primary Care Workforce | $6,060,207 | $5,555,641 | $4,502,205 | $1,953,778 | $784,169 |
| Implement and Utilize Disease Management Registry Functionality | $6,060,207 | $5,555,640 | $4,502,205 | $1,953,778 | $784,170 |
| Expand Specialty Care | $6,060,206 | $5,555,641 | $4,502,206 | $1,953,778 | $784,169 |
| Category 2 | | | | | |
| Expand Medical Homes | $8,334,391 | $7,640,479 | $6,191,726 | $2,686,963 | $1,078,441 |
| Expand Chronic Care Models | $8,334,391 | $7,640,479 | $6,191,726 | $2,686,963 | $1,078,441 |
| Redesign Primary Care | $8,334,391 | $7,640,479 | $6,191,727 | $2,686,962 | $1,078,441 |
| Category 4 | | | | | |
| Sepsis | $1,089,000 | $2,178,000 | $4,356,000 | $6,534,000 | $7,623,000 |
| CLABSI | $1,089,000 | $2,178,000 | $4,356,000 | $6,534,000 | $7,623,000 |
| Pressure Ulcers | $1,089,000 | $2,178,000 | $4,356,000 | $6,534,000 | $7,623,000 |
| Stroke Management | $1,089,000 | $2,178,000 | $4,356,000 | $6,534,000 | $7,623,000 |