

Title:

Antimicrobial Stewardship: A Comprehensive Literature Review of the Nursing Role in Preventing Multi-Drug-Resistant Infections

Casey N. May

Kaitlyn E. Thormahlen

Renee M. Vittone

Celina C. Calo

School of Nursing, MCPHS University, Boston, MA, USA

Session Title:

Global Perspectives on Multi-Drug-Resistant Infections

Slot:

L 10: Sunday, 30 July 2017: 8:30 AM-9:45 AM

Scheduled Time:

8:30 AM

Keywords:

antimicrobial stewardship, multi-drug resistance and nursing role

References:

Abbo, L., Hooton, T., Pereyra, M., Smith, L., & Wyckoff, M. (2012). Nurse practitioners'

attitudes, perceptions, and knowledge about antimicrobial stewardship. *The*

Journal for Nurse Practitioners, 8(5), 370-376.

Hertogh, Hulscher, M., Mouton, J., Prins, Overdiek, H., J. M., Schuts, E., Stuart,

J., Verduin, C. (2016). Current evidence on hospital antimicrobial

stewardship objectives: A systematic review and meta-analysis. *The Lancet Infectious*

Diseases, 16(7), 847-856.

Llor, C. & Bjerrum, L. (2014). Antimicrobial resistance: Risk associated with antibiotic overuse

and initiatives to reduce the problem. *Therapeutic Advances in Drug Safety*, 5(6), 229-

241.

Abstract Summary:

The purpose of this literature review was to determine the role of the nurse in antimicrobial stewardship in the hospitalized patient. The reviewed articles indicated that nurses should have an active role in hand hygiene, education, knowledge of medications, overprescribing practices, and the development of policies and protocols.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
----------------------------	---------------------------------

<p>The learner will be able to identify the role of antibiotics in the development of multi-drug resistant bacteria and specific infection prevention measures.</p>	<p>The purpose of this integrated literature review is to determine the nurse's role in antimicrobial stewardship in preventing multi-drug resistant infections in the hospitalized patient.</p>
<p>The learner will be able to verbalize interventions the nurse can perform to prevent multi-drug resistant infections.</p>	<p>Methods: The inclusion criteria for selected studies included primary research articles published within the last five years, which incorporated various search terms stated below. Both quantitative and qualitative studies were included. The quantitative studies were of experimental, quasi-experimental, cross-sectional, and longitudinal cohort design. The qualitative studies were of phenomenological design.</p>
	<p>Results: The thematic analysis revealed the following themes: overprescription, hand hygiene, education, acquisition of knowledge and compilation of available data, and protocol. The results are broken down by theme, and then further ordered by inclusion or exclusion of the nurse.</p>
	<p>Discussion of findings: In a number of articles, interventions to improve antibiotic stewardship only relate to physicians, but these studies explain that is essential for healthcare providers of all types to be included in antimicrobial stewardship programs (ASPs). The review of the literature proves that the nurse's role in ASPs needs to be further explored, more specifically defined, and accurately implemented. Conclusion: ASPs are a vital factor in reducing the spread of multi-drug resistant organisms. Multi-drug resistance has become an international phenomenon and a strong threat to the human population. Therefore, it is imperative that ASPs continue to be developed and implemented. According to the IOM, nurses play a vital role on the interdisciplinary team, yet the nurse's role in ASPs has not been explicitly stated.</p>
	<p>Recommendation for future research: Further research is necessary to provide structured guidelines that explicitly include the role of the nurse in antimicrobial stewardship in</p>

	preventing multi-drug resistant infections in the hospitalized patient. Limitations: The inclusion criteria could have potentially excluded relevant articles. Importantly, the topic of antibiotic stewardship is a relatively new one, resulting in a limited amount of articles addressing it directly.
--	--

Abstract Text:

Purpose: Antimicrobial Stewardship Programs (ASPs) have been developed through collaboration across multiple disciplines and integrated into facilities to combat multi-drug resistant organisms. The purpose of these programs is primarily to educate clinicians on appropriate antibiotic use, and to implement evidence-based standards of practice in order to improve patient safety and quality of patient care. There is much controversy regarding interdisciplinary roles in antibiotic stewardship. This literature review aims to bring to the forefront the already present, yet largely understated role of the nurse. It is likely that physicians, pharmacists, and nurses do not recognize what they can do to prevent the over prescription and improper use of antibiotics. According to Olans (2015), many nurses do not directly see their impact in antimicrobial stewardship programs. Nurses are the heart of the healthcare team; they are the sole members who see patients on an around-the-clock basis. One of the most important factors when discussing what nurses can do to address the issue is to get nurses themselves to recognize that they do in fact have a role in an antibiotic stewardship. The purpose of this integrated literature review is to determine the nurse's role in antimicrobial stewardship in preventing multi-drug resistant infections in the hospitalized patient.

Methods: The inclusion criteria for selected studies included primary research articles published within the last five years, which incorporated various search terms stated below. Both quantitative and qualitative studies were included. The quantitative studies were of experimental, quasi-experimental, cross-sectional, and longitudinal cohort design. The qualitative studies were of phenomenological design. There were 19 primary research articles and one Cochrane review used. Including a Cochrane review was significant to our literature review because it provided us with a strong, evidence-based, systematic review of published healthcare research. Databases used were CINAHL and Ovid. Search terms used were "nursing", "nursing role", "nursing care", "nursing interventions", "microbial", "antibiotic stewardship", "multi-drug resistance", "infection control", and "patient education".

Results: Though increasing research has been conducted regarding ASPs in recent years, these programs are still relatively new, dating back only about 15 years. Research has shifted from studying "miracle drugs" to studying the increase in antibiotic resistance, related infections, and the roles healthcare providers play in maintaining the health of the public. As previously noted, the gold standard for ASPs is the CDC's "Core Elements of Hospital Antibiotic Stewardship Programs" which only mentions "nurse" four times (CDC, 2014). The focus while examining the articles obtained for the literature review was identifying similar themes that group members felt targeted ASPs, while simultaneously determining how often "nurse" was mentioned. It was quickly discovered that only 50% of articles included in the table displayed the word "nurse". The thematic analysis revealed the following themes: overprescription, hand hygiene, education, acquisition of knowledge and compilation of available data, and protocol. The results are broken down by theme, and then further ordered by inclusion or exclusion of the nurse. Articles with multiple themes were included in one or more sections.

Conclusion: ASPs are a vital factor in reducing the spread of multi-drug resistant organisms. Multi-drug resistance has become an international phenomenon and a strong threat to the human population. Therefore, it is imperative that ASPs continue to be developed and implemented. According to the IOM, nurses play a vital role on the interdisciplinary team, yet the nurse's role in ASPs has not been explicitly stated. The themes throughout the literature review include the impact that proper assessment or

screening has on the overprescription of antibiotics, the importance of the basic yet fundamental tool of hand hygiene in preventing the spread of multi-drug resistant organisms, how education can disseminate previous and upcoming knowledge, and how improved infection protocols can establish new expectations for the entire interdisciplinary team. Each of these initiatives should be clearly stated as a responsibility to be carried out by the nurse. Further research is necessary to provide structured guidelines that explicitly include the role of the nurse in antimicrobial stewardship in preventing multi-drug resistant infections in the hospitalized patient.