Assessment of current antimicrobial stewardship policies and resources: a focus group project

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Abstract. *Introduction*: Antimicrobial stewardship (AS) within acute care facilities is a requirement for Accreditation Canada's Required Organisational Practices. In order to obtain a baseline evaluation of current AS processes, a focus group approach was used to qualitatively assess frontline pharmacy staff and leadership perspectives on AS resources.

Methods: A semi-structured interview process was applied to focus groups comprised of Pharmacy Services employees throughout Alberta Health Services in Alberta, Canada. A thematic analysis of transcripts was done independently by two investigators, and consensus was reached on identified themes and topics. Codes were recorded for prevalence and total number of mentions. A combination of conventional and deductive approaches was used to identify themes.

Results: A total of 200 (10%) pharmacy services staff members participated in the focus groups. Eight main themes were identified: antimicrobial resources, influences on antimicrobial utilisation, barriers to antimicrobial stewardship, establishing AS teams, education needs, improving communications, antimicrobial utilisation concerns, and enablers for improvement. Two hundred and six topics were identified to support the themes, with 1924 data points. Prominent topics included ubiquitous awareness of a provincial antimicrobial stewardship reference, prescriber preferences influencing antimicrobial utilisation, and desire to improve interprofessional teamwork, communication and educational opportunities.

Conclusions: A broad description of the culture of antimicrobial use showed that the themes are interrelated. To successfully change practice, one must take into account the complexity of the relationship between these perceptions.

Introduction

Antimicrobial resistance is a significant worldwide problem associated with considerable morbidity, mortality, and cost to the healthcare system. In the United States, antimicrobial-resistant infections contribute to ~23 000 deaths per year.[1]

Antimicrobial Stewardship (AS) is defined as coordinated interventions designed to improve and measure the appropriate use of antimicrobial agents by promoting the selection of the optimal antimicrobial drug regimen including dosing, duration of therapy, and route of administration.[2] Major objectives of AS are to achieve the best clinical outcomes related to antimicrobial use while minimising toxicity and other adverse events, thereby limiting the selective pressure on bacterial populations that drives the emergence of antimicrobial-resistant strains. Evidence has demonstrated that AS interventions may reduce costs associated with suboptimal antimicrobial use, and can improve outcomes associated with antimicrobial resistance.[3] For example, the Centers for Disease Control and Prevention recently published a report showing that AS interventions impacted prescribing of antibiotics, and subsequently resistance patterns.[4]

Accreditation Canada is an independent, not-for-profit organisation that evaluates processes used to assess and improve the quality, efficiency, and effectiveness of healthcare organisations within Canada as well as internationally. Accreditation Canada's Required Organisational Practices (ROP) are defined as 'an essential practice that organisations must have in place to enhance patient and client safety and minimise risk'. Accreditation Canada has an ROP that requires acute care facilities to have an AS program in place to be accredited.[5]

Within our organisation, Alberta Health Services (AHS), Alberta, Canada, several AS policies have been implemented, such as formulary policies to promote the optimal use of antimicrobial agents. These policies include restrictions and guidelines on antimicrobial use, automatic stop or review orders and therapeutic interchanges (TI). Recognising that pharmacists' role as frontline clinicians and evaluators of medication utilisation, the responsibility to create and enforce AS policies has primarily fallen under Pharmacy Services.[6] The perceived effectiveness of these policies and resources, as well as potential duplication of efforts to improve antimicrobial use, has not been internally evaluated, and this information is vital for the success of AS programs within acute care facilities.

Previous literature describes perceptions on AS and the barriers to implementation.[7] The culture of the healthcare system, including the influence of senior medical staff, nursing personnel, and patients on antimicrobial prescribing,[8] previous personal experiences superseding evidence for selection of therapy,[9,10] and conflicting guidelines[11] are examples where people's perceptions influence adherence to AS principles. The objective of our study was to investigate and report staff perceptions regarding several aspects of AS, including current policies and resources, barriers to applying AS and formulary policy processes, and suggestions for creating a successful AS program.

Methods

Definitions

For the purposes of this study, 'antimicrobial stewardship tools' were defined as methods or processes that specifically direct the choice of antimicrobial agents, which included but were not limited to, TI's, automatic stop dates, and formulary restrictions. Resources were considered sources of information that would assist the clinician in choosing antimicrobial therapy. Influences are factors that shape the choice of therapy in any manner. These included, but were not limited to, reference books, formulary listings, practice guidelines, and specialist consultations.

In qualitative research, there are no common definitions for theme or topic.[12] The following definitions were used to guide data review:
• Theme: an overarching statement, encompassing an idea common throughout the focus group transcripts.

• Topic: granular statement that is applied (coded) to an excerpt of a transcript (data point) to support one or more themes.

Study design and time frame

This was a cross-sectional quality-improvement study conducted within the Pharmacy Services departments of AHS and Covenant Health (a faith-based parallel organisation). Alberta is a province of 3.6 million individuals, and all Albertans are provided publicly funded health coverage through the Canada Health Act.[13] AHS consists of five zones (two urban, and three rural) responsible for delivery of all aspects of healthcare, including facility-based care. There are 105 facilities in the province that receive Pharmacy Services either onsite or remotely. Pharmacy Services consist of drug distribution and clinical pharmacy activities, and are supported by province-wide programs, including Drug Stewardship.

We used a semi-structured interview to gather information from focus group participants (FGP) in April to June 2013. A combination of closed- and open-ended questions was used to generate discussion. Closed-ended questions were used to generate a catalogue of resources and suggestions. Open-ended questions were used to create discussion in order to gauge the culture of the organisation.

Data source

Employees of Pharmacy Services, including pharmacists, pharmacy technicians and assistants, clinical practice leaders, students and managers, within AHS and Covenant Health were eligible for inclusion in this study, and invited to participate via a standardised email message and email reminders. Twenty-four sites had sufficient interest and participation to conduct a focus group.

Data collection and coding

Each focus group was recorded with either Microsoft Lync or Apple Word Memo, which was then transcribed by a professional transcriptionist.

An Advisory Panel was convened to provide direction to the study protocols and data analysis. It consisted of Infectious Disease experts and leadership within AHS and Covenant Health. This group, in conjunction with the investigators, employed a consensus methodology to determine the themes and topics included in the transcripts (Fig. 1).

Analytic plan

A mixed methodology for qualitative thematic analysis was applied to analyse the transcripts. A conventional approach generated a catalogue of topics in Themes 1, 7 and 8.[14] For this approach, data was taken directly from participant comments, with little or no interpretation by the study investigators. A deductive approach was applied when interpretation of participant responses and conversations was needed in order to determine which theme applied to the data point.[15] This