Nurse-driven Antibiotic Stewardship: Multisite Qualitative Study of Perceived Barriers to Recommended Practices

Prof. Eileen J. Carter, New York-Presbyterian Hospital

Overview of antimicrobial resistance and antimicrobial stewardship programs (ASPs)

Describe nurses’ involvement in ASPs

Results from a multisite qualitative that aimed to explore barriers and facilitators to nurse-driven antibiotic stewardship

Outline
Antimicrobial Resistance

- Organisms develop resistance to the antibiotics designed to kill them
- Unnecessary antibiotic use = major cause of antibiotic resistance
  - Approximately 55% of antibiotics are unnecessary or inappropriate (CDC)
- Global and national public health priority
  - 71st United Nations General Assembly
  - Centers for Medicare and Medicaid Services
  - Joint Commission


WHO: What is antimicrobial resistance (AMR)?

https://www.youtube.com/watch?v=LH0IPmSNj&list=PL9S6xGsoqIBXP4hGamIB-CnpxzyWmW-mr

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Global and National Public Health Priority

• International & National Focus on Antimicrobial Resistance
  • 71st United Nations General Assembly
  • Centers for Medicare and Medicaid Services
  • Joint Commission

Antimicrobial Stewardship Programs (ASPs)

• ASPs - coordinated evidence-based efforts that promote appropriate antibiotic use
• Proven effectiveness
  • Reduce unnecessary antibiotic use
  • Decrease the incidence of antibiotic resistant bacteria and Clostridium difficile
• Membership and scope
  • Physicians and pharmacists with infectious disease training
  • Largely oversee and authorize the prescribing of antibiotics
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Outline

Overview of antibiotic resistance and antibiotic stewardship programs (ASPs)

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Results from a multisite qualitative that aimed to explore barriers and facilitators to nurse-driven antibiotic stewardship

Nursing Partnership: Largely Absent in Current ASP Efforts

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Table 1. Overlap of Nursing Activities With Function Attribution in Current Antimicrobial Stewardship Models

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<th>Nursing</th>
<th>Microbiology</th>
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Abbreviations: IV, intravenous; PD, per os by mouth.

Olans, Olans & DeMaria Jr. 2016 Clinical Infectious Diseases

How do ASP guiding documents specify nurses’ involvement in ASPs?
Nurse-driven Antibiotic Stewardship: Multisite Qualitative Study of Perceived Barriers to Recommended Practices
Prof. Eileen J. Carter, New York-Presbyterian Hospital

Joint Commission ASP Standard

Reporting: Regularly reporting information on the antimicrobial stewardship program, which may include information on antibiotic use and resistance, to doctors, nurses, and relevant staff.


CDC – Core Elements of ASPs

Nurses can ensure that cultures are performed before starting antibiotics. In addition, nurses review medications as part of their routine duties and can prompt discussions of antibiotic treatment, indication, and duration.

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IDSA Guidelines & Nursing Involvement in ASPs

Evidence Summary: Education is a common tool for ASPs. Strategies include educational meetings with didactic lectures and distribution of educational pamphlets and materials. No comparative studies are available to determine which educational strategy is most effective. Educational strategies should include medical, pharmacy, physician assistants, nurses, pharmacists, and nursing students and trainees. In a survey of fourth-year medical students...


ASP Guiding Documents Fail to Account for Nurses' Overarching Antibiotic-Related Responsibilities

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Abbreviations: IV = intravenous; IO = intranasal
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Nurse-Driven Antibiotic Stewardship

Clinical Infectious Diseases

The Critical Role of the Staff Nurse in Antimicrobial Stewardship—Unrecognized, but Already There
Richard A. Brum, MD, D. D. French, and Alfred W. Johnson Jr.

National Recognition of Nurses’ Widespread Antibiotic-Related Responsibilities

Suggestions from the Workgroup

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www.webbertraining.com
Outline

Overview of antibiotic resistance and antibiotic stewardship programs (ASPs)

Describe nurses' involvement in ASPs

Results from a multisite qualitative that aimed to explore barriers and facilitators to nurse-driven antibiotic stewardship

Publication

Exploring the nurses' role in antibiotic stewardship: A multisite qualitative study of nurses and infection preventionists

Funding: This research was funded by the APIC Heroes Implementation Research Scholar Award Program 2017-18, which was supported by an educational grant from BD (PI: Carter)
Nurse-driven Antibiotic Stewardship: Multisite Qualitative Study of Perceived Barriers to Recommended Practices
Prof. Eileen J. Carter, New York-Presbyterian Hospital

Study Aims

1) Explore nurses’ current antibiotic-related roles and responsibilities; and 2) gain input on recommendations that have been proposed that advance and formalize nursing-driven antibiotic stewardship.

Funding: This research was funded by the APIC Heroes Implementation Research Scholar Award Program 2017-18, which was supported by an educational grant from BD (PI: Carter).

Nurse-Driven Antibiotic Stewardship Practice Recommendations

#1
• Documenting drug allergy information accurately

#2
• Encouraging the safe conversion of intravenous (IV) to oral (PO) antibiotics.

#3
• Initiating an antibiotic “time-out” with prescribers.

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Methods

Qualitative study
- Two urban academic hospitals
  - Pediatric
  - Adult

Data collection
- Focus groups & interviews
- March – June 2017
- Clinical nurses, nurse managers, infection preventionists
  - Intensive care units & medical surgical units

Data analysis
- Conventional content analysis

Study Participants

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<th>Participant Role &amp; Unit</th>
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## Findings: Nursing Antibiotic-Related Responsibilities

### Current Responsibilities

- Administering antibiotics timely
- Knowing the indication for antibiotic
- Educating patients on the indication for antibiotics and side effects

---

## Recommendation #1 Findings: Nurses May Document Drug Allergy Information Accurately

### Challenges

- Perception that the information reported by patients is intended for nurses to document in the medical record
- Focus on documentation rather than interpretation
Recommendation #1 Findings: Nurses May Document Drug Allergy Information Accurately

Strategy to Overcome Identified Challenges

“[Nurses] should definitely initiate a conversation and ascertain more information. I think it’s then up to the physician, and you know, or—and, or the pharmacist to—to see if it’s a really true allergy, or do they want to desensitize the patient.”

Recommendation #2 Findings: Nurses May Encourage the IV to PO Switch

Challenges

- Knowledge needs
- Prescriber pushback
- Patient-level considerations
Recommendation #2 Findings: Nurses May Encourage the IV to PO Switch

Strategy to Overcome Identified Challenges

“Education would be needed for providers and for nursing, on what...those antibiotics would be...this is the same PO, so we could use that.”

Recommendation #3 Findings: Nurses May Initiate an Antibiotic Time-Out

Challenges

• Duplicative work
• Prescriber pushback
• Knowledge gaps
• Workflow considerations
Recommendation #3 Findings: Nurses May Initiate an Antibiotic Time-Out

“Specify and provide guidance on the specific elements of antibiotic management that nurses should review...we need... an algorithm, and we need to educate ourselves, [because] otherwise we’re not going to feel ...empowered.”

Discussion

- Knowledge needs
  - Nurses reported knowledge needs
  - Antibiotic management, in general, and nurses’ roles and responsibilities related to antibiotics
  - Tailoring the 5 rights of medication administration to antibiotics
  - Previous work identified additional opportunities for improvement
    - 171 (37%) familiar with phrase antimicrobial stewardship
    - 255 (55%) able to identify a drug intolerance

Greendyke et al. Infection Control and Hospital Epidemiology (accepted 2017)

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Nursing Education Fails to Prepare Nurses to Become Stewards of Antibiotic Use

Pre-Licensure
“...Infection control issues, such as drug resistant organisms and management.”

Post-Licensure

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Strengths

- Recommended qualitative methods employed to ensure the trustworthiness of data
  - Verbatim transcriptions
  - Triangulation of data sources, investigators
  - Ongoing assessments of the application of codes

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Limitation

- Transferability of study findings
  - Study conducted in two hospitals that were part of the same healthcare system in New York

Conclusions

- Nurses expressed enthusiasm to partner in antibiotic stewardship efforts
- Challenges to nurse-driven antibiotic stewardship
  - Lack of consistently defined nurse-driven antibiotic stewardship responsibilities (CDC core elements vs. CDC/ANA white paper vs. Joint Commission)
  - Knowledge needs
  - Prescriber pushback
  - Workflow considerations
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Valuable Educational Resources

Acknowledgements

David P. Calfee, MD, MS
E. Yoko Furuya, MD, MS
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Elizabeth Salsgiver, MPH
Alexandra Shelley, MS, FNP-BC
William Greendyke, MD

Members of the ANA/CDC Working Group Conference
Sharon Morgan, MSN, RN, NP-C
Arjun Srinivasan, MD

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Questions?

Thank you!

www.webbertraining.com/schedule1.php

April 10, 2018
(FREE European Teleclass – Denver Russell Memorial Teleclass Lecture)
HOPES, HYPES, AND MULTIVALLATE DEFENCES AGAINST ANTIMICROBIAL RESISTANCE
Speaker: Prof. Neil Woodford, Imperial College London and Public Health England

April 12, 2018
UNDERSTANDING RISK PERCEPTIONS AND RESPONSES OF THE PUBLIC, HEALTHCARE PROFESSIONALS, AND THE MEDIA: THE CASE FOR CLOSTRIDIUM DIFFICILE
Speaker: Dr. Emma Burnett, University of Dundee, Scotland

April 18, 2018
(South Pacific Teleclass)
GENETIC SIMILARITIES BETWEEN ORGANISMS ISOLATED FROM THE ICU
Speaker: Prof. Slade Jenson, Western Sydney University, Australia

April 19, 2018
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