

Washington State Hospital Association

2017

Report Writing Specifications Antimicrobial Stewardship



**Partnership
for Patients**



Report Writing Specifications

Antimicrobial Stewardship

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Project Leads:

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Terms Used in this Document

Pseudocode: A pseudocode is an algorithm written to facilitate the report writing process and data abstraction from the electronic health record (EHR). This type of code is intended to be read by humans and not by a computer. Report writers are able to take the information provided in a pseudocode and translate it into code specific to the EHR used at their hospital.

Clinical Translation: A clinical translation column has been included to describe, in clinical terms, the goal for each section of the pseudocode.

Quality Benchmarking System (QBS): Secure, web-based application that allows hospitals to input data and then track, compare, and analyze the data for use in quality improvement. QBS is brought to you at no charge by the Washington State Hospital Association's Patient Safety Program. Hospitals have the ability to share their data with other hospitals to aid their quality improvement efforts. As improvement projects are implemented, users can focus on whether these interventions are truly making a difference. QBS helps with data display, analysis, and timely dissemination, and is a powerful tool for those who work with quality data.

Background

Antibiotics revolutionized the practice of medicine by providing a rapid cure to many illnesses that were once fatal. But those days may soon be gone. Overuse and misuse of antibiotics has fueled the emergence of antibiotic-resistant bacteria. Furthermore, 20-50% of all antibiotics prescribed in U.S. acute care hospitals are either unnecessary or inappropriate. The collection and reporting of data will help Washington in the statewide efforts of appropriate and effective antibiotic utilization, as well as prevent the emergence of drug-resistant organisms such as *Clostridium difficile*.

Goal

Hospitals will:

1. Achieve [Tier 1](#)¹ or beyond Implementation of Antimicrobial Stewardship
2. Collect and report ASP data for specific antimicrobials and
3. Reduce *Clostridium* difficile by 10% by December 2017.

WSHA is working with hospitals to achieve these goals. All related Antibiotic Stewardship materials can be found on the [Antimicrobial Stewardship Page of WSHA's Website](#).²

Context and Limitations

The WSHA ASP Advisory Group reviewed data submission rates, and shared concerns surrounding the time it takes to have reports written at hospitals.

Due to significant challenges with ASP report writing and data mining for hospitals, the Advisory Group recommended convening a group of report writers and clinicians to work together on developing common report writing language for the ASP measure. This would not only save time at each of the hospitals, it would also increase standardization in the region and reduce barriers to obtaining data. This document contains the efforts of the Report Writing subgroup. Most of the hospitals involved in the Report Writing group use Epic as their electronic health record (EHR). The group has taken strides to write the pseudocode in a way that would be useful to all report writers regardless of EHR used.

The pseudocode presented in this document are intended to be used by hospital report writers, and clinical staff who request and review the data.

For more information about inclusion criteria, exclusion criteria and data submission for these measures, please refer to corresponding [ASP Measure Definition Sheet](#)³.

¹ http://www.wsha.org/wp-content/uploads/ASP_Tiers.pdf

² <http://www.wsha.org/quality-safety/projects/medication/antimicrobial-stewardship/>

³ http://www.wsha.org/wp-content/uploads/MeasDefSheet_ASP.pdf

AMS Pseudocode	Clinical Translation
<p>Patients with Carbapenem Flag IF medication = Carbapenem⁶ AND IF MAR action = Given*</p> <p>THEN 'Y' ELSE 'N'</p> <p>Patients with Broad Spectrum Penicillin Flag IF medication = Penicillin⁶ AND IF MAR action = Given*</p> <p>THEN 'Y' ELSE 'N'</p> <p>Patients with Broad Spectrum Cephalosporin Flag IF medication = Cephalosporin⁶ AND IF MAR action = Given*</p> <p>THEN 'Y' ELSE 'N'</p>	<p>*Use terms specific for MAR like: Given, Given During Downtime, Override pull</p>
<p>2. Identify Exclusion Criteria Flags</p>	
<p>Exclude antibiotic doses administered in an Emergency Department Location Flag If patient meets inclusion criteria AND patient location at time of antibiotic administration = EMERGENCY THEN 'Y' ELSE 'N'</p>	<p>Exclude any doses of antibiotic(s) received in an ED location (these doses are not included in the 'Day of Therapy' count)</p>
<p>Exclude "Well" Newborns If patient location at time of antibiotic administration = <i>non-critical</i> newborn unit (i.e <u>any area other than</u> PICU or NICU) THEN 'Y' ELSE 'N'</p>	<p>Exclude healthy newborns from data set (include NICU & PICU patients)</p>

⁶ See Table 1 (List of Specific Antimicrobials)

AMS Pseudocode	Clinical Translation
<p>Exclude antibiotic doses administered in an Ambulatory Surgery location Flag</p> <p>If patient meets inclusion criteria AND patient location at time of antibiotic administration = AMBULATORY THEN 'Y' EISE 'N'</p> <p>Exclude antibiotic doses administered pre-operatively as prophylaxis</p> <p>If patient meets inclusion criteria AND patient location at time of antibiotic administration = PACU, OR, Procedural THEN 'Y' EISE 'N'</p>	<p>Exclude any doses of antibiotic(s) received in an Ambulatory area or pre/intra-operative area (these doses are not included in the 'Day of Therapy' count)</p>
<p>3. Define Numerator</p> <p>Numerator Count</p> <p>Count distinct encounters (not doses) where:</p> <p> Patient Type = inpatient, observation, rehab AND Antibiotic Flag = 1 (any of the target antibiotics) AND ED Flag = N AND Newborn Flag = N AND Ambulatory Flag = N AND Procedural Area Flag = N</p>	<p>Compile Numerator:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Include patients cared for in an inpatient area (including observation and rehab) <input type="checkbox"/> Include patients given at least one dose of a target antimicrobial (IV or PO) <input type="checkbox"/> Exclude doses given in ED <input type="checkbox"/> Exclude doses given to healthy newborns <input type="checkbox"/> Exclude doses given in ambulatory and procedural areas
<p>4. Calculate Day of Therapy Count (for Numerator)</p>	
<p>For each target antimicrobial</p> <p>For each distinct encounter (meeting inclusion/exclusion criteria):</p> <p> FIRST MAR action "GIVEN" per 24 hour time frame: SCORE = 1</p> <p> ALL other MAR actions within the same calendar day: SCORE = 0</p>	<p>For each patient, any dose of a target antimicrobial received during a calendar day represents 1 DOT. This recommendation is consistent with the NHSN measure definition</p>
<p>48 Hour Dosing Intervals*:</p> <p>"For medications with 48 hour dosing intervals, a day of therapy will be documented only on a calendar day in which the antibiotic was administered (for e.g. levofloxacin)."</p>	<p>*This recommendation is consistent with the NHSN measure definition</p>
<p>Repeat for all target antimicrobials for each distinct encounter meeting the inclusion/exclusion criteria</p> <p>DOT per target antimicrobial =</p> <p> SUM DOTs (for each distinct encounter)</p>	<p>For each target antimicrobial, SUM of all DOTs per specified time frame = DOT count</p>

AMS Pseudocode	Clinical Translation
<p>5. Define Denominator Count total facility "Patient Days" : Number of patients who were present for any portion of each day of a calendar month at a facility-wide, acute inpatient location Include: observation and rehab patients Exclude: all "Well" Newborn locations</p>	Compile Denominator: Total number of facility-wide acute inpatient days per month

TABLE 1: Specific Antimicrobials

Agent Class	Antibiotics
Penicillins	Piperacillin/Tazobactam (Zosyn) Ticarcillin/Clavulanate (Timentin) Ampicillin/Sulbactam (Unasyn) Amoxicillin/Clavulanate (Augmentin)
Cephalosporins	Ceftriaxone (Rocephin) Cefotaxime (Claforan) Ceftazidime (Fortaz) Cefepime (Maxipime) Ceftaroline (Teflaro)
Carbapenems	Meropenem (Merrem) Imipenem/cilistatin (Primaxin) Doripenem (Doribax) Ertapenem (Invanz)
Fluoroquinolones	Ciprofloxacin (Cipro) Levofloxacin (Levaquin) Moxifloxacin (Avelox)