



Minnesota *Sample* Antibiotic Stewardship Plan for Outpatient Clinics

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Background

Antibiotics are powerful tools for fighting and preventing infections. However, widespread use of antibiotics has resulted in an alarming increase in antibiotic-resistant infections and a subsequent need to rely on broad-spectrum antibiotics that might be more toxic and expensive. In addition to the development of antibiotic resistance, antibiotic use is associated with an increased risk of *Clostridioides difficile* infection and adverse drug reactions. Since antibiotics are often unnecessarily or inappropriately prescribed, a concerted effort to decrease or eliminate inappropriate use can make a big impact on patient safety and the reduction of adverse events. Antibiotic stewardship (AS) consists of coordinated interventions aimed at treating infections while promoting appropriate antibiotic use. The practice of antibiotic stewardship requires commitment, leadership, communication, and actions informed by best practice guidelines and defined protocols. This Antibiotic Stewardship Plan outlines how __[Facility Name]__ will address this important health care and public health issue.

Goal

It is the goal of __[Facility Name]__ to prioritize the principles of antibiotic stewardship, with the mission of promoting appropriate prescribing to treat infections and reduce possible adverse events associated with antibiotic use. Components of this policy were developed by using evidence-based practice guidelines and are aligned with the *Core Elements of Outpatient Antibiotic Stewardship*, published by Centers for Disease Control and Prevention (CDC).¹

This Plan incorporates the Four Core Elements of AS outlined by CDC. Details of each element are described in the “Procedure” section of this document. This Plan, including the “Procedure” section, will be reviewed yearly to ensure that objectives and conditions are being met, to streamline procedures, and to identify opportunities to enhance stewardship. The Plan applies to all clinical staff.

The four core elements of stewardship are:

1. **Commitment:** Demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety.
2. **Action for Policy and Practice:** Implement at least one policy or practice to improve antibiotic prescribing, assess whether it is working, and modify as needed.
3. **Tracking and Reporting:** Monitor antibiotic prescribing practices and offer regular feedback to clinicians, or have clinicians assess their own antibiotic prescribing practices themselves.
4. **Education and Expertise:** Provide educational resources to clinicians and patients on antibiotic prescribing, and ensure access to needed expertise on optimizing antibiotic prescribing.

¹ Sanchez, G.V., Fleming-Dutra, K.E., Roberts, R.M., Hicks, L.A. Core Elements of Outpatient Antibiotic Stewardship. MMWR Recomm Rep 2016;65(No. RR-6):1–12. Available at https://www.cdc.gov/antibiotic-use/community/pdfs/16_268900-A_CoreElementsOutpatient_508.pdf

Key objectives for stewardship in __[year]__ will be to establish a stewardship team and implement a small number of additional antibiotic stewardship actions to improve commitment to prescribing antibiotics appropriately. We will make progress toward developing a system to track antibiotic use.

Anticipated objectives for stewardship in __[year]__ will be to improve upon __[year]__ AS Plan activities, implement an antibiotic use tracking method, and provide prescribing feedback reports to individual clinicians.

Procedure

Commitment

Identification of Antibiotic Stewardship Leadership

- a. Administrative leadership will identify one physician or nursing leader to be responsible for AS oversight and promotion. AS responsibilities will be included in position description or performance review criteria.

Leader: __[Physician/Nurse Leader Name]_____

- b. Clinical leaders will create a multidisciplinary team to collaborate on AS activities, including representatives from pharmacy, information technology, electronic health records, infection prevention, and quality improvement.

AS Team Members: __[Names]_____

Written Statement

A written commitment statement in support of AS will be posted in the facility, visible to patients, families, and all staff.

Annual Review

Leadership will annually review the following with all clinical and non-clinical staff:

- a. Facility commitment to AS and contents of this Plan
- b. Importance of AS and best practices for patient communication about antibiotics

Distribution Plan

A hard copy of this AS Plan will be provided annually in a centralized location. An electronic copy of the Plan will be available to clinical staff.

Antibiotic Stewardship Team Role

- a. Meet on a __[frequency (i.e., monthly, quarterly)]__ basis to demonstrate accountability for activities that support the AS mission and to:
 - 1. Define prescribing standards and recommendations, communication objectives, and other AS protocols.

2. Utilize antibiotic use and other data to ensure that the AS Plan procedures and other best practices are followed and refined as needed.
 3. Receive feedback from clinicians about current stewardship interventions.
 4. Review this AS Plan document annually and revise as needed.
- b. Communicate prescribing standards to staff and providers.

Action for Policy and Practice

Background

The actions outlined in this Plan are intended to support appropriate prescribing practices by individual providers and to inform all staff about the importance of AS. Because multi-part AS interventions have been shown to be most successful, __[Facility Name]__ will take a stepwise approach to implement protocols, strengthening the AS program over time.

Actions

a. Evidence-based diagnostic criteria and treatment recommendations

Providers will strive to adhere to CDC clinical treatment recommendations for adult and pediatric patients. These standards have been reviewed and approved by __[Facility Name]__ and can be found at the web links below.

[CDC Pediatric Treatment Recommendations \(https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/pediatric-treatment-rec.html\)](https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/pediatric-treatment-rec.html) for acute sinusitis, acute otitis media, pharyngitis, common cold or non-specific upper respiratory tract infection, bronchiolitis, and urinary tract infection.

[CDC Adult Treatment Recommendations \(https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html\)](https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html) for acute rhinosinusitis, acute uncomplicated bronchitis, common cold or non-specific upper respiratory tract infection, pharyngitis, and acute uncomplicated cystitis.

Implementation date: __[Month Day, Year]__

b. Record keeping

Dose, duration, route, and indication of every antibiotic prescription must be documented in the medical record for every patient, regardless of prior prescriptions or documentation elsewhere. Delayed prescribing and watchful waiting decisions should also be documented.

Implementation date: __[Month Day, Year]__

c. Delayed prescribing

When appropriate, delayed prescribing will be used for patients with conditions that often resolve without treatment, but who can benefit from antibiotics if the condition does not improve. Delayed prescribing opportunities include acute uncomplicated sinusitis and mild acute otitis media. The AS Team encourages use of patient communication tools for

watchful waiting (e.g., include the clinic Viral Prescription Pad and Cough and Cold Care brochures). Delayed prescribing approaches include:

1. Provision of a postdated prescription
2. Provision of prescription with instructions to fill after a predetermined period if symptoms worsen or do not improve
3. Recommendation to return to the clinic, call, or use electronic communication (e.g., online patient portal) for a prescription if symptoms worsen or do not improve

Implementation date: __[Month Day, Year]__

d. Watchful waiting

When appropriate, watchful waiting will be used for patients with conditions that often resolve without treatment. Patient communication required when initiating a watchful waiting period include: diagnosis, suggestions for symptom relief (including any non-antibiotic medications), and instructions for follow-up. The AS Team encourages use of patient communication tools for watchful waiting (e.g., include the clinic Viral Prescription Pad and Cough and Cold Care brochures). Clinical staff should be aware of CDC treatment recommendations for adult and pediatric patients for watchful waiting.

Implementation date: __[Month Day, Year]__

e. Communication skills training

Clinical staff will receive annual communications skills training to enhance their ability to address patient concerns about prognosis, benefits and harms of antibiotics and management of self-limiting conditions, and to address clinician concerns about managing patient expectations for antibiotics. Trainings must occur yearly and can be fulfilled by in-house sessions, webinars, or conferences. Content will be approved by the AS Team.

One example of approved training is Section 2 of CDC’s Antibiotic Stewardship Training Series (https://www.train.org/cdctrain/training_plan/3697).

Implementation date: __[Month Day, Year]__

f. Best practices for preventive medicine

Education on healthy habits, hand hygiene, and vaccination are expected to be core components of the __[Facility Name]__ approach to preventive medicine. Prevention of infection translates into less antibiotic use.

Implementation date: __[Month Day, Year]__

g. Interventions for syndrome-specific antibiotic use and antibiotic prophylaxis

Based on findings from antibiotic use tracking (see “Tracking and Reporting” section below), the AS Team will identify interventions to directly impact inappropriate antibiotic use for specific syndromes and for prophylactic indications.

Implementation date: __[Month Day, Year]__

h. Clinical decision support for AS

For infections of otitis media, bronchitis, sinusitis, pharyngitis, and cystitis, documentation-based clinical decision support will be used to improve antibiotic prescribing. Approved clinical treatment guidelines will be incorporated, including antibiotic selection, dose and duration, watchful waiting, and delayed prescribing.

Implementation date: __[Month Day, Year]__

i. Use of antibiogram

__[Facility Name]__ will work with __[Diagnostic Laboratory Name]__ to develop a __[facility or system-specific]__ antibiogram that, along with CDC treatment recommendations for adult and pediatric patients, will be used to improve first-line antibiotic selection.

Implementation date: __[Month Day, Year]__

j. Review of *Clostridioides difficile* cases

Medical records of patients diagnosed with *C. difficile* will be reviewed for antibiotic use in the previous 12 weeks. Providers who prescribed an antibiotic to a patient who developed *C. difficile* in the next 12 weeks will be informed of the *C. difficile* case and whether the antibiotic prescription was considered appropriate, based on facility-approved treatment guidelines.

Implementation date: __[Month Day, Year]__

Tracking and Reporting

Measurement/Tracking Objective

We will monitor antibiotic prescribing for high priority conditions and stewardship practices. As the AS initiatives grow at __[Facility Name]__, we will broaden our measurement approach.

Tracking of High Priority Conditions

a. Acute uncomplicated bronchitis in adults

1. Data collection

Retrospective record review will be conducted monthly for patients diagnosed with acute bronchitis (ICD-10 codes J20, ICD-9 codes 466) and bronchitis not specified as acute or chronic (ICD-9 codes 490). Record review will include collection of heart rate, respiratory rate, oral temperature, abnormal lung auscultation findings (yes/no), antibiotic prescribing information (yes/no prescribed, drug name and strength, frequency, duration), and provider name. Cases with symptoms that meet the definition of acute uncomplicated bronchitis will be included in tracking. Data will be collected in Microsoft Excel in the format seen in Appendix A.

2. Prescribing metric

The percent of uncomplicated acute bronchitis not receiving antibiotics will be calculated (“avoidance of antibiotics for acute bronchitis”).

b. Sinusitis

1. Data collection

Retrospective record review will be conducted monthly for patients diagnosed with acute sinusitis (ICD-10 codes J01, ICD-9 codes 461). Record review will include collection of oral temperature, duration of illness (days), signs of worsening symptoms after initial improvement (yes/no), severe symptoms (yes/no, as defined by temperature >38°C or 101°F, or severe sinus pain for ≥3 days), antibiotic prescribing information (yes/no prescribed, drug name, dose, frequency, duration), initial visit/recurrent infection, recorded penicillin allergy, and provider name.

Antibiotics will be recorded as indicated if at least one criteria for acute bacterial sinusitis is present: (1) severe symptoms; (2) persistent symptoms not improving for ≥10 days; or (3) initial improvement followed by worsening symptoms.

Data will be collected in Microsoft Excel in the format seen in Appendix A.

2. Prescribing metrics

A measure of unnecessary sinusitis antibiotic prescriptions will be calculated as the percent of antibiotic prescriptions for which there was no indication of acute bacterial sinusitis.

A measure of inappropriate first-line treatment will be calculated as the percent of initial antibiotic prescriptions that were drugs other than amoxicillin or amoxicillin/clavulanate or, for penicillin-allergic patients, doxycycline or respiratory fluoroquinolone.

Tracking of Antibiotic Stewardship Practices

a. Record keeping

Documentation of antibiotic prescribing details will be assessed during monthly review of high priority conditions. For each patient encounter where an antibiotic(s) was prescribed, complete documentation will be defined by inclusion of drug, dose, frequency, and duration in the medical record.

b. Communication skills training

A list of clinical staff will be updated each quarter with completed antibiotic communication skills training. The list will include the name and date of training program.

Reporting

- a. Monthly Antibiotic Stewardship Reports** will be discussed at a full AS team meeting or a Quality Assurance Performance Improvement meeting, and disseminated to all clinical staff and to administrative leadership.

- b. A **Quarterly Antibiotic Stewardship Report** will be compiled and will include summaries of collected data, trends in those data over time, interpretation of data by the AS Leader, key challenges, and identified next action steps.
- c. Accompanied by a signed letter from the AS Leader, **Quarterly Benchmarking Reports** will be provided to each prescriber, showing his/her individual rates of avoidance of antibiotics for acute bronchitis, appropriate prescribing for sinusitis, and antibiotic documentation, as compared to the average facility rates and rates of other prescribers. The report will also include specific actions that prescribers can take to improve prescribing performance. Prescribers will be asked to acknowledge receipt of the benchmarking report.
- d. An **Annual Antibiotic Stewardship Report** will be developed to include a yearly data summary, interpretation, and next steps, as well as identification of AS initiatives identified for the following year.

Education and Expertise

Antibiotic Stewardship Expertise

To reduce antibiotic use and guide development of AS protocols, the AS Leader will collaborate, as needed, with:

- a. Consultant pharmacist(s): __[Names]_____
- b. Hospital AS contact(s) in referral network: __[Names]_____
- c. Infectious disease consultant(s): __[Names]_____
- d. Other(s): __[Names and Roles]_____

Antibiotic Stewardship Education

__[Facility Name]__ will provide AS education to staff, prescribing providers, patients, and families. The education plans are defined below.

a. Clinical staff

Upon hire: __[Description of AS education]_____

Annually: __[Description of AS education]_____

b. Patients

__[Description of AS education]_____

c. Parents/Families

__[Description of AS education]_____

Antibiotic Stewardship Resources and Tools

The following materials will be made available to clinical staff to facilitate AS initiatives.

- a. Minnesota Antimicrobial Stewardship Program Toolkit of Outpatient Clinics
(<https://www.health.state.mn.us/diseases/antibioticresistance/hcp/asp/out/index.html>)
 - Cough and Cold Care for Adults
 - Cough and Cold Care for Children
 - Bronchitis or Sinusitis fact sheet
 - Viral Prescription Pad
 - Provider Talking Points on Antibiotic Use
 - Antibiotic Use and Antibiotic Resistance: Answers for Patients fact sheet
 - Syndrome-specific treatment guidelines
 - Outpatient stewardship summary reports
 - Waiting and exam room materials (word search, coloring page, and videos)
 - Antibiotic stewardship commitment materials
- b. CDC Antibiotic Prescribing and Use in Doctor's Offices: Print Materials for Healthcare Professionals (<https://www.cdc.gov/antibiotic-use/community/materials-references/print-materials/hcp/index.html>)
 - Delayed prescribing and watchful waiting prescription pads
 - Other print materials available in multiple languages focused on appropriate antibiotic prescribing and antibiotic resistance

Appendix A. High Priority Conditions Tracking

The following is based upon treatment recommendations found in [CDC Antibiotic Prescribing and Use in Doctor’s Offices: Adult Treatment Recommendations](https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html) (<https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html>).

Acute Uncomplicated Bronchitis in Adults

| Patient medical record # | Diagnosis | Heart rate | Resp. rate | Oral temp. | Abnormal lung sounds | Acute uncomp. bronchitis ¹ | Antibiotic prescribed | Name | Dose | Frequency | Duration | Provider |
|--------------------------|-----------|------------|------------|------------|----------------------|---------------------------------------|-----------------------|------|------|-----------|----------|----------|
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |

¹Acute uncomplicated bronchitis is defined as absence of abnormal vital signs (heart rate \geq 100 beats/min, respiratory rate \geq 24 breaths/min, or oral temperature \geq 38°C) and abnormal lung examination findings (focal consolidation, egophony, fremitus).

Acute Sinusitis in Adults

| Patient medical record # | Diagnosis | Duration of illness | Oral temp. | Severe symptoms ¹ | Worsened after improvement | Antibiotic not indicated ² | Antibiotic prescribed | Penicillin allergy | Name | Dose | Frequency | Duration | Provider |
|--------------------------|-----------|---------------------|------------|------------------------------|----------------------------|---------------------------------------|-----------------------|--------------------|------|------|-----------|----------|----------|
| 1 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |

¹Severe symptoms are defined as temperature $>38^{\circ}\text{C}$ or 101°F , or severe sinus pain for ≥ 3 days.

²Antibiotic indicated only if at least 1 criteria for acute bacterial sinusitis is present: (1) severe symptoms; (2) persistent symptoms not improving for ≥ 10 days; or (3) initial improvement followed by worsening symptoms.