Maryland
Hospital Association

REQUEST FOR COMMENT:

Recommendations of the Respiratory Workgroup

The Maryland Hospital Association is seeking comment on clinical criteria used to define pneumonia, aspiration pneumonia, and respiratory failure. Medical and quality leadership are asked to review this document with appropriate staff and stakeholders. It is the workgroup's goal that the recommended criteria be considered by each hospital's Medical Executive Committee for adoption. Please submit your feedback to Justin Ziombra at jziombra@mhaonline.org by Tuesday, April 14th.

Background

The 30% reduction in complications required under the new hospital waiver and the annual targets outlined within the Maryland Hospital Acquired Condition (MHAC) payment policy[1] are based on 65 Potentially Preventable Complications (PPCs).[2] Because PPCs are based on administrative data, the assignment of a PPC is derived from clinical documentation and coding. While hospitals have dedicated significant resources to improving clinical documentation and coding, it has become apparent that variability in the criteria used to define the occurrence of specific clinical conditions across hospitals is hindering our ability to accurately quantify complications and collaborate to prevent them. The premise of this work is that use of consistent criteria to define specific conditions will provide the necessary 'level setting' from which to truly measure performance and support collaboration on quality improvement opportunities. For these reasons, hospital leaders requested that MHA convene a group of clinical and quality representatives to consider criteria currently used across hospitals, review evidence, relevant literature and guidelines, and work to develop consensus definitions.[3]

[1] The statewide reduction target for 2015 is 7% comparing FY2014 to CY2015 risk adjusted PPC rates; The proposed amount at risk for the MHAC program is 3% of inpatient revenue

[2] 3M Health Information Systems developed PPCs; The PPC software relies on present on admission indicators from administrative data to calculate the actual versus expected number of complications for each hospital

[3] This activity was approved by MHA's Council on Clinical Quality Issues as well as the Executive Committee

Process

Informed by data analyses of PPC performance, hospital medical and quality leaders identified a subset of diagnoses that were widely agreed upon to have varied diagnostic and documentation patterns. The diagnoses were then prioritized based on volume and variability in performance and grouped into four categories: urinary tract infections, obstetric hemorrhages and lacerations, pneumonia/respiratory failure and acute renal failure/kidney injury. A workgroup was convened around each of the four categories and was comprised of physicians, non-physician clinicians, and documentation and coding professionals from a cross-section of Maryland's community and teaching hospitals and health systems.[4] Over a series of meetings each workgroup was charged with developing a proposed definition informed by published criteria and existing practice. Hospitals were engaged in the process through submission of hospital-based definitions as well as offering comment on the workgroups' proposed definitions. The workgroups' recommendations account for inpatient coding guidelines[5] and apply to any occurrence of the diagnosis, not only scenarios that would trigger a PPC under the MHAC policy.

Each workgroup's proposed criterion are intended to serve as a guideline for provider and coder consideration and are not intended to restrict provider judgment when diagnosing a patient or alter coder assignment based on established guidelines. This clinical definition will not supplant the need for providers to clearly document a diagnosis. Provider documentation will continue to be the basis for inpatient coding of diagnoses as is required by coding guidelines. Coders will continue to use provider documentation as the source of the coded diagnosis. The workgroup encourages hospitals to utilize approved definitions to guide coders and clinical documentation specialists to query physicians when the documented diagnoses lack the respective supporting clinical indicators.

[4] Workgroup meeting material and rosters available at http://www.mhaonline.org/quality

[5] ICD-9 Official Coding Guidelines, approved by four organization that make up the Cooperating Parties for the ICD-9-CM: the American Hospital Association (AHA), the American Health Information Management Association (AHIMA), the Centers for Medicare and Medicaid Services (CMS) and the National Center for Health Statistics

Respiratory Workgroup Deliberations

To arrive at a proposed definition, the workgroup, over a series of meetings, based their deliberations on the following:

- *Current practice at Maryland hospitals*
  - Medical and Quality leads at all Maryland acute care hospitals were asked to submit internal policies or guidelines used at their facilities to define pneumonia, aspiration pneumonia and respiratory failure
- *Relevant literature and published guidelines including, but not limited to, the Centers for Disease Control and Prevention's National Healthcare Safety Network (CDC NHSN)*
- *Expertise of workgroup members*

The workgroups recognize that any definition or guideline will not apply to every patient, and therefore each hospital and/or provider is expected to use appropriate professional judgment when applying this guideline. While the workgroup strongly encourages the use of standardized criteria within and across hospitals, any guideline that is adopted will not negate the use of the provider's documentation, which is the basis for inpatient coding.

Proposed Defining Criteria for Pneumonia

In forming defining criteria for pneumonia, workgroup members considered the *Pneumonia (Ventilator-associated [VAP] and non-ventilator-associated Pneumonia [PNEU]) Event* criteria developed by CDC NHSN.[6] Members had reservations about wholly endorsing these algorithms as the workgroup agreed that it would be more appropriate to form a single set of criteria to broadly define pneumonia, as opposed to creating multiple definitions for specific etiologies (i.e., viral versus bacterial). The workgroup's proposed definition for pneumonia is:

[6] CDC NHSN "Pneumonia (Ventilator-associated [VAP] and non-ventilator-associated Pneumonia [PNEU]) Event," January 2015

Diagnostic Criteria For Pneumonia	
Patient Must Meet One Element From A, One Element From B, and C.	
A*	**Signs, Symptoms and Lab Values**
-Temperature ≥ 38 or ≤ 36 -Leukopenia (<4000 WBC/mm3) or leukocytosis (>12,000 WBC/mm3)	
And	
B*	
-Purulent sputum -Cough -Dyspnea -Tachypnea -Supportive findings physical exam -Worsening gas exchange	
And	
C**	**Imaging**
-Supportive imaging	

*When other attributable causes have been ruled out.

**'Supportive Imaging' is defined as radiographic evidence of persistent infiltrates. The workgroup notes that initial chest X-rays can sometimes fail to show evidence of pneumonia due to such conditions as dehydration, however subsequent chest X-rays may indicate its presence.

Proposed Defining Criteria for Aspiration Pneumonia

Workgroup members noted that there is no single, validated and comprehensive definition for aspiration pneumonia that could be readily endorsed. The workgroup also noted that aspiration pneumonia is sometimes diagnosed when in fact the patient may have a different and more transient condition such as laryngotracheobronchitis, or other condition such as chemical pneumonitis.[7] To distinguish between aspiration pneumonia and other conditions, the workgroup concluded that a time element should be considered. A true case of aspiration pneumonia would meet the definition of 'Pneumonia' detailed above, with the requirement that signs and symptoms (i.e.

[7] Xiaowen H. Joyce S. et al. Aspiration-Related Pulmonary Syndromes *Chest* 147:3 818-819

elements from ‘A’ and ‘B’) persist for longer than 48 hours and are supported through radiographic imaging (‘C’). Workgroup members also noted that an aspiration event is rarely witnessed.[8] Therefore, the group agreed that a reasonable suspicion that an aspiration event occurred prior to the pneumonia sufficiently qualifies for the definitional criteria of aspiration pneumonia.

The workgroup’s proposed definition for aspiration pneumonia is:

Diagnostic Criteria For Aspiration Pneumonia
For patients where there is a Reasonable Suspicion of Aspiration, as determined by the provider, a case of Pneumonia (as defined in the ‘Pneumonia’ Criteria Above) in which the Signs and Symptoms last longer than 48 hours after a suspected or witnessed aspiration event

Respiratory Failure

The workgroup concluded that an appropriate definition for respiratory failure for use in hospitals should be more holistic than customary definitions that rely principally on lab results and pulse oximetry to define respiratory failure. The group sought to craft a relevant definition that provides clinicians with a useful prospective tool, and noted that defining respiratory failure principally through Arterial Blood Gas (ABG) results is more appropriate as a retrospective screen for chart reviews and epidemiological surveillance. Relying principally on blood gas values is also problematic because:

1) Many patients do not receive routine ABGs
2) Some patients, particularly those in post-operative recovery, may have an abnormal ABG, however the result often normalizes in a short period of time and is not necessarily indicative of respiratory failure
3) Some patients with chronic respiratory conditions have baseline ABGs that are abnormal

The workgroup agreed that the defining criteria for respiratory failure should include lab values and other signs and symptoms, and should also incorporate the intervention

[8] Xiawon H. et al, 818-819

required as this is an important consideration in defining respiratory failure and better captures the resource utilization required to treat the condition.

The workgroup sought to create a comprehensive definition for respiratory failure that would identify an instance of the condition regardless of etiology, and therefore the group refrained from creating multiple definitions that distinguish by subtype (e.g. hypercapnic respiratory failure). The exception is post-operative respiratory failure, for which the workgroup concluded that the length of time mechanical ventilation is required after surgery should be considered (see below).

The workgroup's definition of respiratory failure is:

Diagnostic Criteria For Respiratory Failure	
Patient Must Meet One Element From A, One Element From B, and One Element From C.	
A	**Signs, Symptoms and Lab Values**
-Altered mental status -Tachypnea or lowered respiratory rate -Dyspnea or increased work of breathing -Hemodynamic instability	
And	
B*	
-SpO2 < 92% or a dependence on at least 4L/min of O2 through nasal cannula to prevent SpO2 from dropping below 92% and further decompensation -Acute respiratory acidosis: either a pH<7.35 from an arterial sample or a pH<7.3 from a venous sample	
And	
C	**Intervention**
-The unanticipated need for an intervention to support ventilation and/or gas exchange that is physiologically required to prevent decompensation; These interventions may include the use of a mechanical ventilator, BiPAP, CPAP, High Flow Therapy, Non-Rebreather Mask or Nasal Cannula delivering at least 4L/min of O2	

*Assuming these findings are deviations from the patient's baseline

The presence of an element from Section A or Section B before treatment (Section C) is initiated, can be considered to be symptomatic of respiratory failure.

Post-Operative Respiratory Failure

The workgroup noted that many patients are expected to remain on a ventilator following surgery. For many patients, the need for mechanical ventilation during the recovery period is expected and should not be considered respiratory failure. Workgroup members concluded that one important distinguishing characteristic between a common course of recovery and an unexpected case of respiratory failure is time. The workgroup therefore recommends that patients who remain intubated for 48 hours or less, or for an expected period of time relative to the type of surgery, should not be diagnosed as having respiratory failure. Some procedures, such as open abdominal surgeries, may require an expected post-operative ventilator period of greater than 48 hours. Providers are encouraged to clearly document the expected ventilator-assist period and, once the patient is extubated, document if the period was expected or unexpected.

Instructions for Submitting Comments

Please utilize the 'track changes' function to make line-item comments or suggestions. Additionally, the 'General Comments' section on the next page can be used to write longer notes and provide overall feedback. Please refer to a line number when writing comments. The workgroup is seeking both clinical feedback as well as comments that address feasibility or other practical considerations regarding implementation. Please submit your feedback to Justin Ziombra at jziombra@mhaonline.org by **Tuesday, April 14th.**

General Comments