

A Theory-Informed Assessment of the Barriers and Facilitators to Nurse-Driven Antimicrobial Stewardship

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Background

- Antimicrobial Stewardship (AMS) programs aim to improve the appropriate use of antimicrobial agents in healthcare settings
- Nurses outnumber other health care professionals (HCPs) in acute care hospitals and are an underutilized workforce with potential to participate in AMS activities
- There is little published literature describing nurses' participation in AMS activities
- Assessing and implementing AMS activities in nurses' practice requires identification of potential barriers and facilitators to sustain behavior change

Objectives

- To identify modifiable barriers to nurses promoting intravenous (IV) to oral (PO) antimicrobial stepdown
- To identify facilitators that could be enhanced to aid nurses in promoting IV to PO antimicrobial stepdown

Methods

Design

- Prospective, qualitative, descriptive study using semi-structured one-on-one interviews

Setting, Sampling, Timeframe

- A general medicine/stroke care ward, a general/vascular surgery ward, and a general medicine/oncology ward at Kelowna General Hospital (KGH)
- Convenience sampling of 15 nurses
- Interviews conducted January - February 2017

Directed Content Analysis

- Coding guide developed from prior literature
- Thematic analysis of interviews for 14 Theoretical Domains Framework (TDF) domains
- The coding frequency of utterances within each domain were described as barriers or facilitators to nurses' promotion of IV to PO stepdown using the Capability, Opportunity, Motivation – Behavior (COM-B) model

Table 1: Participants

Nurse Title	Mean Years Experience (Range)	Medical Ward (n)	Surgical Ward (n)
RN	11 (2-22)	6	2
LPN	16 (6-41)	5	2
Total	13.5 (2-41)	11	4

Table 2: Interview Results

TDF Domain	Utterances n = 480
Beliefs about Consequences	74
Knowledge	69
Environmental Context and Resources	62
Social and Professional Role and Identity	61
Reinforcement	48
Social Influence	39
Skills	36
Intentions	19
Behavioral Regulation	19
Beliefs about Capabilities	19
Goals	18
Memory Attention and Decision Processes	15
Optimism	1
Emotion	0

Table 3: Thematic Analysis of Results – Barriers

Capability	<ul style="list-style-type: none"> • Insufficient knowledge about IV to PO stepdown • No current prompts reminding nurses to assess for IV to PO stepdown • Lack of standardized procedures to convey patients' eligibility for stepdown
Opportunity	<ul style="list-style-type: none"> • Perceived lack of prescriber accessibility and cooperation with nurse promotion of IV to PO stepdown
Motivation	<ul style="list-style-type: none"> • Lack of self-confidence in promoting IV to PO stepdown • IV to PO stepdown seen as role of prescriber • Perceived increase in adverse effects and diminished efficacy of PO antibiotics compared to IV • IV to PO stepdown viewed as low priority task amongst other activities

Table 4: Thematic Analysis of Results – Facilitators

Capability	<ul style="list-style-type: none"> • Ability to perform patient assessment for IV to PO stepdown and communicate to team • Patient care rounds and team huddles provide a venue to discuss IV to PO stepdown
Opportunity	<ul style="list-style-type: none"> • Pre-existing nurse - nurse collaboration and familiarity with patient • Pre-existing variety of resources for nurse education and training
Motivation	<ul style="list-style-type: none"> • Nurses feel confident in becoming leaders in promoting IV to PO stepdown with the support of colleagues and other HCPs • Nurses feel that increasing IV to PO stepdown rates will increase nurse efficiency • Nurses feel they would be persistent to perform IV to PO stepdown

Rigor and Trustworthiness

- Standardized semi-structured interviews conducted by single investigator
- One dedicated transcriber performed all analyses using validated NVIVO software
- Reflexive journaling performed throughout recording and analysis of interviews
- TDF-based coding manual used to guide thematic analysis
- Participant checking during interviews clarified intent of nurse comments
- Coding consensus achieved among two investigators

Conclusions

- Themes pertaining to barriers and facilitators in nurses' capability, opportunity, and motivation driving nursing behavior (COM-B) to participate in IV to PO stepdown of antimicrobials were identified
- In future research, these themes will be mapped back to appropriate behavioral change interventions that address the modifiable barriers and enhance the existing facilitators to nurses participating in IV to PO stepdown of antimicrobial agents
- These behavioral change interventions will then be implemented with the goal of involving nurses in the AMS activity of IV to PO stepdown of antimicrobials

