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Clinical Guidelines and Performance Measurement

Clinical guidelines sets (CGS) represent clinical measures that are used to improve quality of care. These measures focus on conditions and procedures that are normally treated and measured within an inpatient hospital setting. Guidelines play an important role in improving quality of patient outcomes. Proper guidelines are based on current evidence base medicine to assist healthcare providers and patients to make decisions for specific clinical circumstances. Following are three guidelines and their respective performance measures to incorporate into a Clinical Decision Support System (CDSS).

Heart Failure (HF)

Guideline Overview

The HF guidelines set is consists of three sub measures – discharge instructions (HF-1), evaluation of left ventricular function (HF-2), Angiotensin converting enzyme inhibitors or angiotensin receptor blockers for LVSD (HF-3). These three active set measures all seek to improve the quality of care.

The first set seeks improvement through more consistent dispersal of educational materials to the patient to ensure for better adherence to exercise, diet and medication. The second and third set measures seek to improve proper diagnosis of left ventricular systolic dysfunctions through consistent screening before, during or after an inpatient episode for HF to prescribe the appropriate medication to improve morbidity and mortality rates. All three feed from each other and together offer the potential for improved quality for HF patients (The Joint Commission, 2011).

For successful outcome to be realized, all of these measurements require process improvements as all set under the guideline fall under the category of being a process. Following the recommended appraisals by the AGREE, with four of the six domain areas considered, this guideline indeed measures strongly as a high quality measure that would be recommended for use.

Performance Measurement

All set measures under the HF guidelines are endorsed by the National Quality Forum (NQF). In examining HF-1, the Numerator accounts for the patients who received documentation concerning written discharge instructions and/or educational materials that cover six points of applicable information of their care, treatment plans and warning symptoms. The Denominator represents the total number of HF patients that were discharged. Considered inclusionary and exclusionary criteria exist to properly classify candidates within the considered populations for both numerator and denominator along with specific data elements to be considered which guide in determining eligibility for inclusion or exclusion for consideration. Considering both elements, the product of the two represents the measured rate where a higher number signifies improvement (The Joint Commission, 2011).

The challenges in accurately measuring HF-1 are in the data inputs. Since measurement is dependent on procedural action, it's best executed through required workflows during a patient encounter. Accuracy is also dependent on clinical coding practices, so quality assurance around these practice would ensure for best results.

In conclusion, the HF clinical guidelines set are in accordance with AGREE principles and good candidates for CDSS.

Children Asthma Care (CAC)

The CAC guidelines set is made up of three set measures which include Relievers for Inpatient Asthma (CAC-1), Systemic corticosteroids for inpatient asthma (CAC-2) and home management plan of care (HMPC) document given to patient (CAC-3). CAC-1 and CAC-2 consider an additional four considerations under their respective measure set and relate to age categorization levels within the pediatric populations considered. All three measure set seek to attain improvement through increased rates.

As one of the most prevalent chronic disease and causes for morbidity among children, the CAC guidelines sets seek overall to ensure for consistent delivery of treatment and relief to children that suffer. Improvement also seeks to more consistently educate children and their parents to more effectively treat the condition and where possible prevent it. With measured improvement from the guideline, healthcare spending as it relates to CAC could be significantly reduced and

perhaps could be measured separately through economic indicators (The joint commission, 2011). The CGS for CAC are concise with robust criteria instructions for uniform application and as such rate is high when considered under AGREE II principles and would be highly recommended for use.

Performance Measurement

In examining CAC closer, the evaluation consider a Numerator Statement which includes all Pediatric asthma inpatients' who received relievers during hospitalization. The Denominator Statement considers all pediatric asthma inpatients who were discharged with the primary diagnosis of asthma. Together, the two factors provide the overall percentage measure rate. Inclusionary and exclusionary criteria exist which consider relevant data elements to determine the ADT dates, birthdates, reasons for not administering relievers, diagnosis codes and clinical trial indicator. All of the considered data elements help to determine eligibility for consideration in the evaluated populations (The Joint Commission, 2011). The appropriate place of evaluation for CAC occurs at discharge and is classified as a process measure.

The CAC clinical guideline set indeed solidify based on AGREE principles and well suited for use in a CDSS with considerations. Due to the sub classification of age groups and clinical code assignment, accuracy in the data collection stage of the inpatient episode are of critical importance to automate and be able to produce accurate measure results. These results can be used for accountability and performance measurements for other healthcare systems.

Pneumonia (PN)

According to the joint commission, the PN guideline set is made up of five set measures which include:

PN-3a: Blood cultures performed within 24 hours prior to 24 hours after hospital arrival for patients who were transferred or admitted to the ICU within 24 hours of hospital arrival.

PN-3b: Blood cultures performed in the ED prior to initial antibiotic received in hospital.

PN-6: Initial antibiotic selection for CAP in immunocompetent patient

PN-6a: Initial antibiotic selection for CAP in immunocompetent patient – ICU patient

PN-6b: Initial antibiotic selection for CAP in immunocompetent patient – Non ICU patient

Both PN-3a and PN-3b are concerned with measurement when blood cultures are performed. Pn-3a measures those patients who receive care in the ICU and is performed 24 hours before or after their admittance. Pn-3b is pertinent when an antibiotic is administered in the hospital and during the ED visit. All variants of PN-6 measure performance on the administration of initial antibiotic regiments to immunocompetent patients with community-acquired pneumonia (CAP) within the first 24 hours and in accordance to established guidelines (The joint commission, 2011).

The criteria and consideration for the CGS for PN are robust and exhaustive. It is a high quality measure against all principles considered by the AGREE II instrument.

Performance Measurement

All five of the set measures under the clinical guideline set for PN are endorsed by NQF. In examining PN-6 without its parts closer, the evaluation considers a Numerator Statement which includes Pneumonia patients who received antibiotics consistent with current guidelines. The Denominator considers all Pneumonia patients with the distinction of age being over eighteen. The two produce a rate which represents the performance measure. Together, the two factors provide the overall percentage measure rate. Accurate implementation of the measure requires strict adherence of screening to ensure that the exhaustive exclusionary criteria is followed. This would probably be one of the biggest challenges in successfully implementing the measure into a CDSS. Data elements need to be identified and mined from the administrative data and medical record. Improved accuracy will result from electronic sources rather than manual entries (The Joint Commission, 2011). Considering other measures, PN is reliant upon correct medical coding practices and QA measures around this process will also help.

The appropriate place of evaluation for PN occurs at discharge and is classified as a process measure. The PN clinical guideline set seems to be relevant based on AGREE principles and well suited for use in a CDSS with considerations to ensure accuracy.

There are many benefits to clinical guideline sets and performance measures and the thoughtful research based approaches that go into creating them. Their evidence based approach offers accurate means of measuring progress. All that were considered and examined revolve around process to carry them out. As such, they all contain human interaction and prone to error.

Using instruments such as AGREE II help to ensure that the measures can be carried out through their stringent review of the guideline to implement them into CDSS to improve quality of care.

References:

The Joint Commission. (2011, September 2). Specifications Manual for National Hospital Inpatient Quality Measures.

Agency for Healthcare Research and Quality (2014). Retrieved from http://www.qualitymeasures.ahrg.gov/browse/nqf-endorsed.aspx

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