



Medical Provider Barriers to the Implementation of Antimicrobial Stewardship

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Objectives

Understand
Antimicrobial
Resistance and
the need for
Antimicrobial
Stewardship

Identify barriers to
the
implementation
of Antimicrobial
Stewardship

Identify solutions
to overcoming
the
implementation
of Antimicrobial
Stewardship

Introduction to Antimicrobial Stewardship



Definition of Antimicrobial Stewardship

Antimicrobial stewardship is a coordinated program that promotes the appropriate use of antimicrobials, improves patient outcomes, reduces microbial resistance, and decreases the spread of infections caused by multidrug-resistant organisms.



Importance in Healthcare

Antimicrobial stewardship is crucial in healthcare settings to ensure the effective treatment of infections, prevent the development of antimicrobial resistance, and minimize the adverse effects associated with unnecessary or inappropriate use of antimicrobials.



Key Components of Antimicrobial Stewardship

Antimicrobial stewardship programs typically include interventions such as prospective audits, formulary restrictions, education, and implementation of evidence-based guidelines to promote the optimal use of antimicrobials.

Effective antimicrobial stewardship is essential for improving patient outcomes, reducing the spread of antimicrobial resistance, and ensuring the sustainable use of these critical resources in healthcare settings.

Role of Healthcare Providers

- **Accurate Diagnosis**

Use appropriate diagnostic tests, avoid prescribing antibiotics for viral infections, and consider 'watchful waiting' for conditions that may resolve without antibiotics.

- **Appropriate Prescribing**

Choose the right antibiotic for the specific infection, use narrow-spectrum antibiotics when possible, and prescribe the correct dose and duration.

- **Patient Education**

Explain why antibiotics aren't always necessary, discuss antibiotic resistance and its implications, and provide guidance on symptomatic relief for viral infections.

- **Follow-up**

Monitor patient progress and adjust treatment if needed, and encourage patients to report side effects or lack of improvement.

- **Adherence to Guidelines**

Stay updated on local and national antibiotic prescribing guidelines, and implement evidence-based practices in daily clinical work.

- **Collaboration**

Consult with infectious disease specialists when needed, and participate in multidisciplinary antimicrobial stewardship teams.

- **Documentation**

Clearly document the rationale for antibiotic use, and record antibiotic allergies and previous antibiotic use accurately.

- **Continuous Education**

Participate in ongoing education about antimicrobial resistance and stewardship, and attend relevant workshops or conferences.

Barriers to Overcome

● Early 1900s

Lack of understanding about the role of antibiotics and the emergence of resistance

● 1990s-2000s

Increasing recognition of antibiotic resistance as a major public health threat

● 2010s-present

Ongoing time constraints and patient expectations hindering implementation of stewardship programs

● Future

Overcoming technological and infrastructure limitations to enable effective antimicrobial stewardship

● 1940s-1970s

Widespread use of antibiotics without consideration for appropriate prescribing practices

● 2000s-2010s

Insufficient education and training of healthcare providers on antimicrobial stewardship

● Present day

Lack of institutional support and limited access to infectious disease specialists in some settings

Barriers to Antimicrobial Stewardship

- **Lack of Dedicated Resources**

Limited funding, staffing, and time available to implement and maintain a robust antimicrobial stewardship program.

- **Lack of Prescriber Education and Engagement**

Insufficient training on antimicrobial resistance, appropriate prescribing practices, and the importance of antimicrobial stewardship among medical providers.

- **Fragmented Healthcare Systems**

Challenges in coordinating antimicrobial stewardship efforts across different healthcare settings, such as hospitals, outpatient clinics, and long-term care facilities.

- **Diagnostic Uncertainty**

Difficulty in accurately determining the cause of infections, leading to unnecessary or inappropriate antimicrobial prescriptions.

- **Pressure to Prescribe Antimicrobials**

Perceived patient expectations or demands for antimicrobial treatment, even in cases where they may not be clinically indicated.

- **Concerns about Liability**

Fear of negative outcomes or legal consequences if antimicrobial treatment is withheld or delayed, despite the potential benefits of antimicrobial stewardship.



Impact of Time Constraints

Time constraints faced by medical providers can significantly hinder their ability to uphold antimicrobial stewardship principles. Busy clinical settings, with back-to-back patient appointments and pressure to maintain high patient throughput, often leave little room for providers to thoroughly assess each patient's need for antibiotics or engage in detailed patient education.

Overcoming Time Constraints



Understand Time Pressures

Recognize the significant time constraints and competing priorities that medical providers face, such as managing high patient volumes, completing administrative tasks, and coordinating care across multiple providers.

Optimize Workflow

Implement strategies to streamline antimicrobial stewardship activities and integrate them seamlessly into the provider's existing workflow, minimizing disruption and time investment.

Leverage Technology

Utilize electronic health records, decision support tools, and other technology to automate data collection, analysis, and reporting, reducing the time required for manual tasks.

Delegate Responsibilities

Empower other members of the healthcare team, such as pharmacists, nurses, and infection prevention specialists, to take on certain antimicrobial stewardship responsibilities, freeing up the provider's time.

Prioritize High-Impact Interventions

Focus on the most impactful antimicrobial stewardship interventions that can yield the greatest benefit with the least time investment, such as targeted de-escalation of broad-spectrum antibiotics.



Lack of Antimicrobial Stewardship Education

Antimicrobial stewardship programs aim to optimize the use of antimicrobial agents, improve patient outcomes, and reduce the development of antimicrobial resistance. However, a lack of education and training for medical providers on antimicrobial stewardship principles can be a significant barrier to effective implementation of these programs.

Addressing Resistance to Change

Provider Concerns About Antimicrobial Restrictions

Perceived Burden of Antimicrobial Stewardship Programs

Lack of Awareness of Antimicrobial
Resistance Risks

Resistance to Changes in Prescribing Habits

Leveraging Technology for Antimicrobial Stewardship

Electronic Medical Records (EMRs)

Integrate antimicrobial stewardship protocols and decision support tools within EMRs to guide clinicians in appropriate antibiotic selection, dosing, and duration.

Clinical Decision Support Systems (CDSS)

Develop CDSS that provide real-time antibiotic recommendations based on patient data, microbiology results, and local antibiotic resistance patterns.

Automated Antibiotic Surveillance

Leverage technology to monitor antibiotic usage, identify inappropriate prescribing patterns, and generate real-time reports for antimicrobial stewardship teams.

Telehealth and Remote Consultation

Enable remote antimicrobial stewardship services and consultations with infectious disease specialists to support providers in rural or underserved areas.

Automated Alerts and Notifications

Implement systems that provide automated alerts for specific antibiotic orders, identified resistant organisms, or deviations from institutional antibiotic guidelines.

Strategies for Effective Stewardship

Accurate Diagnosis

Use appropriate diagnostic tests, avoid prescribing for viral infections, and consider watchful waiting when appropriate.

Appropriate Prescribing

Choose the right antibiotic, use narrow-spectrum antibiotics when possible, and prescribe the correct dose and duration.

Patient Education

Explain why antibiotics are not always necessary, discuss antibiotic resistance, and provide guidance on symptomatic relief for viral infections.

Adherence to Guidelines

Stay updated on local and national antibiotic prescribing guidelines and implement evidence-based practices in daily clinical work.

Collaboration and Documentation

Consult with infectious disease specialists, participate in multidisciplinary stewardship teams, and clearly document the rationale for antibiotic use.

Continuous Education and Monitoring

Participate in ongoing education about antimicrobial resistance, review the need for continued antibiotic therapy, and be aware of local resistance patterns.

CDC Recommendations for Providers

- **Know when antibiotics are needed**

Antibiotics are only needed for treating certain infections caused by bacteria, not viral infections.
- **Prescribe the right antibiotic**

Use local antibiotic resistance data to inform prescribing decisions and prescribe the narrowest spectrum antibiotic that will be effective.
- **Reassess antibiotic prescriptions**

Review patient information and culture results within 48-72 hours to determine if antibiotic therapy can be stopped or changed.
- **Document antibiotic prescriptions**

Record the indication, drug, dose, and duration for every antibiotic prescription.
- **Engage patients in stewardship**

Educate patients about when antibiotics are and are not needed, and discuss the potential harms of antibiotic use.
- **Prevent infections**

Promote immunization, infection control, and hand hygiene to reduce the need for antibiotics.

Case Study: Implementing Antimicrobial Stewardship

Milestone 1

Conducted provider education sessions on the importance of antimicrobial stewardship and the impact of inappropriate antibiotic use.

Milestone 3

Implemented real-time audit and feedback process to review antibiotic prescriptions and provide personalized recommendations to providers.

Milestone 5

Provided regular performance feedback to providers, highlighting their antibiotic prescribing patterns and opportunities for improvement.

Milestone 7

Collaborated with hospital leadership to secure dedicated resources and support for the antimicrobial stewardship program.

Milestone 2

Established a multidisciplinary antimicrobial stewardship team, including infectious disease specialists, pharmacists, and key clinical stakeholders.

Milestone 4

Developed and distributed antimicrobial prescribing guidelines tailored to the organization's patient population and

Milestone 6

Integrated antimicrobial stewardship into the organization's electronic health record system to streamline workflow

“Healthcare providers are the frontline champions of antimicrobial stewardship, with the power to significantly impact appropriate antibiotic use and curb the spread of resistance through their prescribing practices and patient education efforts.”

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

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