

Measure #332: Adult Sinusitis: Appropriate Choice of Antibiotic: Amoxicillin With or Without Clavulanate Prescribed for Patients with Acute Bacterial Sinusitis (Appropriate Use) – National Quality Strategy Domain: Efficiency and Cost Reduction

2017 OPTIONS FOR INDIVIDUAL MEASURES:
REGISTRY ONLY

MEASURE TYPE:

Process

DESCRIPTION:

Percentage of patients aged 18 years and older with a diagnosis of acute bacterial sinusitis that were prescribed amoxicillin, with or without clavulanate, as a first line antibiotic at the time of diagnosis

INSTRUCTIONS:

This measure may be reported based on the actions of the reporting eligible clinician who performs the quality action, described in the measure, based on services provided within measure-specific denominator coding. This measure is to be reported a minimum of **once per performance period** for patients with acute bacterial sinusitis during the performance period.

Measure Reporting:

The listed denominator criteria is used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions allowed by the measure. The quality-data codes listed do not need to be submitted for registry-based submissions; however, these codes may be submitted for those registries that utilize claims data.

DENOMINATOR:

All patients aged 18 years and older with a diagnosis of acute bacterial sinusitis who are prescribed an antibiotic

Definition:

Acute Bacterial Rhinosinusitis (ABRS)- Acute rhinosinusitis that is caused by, or is presumed to be caused by, bacterial infection. A clinician should diagnose ABRS when: (a) symptoms or signs of acute rhinosinusitis are present 10 days or more beyond the onset of upper respiratory symptoms, or (b) symptoms or signs of acute rhinosinusitis worsen within 10 days after an initial improvement (double worsening)

Denominator Criteria (Eligible Cases):

Patients aged \geq 18 years on date of encounter

AND

Diagnosis for acute sinusitis (ICD-10-CM): J01.00, J01.01, J01.10, J01.11, J01.20, J01.21, J01.30, J01.31, J01.40, J01.41, J01.80, J01.90

AND

Patient encounter during performance period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99281, 99282, 99283, 99284, 99285, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

WITHOUT

Telehealth Modifier: GQ, GT

AND

Sinusitis caused by, or presumed to be caused by, bacterial infection: G9364

AND

Antibiotic regimen prescribed: G9498

NUMERATOR:

Patients who were prescribed amoxicillin, with or without clavulanate, as a first line antibiotic at the time of diagnosis

Numerator Options:

Performance Met:

Amoxicillin, with or without clavulanate, prescribed as a first line antibiotic at the time of diagnosis (G9315)

OR

Denominator Exception:

Amoxicillin, with or without clavulanate, not prescribed as first line antibiotic at the time of diagnosis for documented reason (e.g., cystic fibrosis, immotile cilia disorders, ciliary dyskinesia, immune deficiency, prior history of sinus surgery within the past 12 months, anatomic abnormalities, such as deviated nasal septum, resistant organisms, allergy to medication, recurrent sinusitis, chronic sinusitis, or other reasons) (G9313)

OR

Performance Not Met:

Amoxicillin, with or without clavulanate, not prescribed as first line antibiotic at the time of diagnosis, reason not given (G9314)

RATIONALE:

The rationale for antibiotic therapy of ABRS is to eradicate bacterial infection from the sinuses, hasten resolution of symptoms, and enhance disease-specific quality of life. Antibiotic therapy should be efficacious, cost-effective, and result in minimal side effects.

The justification for amoxicillin as first-line therapy for most patients with ABRS relates to its safety, efficacy, low cost, and narrow microbiologic spectrum. Consideration to prescribing amoxicillin-clavulanate for adults with ABRS is given to those at a high risk of being infected by an organism resistant to amoxicillin. Factors that would prompt clinicians to consider prescribing amoxicillin-clavulanate instead of amoxicillin include:

- Situations in which bacterial resistance is likely (e.g. antibiotic use in the past month; close contact with treated individuals, health care providers, or a health care environment; failure of prior antibiotic therapy; breakthrough infection despite prophylaxis; close contact with a child in a daycare facility; smoker or smoker in the family; high prevalence of resistant bacteria in community)
- Presence of moderate to severe infection (e.g. moderate to severe symptoms of ABRS; protracted symptoms of ABRS; frontal or sphenoidal sinusitis, history of recurrent ABRS)
- Presence of comorbidity or extremes of life (e.g. comorbid conditions including diabetes; chronic cardiac, hepatic, or renal disease; immunocompromised patient; age greater than 65 years)

The use of high-dose amoxicillin with clavulanate is recommended for adults with ABRS who are at a high risk of being infected with an amoxicillin-resistant organism. High-dose amoxicillin is preferred over standard-dose amoxicillin primarily to cover penicillin non susceptible (PNS) *S. pneumoniae*. This risk exists in those from geographic regions with high endemic rates (>10%) of invasive PNS *S. pneumoniae*, those with severe infection (e.g., evidence of systemic toxicity with fever of 39C (102F) or higher, and threat of suppurative complications), age >65 years, recent hospitalization, antibiotic use within the past month, or those who are immunocompromised.

CLINICAL RECOMMENDATION STATEMENTS:

The following evidence statements are extracted from the referenced clinical guidelines:

AAO-HNS Sinusitis Guideline (2015)

If a decision is made to treat ABRS with an antibiotic agent, the clinician should prescribe amoxicillin with or without clavulanate as first-line therapy for most adults.

Recommendation based on randomized controlled trials with heterogeneity and non-inferiority design with a preponderance of benefit over harm.

The purpose of this statement is to promote prescribing of antibiotics with known efficacy and safety for ABRS and to reduce prescribing of antibiotics with potentially inferior efficacy because of more limited coverage of the usual pathogens that cause ABRS in adults. A secondary goal is to promote cost-effective antibiotic therapy for ABRS. A quality improvement opportunity addressed by this guideline key action statement is discouraging initial prescribing of antibiotics other than amoxicillin, with or without clavulanate, that may have low efficacy or have comparable efficacy but more adverse events.

IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults (2012)

Amoxicillin-clavulanate rather than amoxicillin alone is recommended as empiric antimicrobial therapy for ABRS in adults (weak, low).

Evidence for at least 1 critical outcome from observational studies, from RCTs with serious flaws or indirect evidence.

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2017 Registry Individual Measure Flow

#332: Adult Sinusitis: Appropriate Choice of Antibiotic: Amoxicillin With or Without Clavulanate Prescribed for Patients with Acute Bacterial Sinusitis (Appropriate Use)



*See the posted Measure Specification for specific coding and instructions to report this measure.

NOTE: Reporting Frequency: Patient-process

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v1

2017 Registry Individual Measure Flow
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SAMPLE CALCULATIONS:

Data Completeness=

$$\frac{\text{Performance Met (a=4 patients) + Denominator Exception (b=1 patient) + Performance Not Met (c=2 patients)}}{\text{Eligible Population / Denominator (d=8 patients)}} = \frac{7 \text{ patients}}{8 \text{ patients}} = 87.50\%$$

Performance Rate=

$$\frac{\text{Performance Met (a=4 patients)}}{\text{Data Completeness Numerator (7 patients) - Denominator Exception (b=1 patient)}} = \frac{4 \text{ patients}}{6 \text{ patients}} = 66.67\%$$

*See the posted Measure Specification for specific coding and instructions to report this measure.

NOTE: Reporting Frequency: Patient-process

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Please refer to the specific section of the Measure Specification to identify the denominator and numerator information for use in reporting this Individual Measure.

1. Start with Denominator
2. Check Patient Age:
 - a. If Age is greater than or equal to 18 years of age on Date of Service equals No during the measurement period, do not include in Eligible Patient Population. Stop Processing.
 - b. If Age is greater than or equal to 18 years of age on Date of Service equals Yes during the measurement period, proceed to check Patient Diagnosis.
3. Check Patient Diagnosis:
 - a. If Diagnosis of Acute Sinusitis as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
 - b. If Diagnosis of Acute Sinusitis as Listed in the Denominator equals Yes, proceed to check Encounter Performed.
4. Check Encounter Performed:
 - a. If Encounter as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
 - b. If Encounter as Listed in the Denominator equals Yes, proceed to check Telehealth Modifier.
5. Check Telehealth Modifier:
 - a. If Telehealth Modifier equals Yes, do not include in Eligible Patient Population. Stop Processing.
 - b. If Telehealth Modifier equals No, proceed to check Sinusitis Caused By, Or Presumed To Be Caused By, Bacterial Infection.
6. Check Sinusitis Caused By, Or Presumed To Be Caused By, Bacterial Infection:
 - a. If Sinusitis Caused By, Or Presumed To Be Caused By, Bacterial Infection equals No, do not include in Eligible Patient Population. Stop Processing.
 - b. If Sinusitis Caused By, Or Presumed To Be Caused By, Bacterial Infection equals Yes, proceed to Antibiotic Regimen Prescribed.
7. Check Antibiotic Regimen Prescribed:
 - a. If Antibiotic Regimen Prescribed equals No, do not include in Eligible Patient Population. Stop Processing.
 - b. If Antibiotic Regimen Prescribed equals Yes, include in the Eligible population.
8. Denominator Population:

- a. Denominator population is all Eligible Patients in the denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 8 patients in the sample calculation.
9. Start Numerator
 10. Check Amoxicillin, With or Without Clavulanate, Prescribed as a First Line Antibiotic at Time of Diagnosis:
 - a. If Amoxicillin, With or Without Clavulanate, Prescribed as a First Line Antibiotic at Time of Diagnosis equals Yes, include in Data Completeness Met and Performance Met.
 - b. Data Completeness Met and Performance Met letter is represented in the Data Completeness Met and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 4 patients in Sample Calculation.
 - c. If Amoxicillin, With or Without Clavulanate, Prescribed as a First Line Antibiotic at Time of Diagnosis equals No, proceed to Amoxicillin, With or Without Clavulanate, Not Prescribed as a First Line Antibiotic at Time of Diagnosis for Documented Reason.
 11. Check Amoxicillin, With or Without Clavulanate, Not Prescribed as a First Line Antibiotic at Time of Diagnosis for Documented Reason:
 - a. If Amoxicillin, With or Without Clavulanate, Not Prescribed as a First Line Antibiotic at Time of Diagnosis for Documented Reason equals Yes, include in Data Completeness Met and Denominator Exception.
 - b. Data Completeness Met and Denominator Exception letter is represented in the Data Completeness Met and Performance Rate in the Sample Calculation listed at the end of this document. Letter b equals 1 patient in the Sample Calculation.
 - c. If Amoxicillin, With or Without Clavulanate, Not Prescribed as a First Line Antibiotic at Time of Diagnosis for Documented Reason equals No, proceed to Amoxicillin, With or Without Clavulanate, Not Prescribed as a First Line Antibiotic at Time of Diagnosis, Reason Not Given.
 12. Check Amoxicillin, With or Without Clavulanate, Not Prescribed as a First Line Antibiotic at Time of Diagnosis, Reason Not Given:
 - a. If Amoxicillin, With or Without Clavulanate, Not Prescribed as a First Line Antibiotic at Time of Diagnosis, Reason Not Given equals Yes, include in the Data Completeness Met and Performance Not Met.
 - b. Data Completeness Met and Performance Not Met letter is represented in the Data Completeness Met in the Sample Calculation listed at the end of this document. Letter c equals 2 patients in the Sample Calculation.
 - c. If Amoxicillin, With or Without Clavulanate, Not Prescribed as a First Line Antibiotic at Time of Diagnosis, Reason Not Given equals No, proceed to Data Completeness Not Met.
 13. Check Data Completeness Not Met
 - a. If Data Completeness Not Met equals No, Quality Data Code or equivalent not reported. 1 patient has been subtracted from the data completeness numerator in the sample calculation.

SAMPLE CALCULATIONS:

Data Completeness=

$$\frac{\text{Performance Met (a=4 patients)} + \text{Denominator Exception (b=1 patient)} + \text{Performance Not Met (c=2 patients)}}{\text{Eligible Population / Denominator (d=8 patients)}} = \frac{7 \text{ patients}}{8 \text{ patients}} = 87.50\%$$

Performance Rate=

$$\frac{\text{Performance Met (a=4 patients)}}{\text{Data Completeness Numerator (7 patients) - Denominator Exception (b=1 patient)}} = \frac{4 \text{ patients}}{6 \text{ patients}} = 66.67\%$$