Getting an Outpatient Antibiotic Stewardship Program Off the Ground: The Allina Health Experience

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Allina Health

Objectives

1. Recognize why outpatient antibiotic stewardship matters

2. Develop strategies to identify gaps and prioritize high-value actions when building an outpatient stewardship program

3. Discuss practical approaches to build momentum and overcome challenges when developing an outpatient stewardship program

Recognize why outpatient antibiotic stewardship matters

Majority of human antibiotic USE occurs outpatient

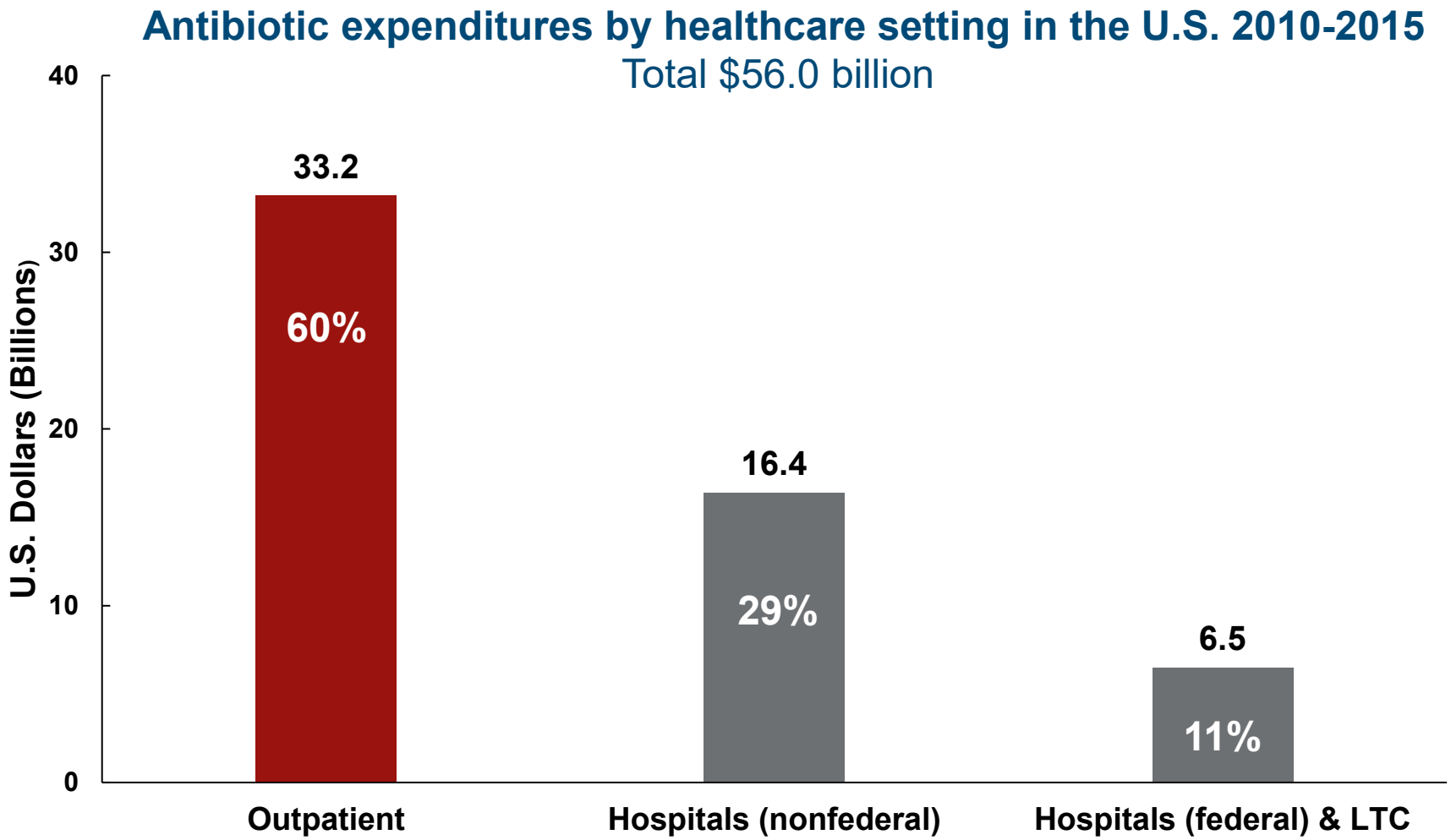
80%

of antibiotics are prescribed outpatient

CDC: Core Elements of Outpatient Antibiotic Stewardship
(www.cdc.gov/antibiotic-use/hcp/core-elements/outpatient-antibiotic-stewardship.html)

Duffy et al. J Clin Pharm Ther 2018;43:59-64

Majority of human antibiotic EXPENDITURES occur outpatient



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Suda et al. CID 2018;66(2):185-190

One third of outpatient antibiotics are unnecessary

CDC: Antibiotic Use in the United States
(www.cdc.gov/antibiotic-use/hcp/data-research/antibiotic-prescribing.html)

Half of outpatient antibiotics are inappropriate

Common bacterial infections

31-36% of **children**

43-56% of **adults**

... received an inappropriate type of antibiotic.
(i.e., not the recommended, or first-line, antibiotics based on medical guidelines).

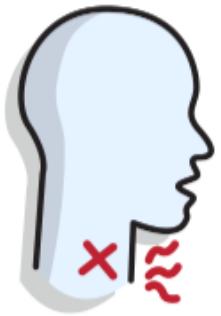
The Pew Charitable Trusts: Inappropriate Antibiotic Prescribing Leads to Increased Costs Complications
(www.pew.org/en/research-and-analysis/data-visualizations/2023/inappropriate-antibiotic-prescribing-leads-to-increased-costs-complications)

Unnecessary and inappropriate outpatient antibiotics drive avoidable costs

Suppurative middle ear infections

$25.3 million (children)

Pharyngitis (sore throat)



$21.3 million (children)

$49.6 million (adults)

Sinusitis (sinus infections)

$7.1 million (children)

$19.1 million (adults)

Viral upper respiratory infections (the common cold)

$19.1 million (children)

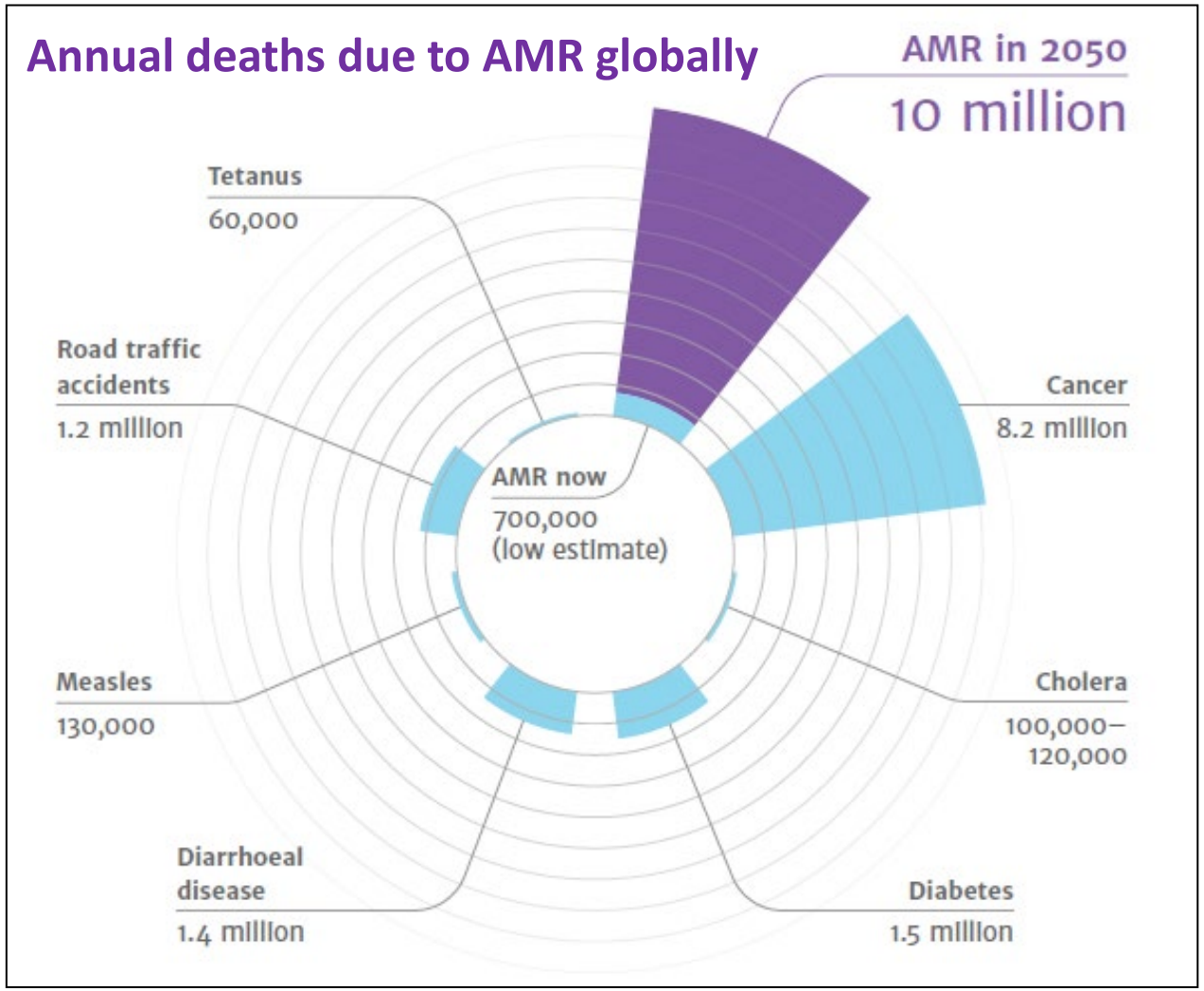
The Pew Charitable Trusts: Inappropriate Antibiotic Prescribing Leads to Increased Costs Complications (www.pew.org/en/research-and-analysis/data-visualizations/2023/inappropriate-antibiotic-prescribing-leads-to-increased-costs-complications)

Antibiotic-related adverse events

1 out of 5
medication-related visits to the emergency room are from reactions to antibiotics.

People are 7-10 times more likely to get *C. difficile* infection while on antibiotics and during the month after.

Antimicrobial resistance undermines modern medicine



By 2050, **more** annual deaths will be attributed to **AMR** than **cancer**.

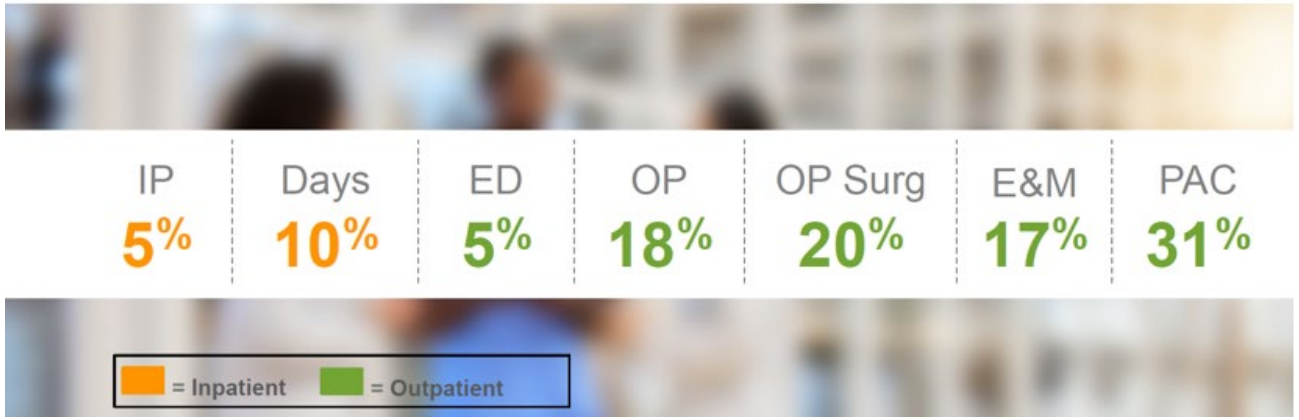
AMR, Antimicrobial resistance

Wellcome Trust and the United Kingdom Government 2016
Tackling Drug-Resistant Infections Globally: Final Report and Recommendations
(https://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf)

Fast outpatient growth expected in next decade

10-year projections for anticipated shifts in sites of care delivery:

- Outpatient (OP) care patient volumes projected to grow 18%
- Inpatient (IP) care patient discharges projected to grow 5% and LOS to increase 10%



Vizient: 2025 Impact of Change Forecast
(https://vizientinc-delivery.sitecorecontenthub.cloud/api/public/content/6c08a7865f8b42988eb38bc243d95e77?v=2b707b20)

Outpatient antibiotic stewardship is critical

- Outpatient antibiotics comprise at least 80% of human antibiotic use
- 30%-50% of antibiotics prescribed in U.S. outpatient settings are unnecessary or inappropriate
- Improvement of antibiotic use in the outpatient setting is **imperative** and **needed urgently** for patient care on individual and community level

CDC: Core Elements of Outpatient Antibiotic Stewardship
(www.cdc.gov/antibiotic-use/hcp/core-elements/outpatient-antibiotic-stewardship.html)
Accessed 8/10/2023

Strategies to identify gaps and prioritize high-value actions

Where do we even start?

Strategies to identify gaps and high-value efforts

- Invite input from front line clinicians
- Meet with leaders to understand priorities
- Use checklists to systematically identify gaps

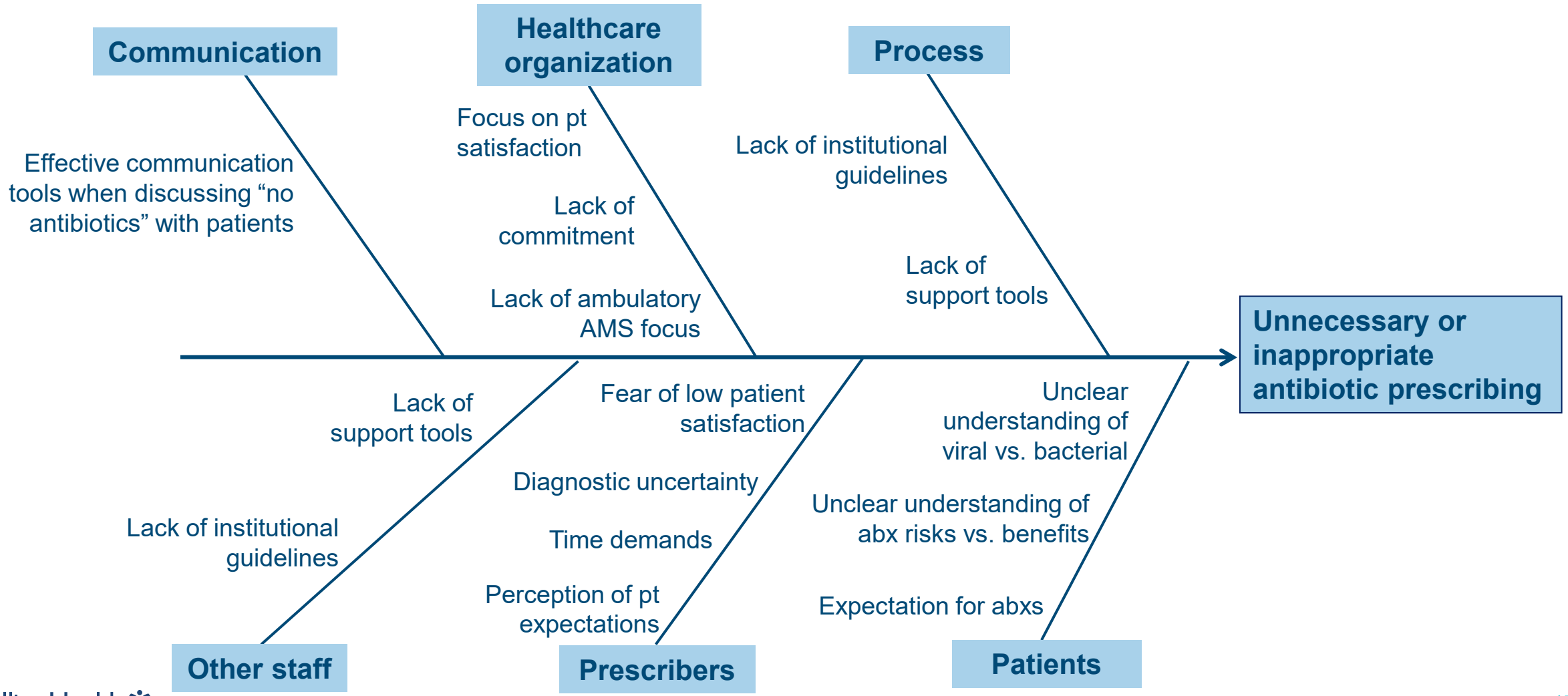
CDC: Core Elements of Outpatient Antibiotic Stewardship
(www.cdc.gov/antibiotic-use/hcp/core-elements/outpatient-antibiotic-stewardship.html)

Allina survey: Barriers to practice change & helpful support tools

Rank	Barriers to practice change
1	Patients really want antibiotics
2	Patients will be dissatisfied
3	Lack of clear guidance

Rank	Helpful support tools
1	Patient education
2	Organizational commitment
3	Clinical guidance

Cause and effect diagram for suboptimal antibiotic prescribing



CDC checklists for gap identification

Health Systems Checklist for Core Elements of Outpatient Antibiotic Stewardship

CDC recommends that health systems take steps to implement the Core Elements of Outpatient Antibiotic Stewardship to improve patient safety and slow the spread of antimicrobial resistance. Use this checklist to identify and monitor outpatient stewardship activities within your health system.

COMMITMENT

1. **Does your health system have dedicated resources and established accountability to improve antibiotic prescribing in outpatient settings?** ❑ Yes ❑ No

If yes, indicate which of the following are in place in your health system. (Select all that apply.)

- ❑ Appoint a designated leader, or coleaders, who are accountable for antibiotic stewardship activities in outpatient facilities within your health system.
- ❑ Outline outpatient antibiotic stewardship-related duties in job descriptions and annual performance reviews for stewardship program leads and key support staff.
- ❑ Create and promote clinician or organizational leadership commitments to antibiotic stewardship and display during patient encounters (e.g., commitment posters, screensavers, marketing materials).
- ❑ Create a formal, written outpatient antibiotic stewardship policy or other formal statements supporting efforts to improve and monitor antibiotic use in outpatient settings.
- ❑ Provide resources to support outpatient antibiotic stewardship efforts, ensuring that staff from key support departments and groups (e.g., information technology) are contributing to stewardship activities.
- ❑ Communicate with outpatient facilities' clinicians and staff members about antibiotic stewardship activities to set patient expectations regarding appropriate antibiotic use.

CDC: The Core Elements of Outpatient Antibiotic Stewardship Checklists
(www.cdc.gov/antibiotic-use/media/pdfs/Core-Elements-Outpatient-Forms-checklists-508.pdf)

Tracking progress

Summary of Adherence to TJC Elements of Performance and the CDC Core Elements for Outpatient Antimicrobial Stewardship

TJC/CDC Elements	1/2024	12/2024	6/2025	12/2025
Commitment	🟡	🟢	🟢	🟢
Action	🟡	🟡	🟢	🟢
Tracking and Reporting	🟡	🟡	🟡	🟢
Education and Expertise	🟡	🟢	🟢	🟢
OVERALL ADHERENCE	0%	50%	75%	100%

Red: Minimal adherence; **Yellow**: Partial adherence; **Green**: Good adherence

Multiple factors affect outpatient antibiotic prescribing

Provider Factors

- Access to diagnostic and treatment best practices
- Prescribing habits
- Communication skills
- Beliefs about patient preferences
- Emotions and tolerance of uncertainty
- Decision fatigue
- Competing demands

Patient Factors

- Health literacy and understanding of medical information
- Language or other barriers
- Previous experiences, perceptions and expectations with antibiotic treatment
- Trust in HCP recommendations
- Desire for active involvement in clinical decisions

Healthcare System Factors

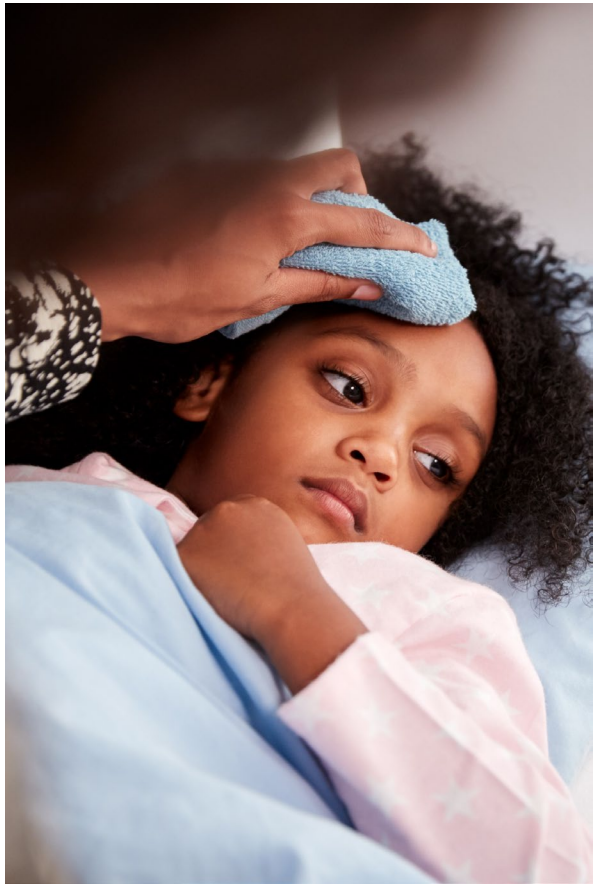
- Support of judicious antibiotic use
- Availability of clinical support tools
- Competing performance measures
- Practice culture
- Practice volume

Patient demand for antibiotics

Patient demand as a barrier to judicious prescribing

"Sometimes you just don't have time to argue with a parent. You just don't. It can be a war zone. It is in the middle of the winter, and the kid is outside throwing up in the hall, and the mom says 'I need an antibiotic prescription.' Most of the time you can reason with her. You say 'look, we don't need to treat this.' And she says 'but my neighbor says this. I have an uncle who's a doctor and he said yes, I need it.' They come up with a million reasons why they need it. And you just don't have time."

Primary Care Pediatrician



Szymczak et al. Infect Control Hosp Epidemiol. 2014;35 Suppl 3:S69-78

Need for institutional guidelines

- Difficult to keep up with new recommendations
- Too many recommendations and details
- Conflicting recommendations from national organizations

Practical approaches to build momentum and overcome challenges

Building momentum

Give clinicians what they the need most.

In our case:

- Organizational commitment
- Clinical decision support tools
- Effective communication tools

Organizational commitment

Allina Health Antibiotic Awareness Campaign

Launched Nov 2024

Goals

- Establish systemwide commitment to safe antibiotic use
- Empower providers to practice judicious antibiotic prescribing
- Promote patient education on the benefits and risks of antibiotics

Allina Antibiotic Awareness Campaign Overview

Internal tactics

Patients

- Commitment poster (Nov 2024)
- SCALA board digital signage (quarterly themes in 2025, monthly themes in 2026)

Care Team Members

- Allina newsletter articles (quarterly)

External tactics

- Public-facing website (Nov 2024)
- Newsletter article to public (Nov 2025)
- Facebook post (Dec 2025)
- Instagram interactive quiz (Feb 2026)

Commitment poster

- 2 sizes; 4 languages
- Displayed in primary care, urgent care, EDs

SCALA board digital signage

Help keep antibiotics effective

Do ...

- Take antibiotics as instructed
- Take antibiotics prescribed for you
- Ask your doctor if antibiotics are necessary for your condition

Don't ...

- Skip antibiotic doses
- Give your antibiotics to others or use antibiotics prescribed for others
- Insist on antibiotics if your doctor advises against them

Relief for acute sinusitis

- Drink fluids to thin nasal secretions and loosen phlegm
- Use saline nasal spray or irrigation kits to ease congestion
- Elevate your head when lying down to keep mucus from pooling at the back of your throat
- Rest to help your body fight the infection, which is usually **viral**
- Know that antibiotics will **not** treat most sinus infections
- Ask your doctor what over-the-counter medications can help you feel better

Learn more about sinusitis in adults and children

Facebook Post

Allina Health
13h ·

With respiratory infections spiking in our communities, be aware of when antibiotics are necessary and when they may cause more harm good. When you're sick and discussing your treatment options with your care provider, follow these tips:

• Ask your doctor what you can do to feel better and get relief from your symptoms.
• Tell your doctor you only want antibiotics if they are necessary, and don't insist on antibiotics if your doctor advises against them.
• If your doctor prescribes an antibiotic to you, take it exactly as prescribed.

Read our article to learn more: https://bit.ly/4p9B9Zd.

Instagram Interactive Quiz

- Measures reach & participation
- Identifies understanding & knowledge gaps
- Informs future education

1. **True or False:** If antibiotics aren't needed, taking them can cause more harm than good.
2. **Which illnesses are caused by viruses and won't benefit from antibiotics?**
   a) Common cold/runny nose
   b) Acute bronchitis/chest cold
   c) Most sinus infections and sore throats
   d) All of the above
3. **Which is the best answer?** If your clinician says antibiotics won't help, you should:
   a) Insist on getting them anyway
   b) Use someone else's antibiotics
   c) Ask about other treatments and follow the care plan
4. **True or False:** Using antibiotics when they're not needed can help bacteria become harder to kill.
5. **True or False:** If you develop side effects while taking an antibiotic, you should contact your doctor or seek care right away.

Clinical decision support tools

Allina multidisciplinary clinical pathways for respiratory infections

1. Adult acute bronchitis
2. Pediatric acute bronchitis
3. Pediatric acute bronchiolitis
4. Adult GAS pharyngitis
5. Pediatric GAS pharyngitis
6. Adult acute sinusitis
7. Pediatric acute sinusitis
8. Pediatric acute otitis media

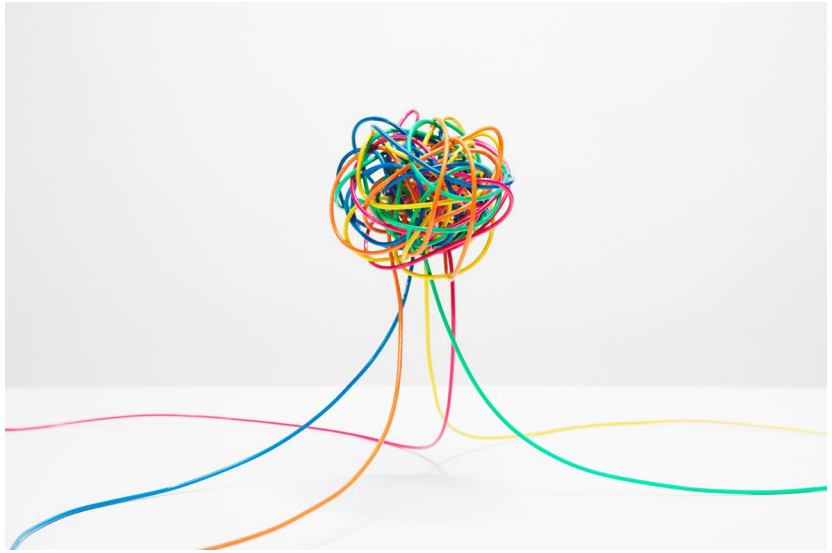
Developed and approved Nov 2023 – Jan 2025

Goals of Allina clinical pathways

- Reduce unwarranted or unintended variation in practice
- Optimize diagnosis and treatment
- Improve efficiency of care

by

- Incorporating national recommendations, primary literature, and multidisciplinary expertise
- Reconciling conflicting national recommendations



Elements of Allina outpatient clinical pathways

- One-page algorithm
- Aim
- Exclusions (if applicable)
- Links to Allina patient education
- Antibiotic recommendations
- Supportive care recommendations
- Communication strategies
- Contingency plan
- Synopsis of disease
- References & Workgroup

Epic order panels

Adult Rhinosinusitis Guidelines

Suspect acute rhinosinusitis if **≤ 4 weeks** of purulent nasal drainage **AND** nasal obstruction or facial pain-pressure-fullness.

- Allina Adult Acute Sinusitis Outpatient Clinical Pathway
- Allina Adult Acute Sinusitis Patient Education
- Allina Adult Watchful Waiting and Delayed Antibiotic Prescription Patient Education

- ☐ First Line Medications for symptom management
- ☐ Acute Bacterial Rhinosinusitis Antibiotics

Peds Acute Otitis Media Guidelines

Children with tympanostomy tubes, cochlear implants, craniofacial abnormalities, chronic or recurrent otitis media, or immune deficiency represent a more complicated and diverse population **excluded** from the Clinical Pathway. **ENT consultation is recommended**.

- Allina Pediatric Outpatient Acute Otitis Media Clinical Pathway
- Allina Pediatric Acute Otitis Media Patient Education
- Allina education on watchful waiting and delayed antibiotic prescription

- ☐ Symptomatic Medications
- ☐ Antibiotic Medications

Adult Strep Pharyngitis Guidelines

- Allina Adult GAS Pharyngitis Outpatient Clinical Pathway
- Allina Adult Acute Pharyngitis Patient Education

- ☐ Strep Pharyngitis Lab Testing
- ☐ Medications for Symptom Management
- ☐ Antibiotics for Confirmed Strep Pharyngitis

Effective communication tools

Why effective communication is important

Effective communication with patients and families

- Places the patient at the center of care
- Maintains patient and clinician satisfaction
- Addresses treatment expectations
- Prevents inappropriate antibiotic prescribing

Allina guidance on effective communication strategies

4-Part Communication Strategy

Part 1. **Review your physical exam findings with the patient**
"Your oxygen level and temperature are normal. Your lungs show no signs of pneumonia."

Part 2. **Deliver a clear diagnosis**
"You have acute bronchitis, also known as a chest cold. Chest colds are caused by viruses."

Part 3. **Use a 2-part negative/positive treatment recommendation**

1. **Negative recommendation**: *"This is a chest cold, which antibiotics won't work against. Antibiotics, if used, may cause side effects, such as diarrhea."*
2. **Positive recommendation**: *"But honey can soothe your cough and help you feel and sleep better."*

Part 4. **Provide a contingency plan about expectations regarding symptoms and when to seek care**
"Since you have bronchitis, you may continue to feel sick for the next 1–2 weeks. If your cough is not getting better after 3 weeks or if you develop a temperature ≥100.4F for more than 3 days call the office. If you are feeling really ill, please go to the ED."

- Patients tend to **question** the treatment plan after a **negative** recommendation. This can shift the provider-patient interaction into a provider-patient negotiation, increasing the probability of unwarranted antibiotic prescribing. It can also increase the length of visit by forcing clinicians to re-explain why antibiotics are not needed.
- In contrast, a **negative** recommendation **followed by a positive** recommendation results in the lowest unwarranted antibiotic prescribing and the highest patient satisfaction with the quality of care.

DIALOGUE AROUND RESPIRATORY ILLNESS TREATMENT
DART

Suggested responses to antibiotic appeals

Prior experience with clinicians

"My doctor always gives me an antibiotic for a cough."

Suggested Response

"*While it is helpful to know how you've been treated for this in the past, I'm focused most intently on how you are feeling today. Also, there's a lot of newer evidence showing antibiotics have more side effects than we used to think. All physicians are being urged to use antibiotics only when they are more likely to help than hurt. I will give you a few other options to help you feel better*."

Szymczak et al. Mayo Clin Proc. 2021;96(3):543-546

Practical approaches to overcome challenges

- **Be flexible with your plan**
  - If you encounter delays, pivot to higher-momentum work
- **Identify alternative paths forward**
  - If local resources or analytics are unavailable, leverage external resources such as AHRQ collaboratives → provide education & benchmarking reports
- **Nurture a team for the long-run**
  - If clinician champions are limited, invest deeply in the few you have and build gradually from their influence
- **Keep supporting**
  - Support clinicians in keeping every antibiotic dose intentional and integrating clinical tools into workflows

Take Home Points

- Most antibiotic use occurs outpatient and 30% to 50% is unnecessary or inappropriate
- Effective outpatient stewardship starts with identifying local gaps and focusing on high-impact interventions
- Establishing organizational commitment and developing clinical decision support facilitate momentum and evidence-based prescribing

Acknowledgements - Clinical pathway workgroup members

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