FY21 Phys Comp 156: Intraop Antibiotic Redosing Quality Measure

Dept. of Anesthesiology – BSW Central TX

Revised 11/05/2020: BBVacula

**Title**: 156: Intraoperative Antibiotic Redosing

**Description**:

Percentage of patients, aged 2 years and older, who received preoperative antibiotic prophylaxis within 60 minutes prior to incision and undergo a procedure > 2 hours who received intraoperative antibiotic redosing at a maximum interval of two half-lives of the selected prophylactic antibiotic until surgery end time.

**Type**: Group process measure by region

**Denominator**:

All patients, aged 2 years and older, who received preoperative antibiotic prophylaxis within 60 minutes prior to incision and undergo a procedure > 2 hours long.

For the purpose of this measure, preoperative antibiotic prophylaxis includes prophylaxis with the following antimicrobial agents:

* Ampicillin-sulbactam
* Ampicillin
* Aztreonam
* Cefazolin
* Cefuroxime
* Cefotaxime
* Cefoxitin
* Cefotetan
* Clindamycin
* Piperacillin-tazobactam

**Numerator**:

Patients who received intraoperative redosing of prophylactic antibiotics at a maximum interval of two half-lives of the selected prophylactic antibiotic.

Numerator Note: If multiple redosing windows pass during a procedure, the recommended redosing window is the maximum amount of time that can pass between any two doses in order to meet this measure.

Maximum redosing intervals (two half-lives) for included antibiotics:

* Ampicillin-sulbactam (Unasyn): 2 hours
* Ampicillin: 2 hours
* Aztreonam: 4 hours
* Cefazolin: 4 hours
* Cefuroxime: 4 hours
* Cefotaxime: 3 hours
* Cefoxitin: 2 hours
* Cefotetan: 6 hours
* Clindamycin: 6 hours
* Piperacillin-tazobactam (Zosyn): 2 hours

**Exclusions**:

* Renal failure (GFR < 15 mL/min/1.73m2)
* Procedure duration (surgical incision to closure time) < 2 half-lives of selected prophylactic antibiotic

**Baseline:** 49.3% (07/01/2019 – 02/28/2020: COVID-excluded)

**Performance Table:** Approved 8/18/20 and to be averaged over 10 months: 9/1/20 - 6/30/21

|  |  |
| --- | --- |
| **Tier** | **Goal (%)** |
| Below Threshold | <46.9 |
| Threshold | 47.0 - 49.9 |
| Performing | 50.0 – 52.9 |
| High Performing | > 53.0 |

**References**:

Bratzler DW, Dellinger EP, Olsen KM, Perl TM, Auwaeter PG, Bolon MK, Fish DN, Napolitano LM, Sawyer RG, Slain D, Steinberg JP, Weinstein RA. Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery. Surgical Infections 14(1): 73-156.

**FAQs:**

1. What are the redosing intervals for vancomycin and ceftriaxone?

*Due to it long half-life (4-8 hrs in adults with normal renal function), vancomycin can most often be used as a single dose and is not included in this measure. Ceftriaxone is also not included.*

1. Are cardiac cases excluded?

*No. Cefazolin or its alternative should be redosed intraoperatively within two half-lives.*

1. Are inpatient/ED add-on cases excluded from this measure?

*If preop antibiotic prophylaxis is given, then the case should be included.*

*Patients receiving therapeutic antibiotics due to ongoing infection should be excluded from this measure. For cases that do not receive prophylactic antibiotics for any reason, consider inputting a SCIP note to standardize documentation.*

1. Should Ampicillin/Sulbactam (Unasyn) and Piperacillin/Tazobactam (Zosyn) really be redosed every 2 hours?

*Yes, based on current evidence with a half-life close to 1 hr, these antibiotics when used for prophylaxis should be dosed as a bolus within 60 minutes prior to incision and redosed as a bolus intraoperatively within 2 hours. Notes per pharmacy: The 1st 3 doses of Ampicillin/Sulbactam (Unasyn) are q2hr, but the 4th dose is q6hr due to max Sulbactam dose of 4g/24hrs. For longer cases, it is recommended to choose another antibiotic than Piperacillin/Tazobactam (Zosyn).*

1. If an inpatient is on Ampicillin/Sulbactam (Unasyn) continuous infusion prior to OR, what should be done intraoperatively?

*If given to treat ongoing infection, infusions should be continued in the OR per current order. However, as it is not for prophylaxis, the case should be excluded from the measure.*

1. Are the surgeons (and OR nursing staff) aware of new practice changes in question 4?

*Surgeons and other perioperative staff may not be aware of current, evidence-based intraoperative antibiotic redosing guidelines. It is highly recommended that the anesthesia care team members pass along this knowledge. Consider inputting a SCIP note to standardize documentation of an exception if an indicated redose is not given.*

1. Does a redose need to be the same amount as the prophylactic dose?

*No. Any redose of the indicated prophylactic antibiotic may pass the measure.*

*However, discussion of the amount of redose with the surgical team is encouraged.*

1. Do these guidelines apply to both acute and chronic renal failure?

*Yes, patients with GFR < 15 mL/min/1.73m2 +/- dialysis should be excluded from the measure.*

1. How is closing time defined?

*The incision closure time should be input in Epic by the circulating RN.*

1. Where will these guidelines be posted?

*When finalized, it should be posted at* [*http://sw-anesthesia.com*](http://sw-anesthesia.com)*. When the new departmental SharePoint website goes live, it should be at* [*https://bswhealth.sharepoint.com/sites/deptofanesthesiology*](https://bswhealth.sharepoint.com/sites/deptofanesthesiology)*.*