

The Initiative

Prescription Audit and Feedback:

To promote appropriate treatment of infections and prevent overuse of antibiotics, the Antimicrobial Stewardship Team at Vancouver Coastal Health (ASPIRES) launched the Prescription Audit and Feedback initiative at Vancouver General Hospital (VGH) in March 2013. The initiative expanded to Lions' Gate Hospital (LGH) and Richmond Hospital (RH) in the following 12 months.

This quality improvement initiative includes evaluating patients' antibiotic therapies and making recommendations to physicians to optimize treatments based on best practices.

The initiative targets:

- 1) broad-spectrum antibiotics to preserve their efficacy for treatment of severe infections,
- 2) intravenous (IV) antibiotics to step-down to oral agents and prevent complications associated with IV administration.

The Evaluation Plan

Process Measures: Number and Types of Recommendations and Acceptance Rates

The ASPIRES team collects information on all Treatment Recommendations made, including Types of Recommendations. ASPIRES also estimates the proportion of recommendations that are accepted and implemented by treating physicians through spot audits.

Outcomes Measures:

Antibiotic Utilization

An effectiveness indicator for this initiative is the decrease in utilization of targeted antibiotics. ASPIRES measures and compares utilization of antibiotics at baseline and post-intervention, using Defined Daily Dose (DDD) to standardize magnitude of use. DDIs are standard units that are defined by WHO as "the assumed average maintenance dose per day for a drug used for its main indication in adults."

Challenges: Data quality and availability across different sites are the main challenges in measuring antibiotic utilization, notably at coastal, rural, and remote facilities.

The Results

Measures	VGH	LGH	RH
	Mar 15, 2013 – Mar 31, 2015	Oct 1, 2013 – Mar 31, 2015	Apr 11, 2014 – Mar 31, 2015
Number of Treatments Recommendations (N Patients)	1,210	266	127
Recommendations Accepted (%)	78%	59%	96%

Table 1. Summary of ASPIRES Audit and Feedback Interventions

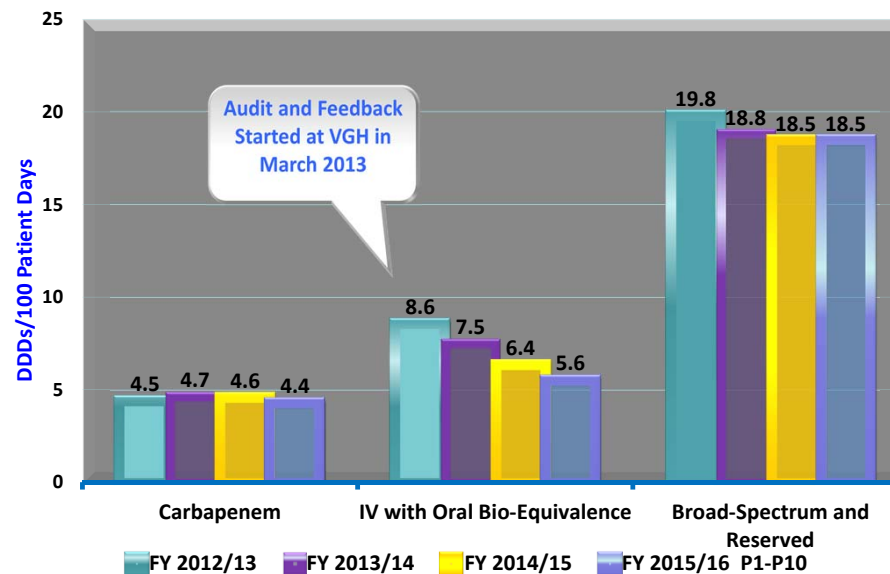


Figure 1. Target antibiotics utilization in target acute wards at VGH

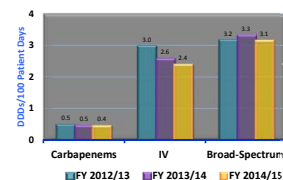


Figure 2. Target antibiotics utilization (based on purchase data) at LGH (including Evergreen facilities)

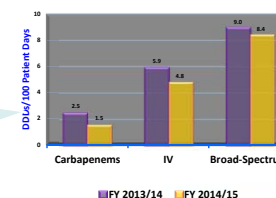


Figure 3. Target antibiotics utilization in acute wards at RH

The Summary of Notable Findings

Process Measures:

ASPIRES has made treatment recommendations for 1,803 patients to optimize their antibiotics therapies.

Acceptance rates for these recommendations range from 59% at LGH to 96% at RH (Table 1).

Majority (44%) of recommendations were for "discontinuation of unnecessary antibiotics" or "narrowing the spectrum of antibiotics."

Outcomes Measures:

Since the initiation of Audit and Feedback, the overall use of targeted antibiotics has been reduced at all three sites by:

VGH: 3 DDDs/100 Patient Days

RH: 2.6 DDDs/100 Patient Days

LGH: 6.6 DDDs/100 Patient Days

Figures 1-3 display a steady decline in the use of IV antibiotics at VGH (25%), RH (18%) and LGH (18%). Similarly, at VGH and RH (facilities with high Recommendation Acceptance Rates), use of broad-spectrum antibiotics has also declined.

Key Finding:

In FY 2014/15, use of IV antibiotics at target wards decreased by 25% at VGH and 18% at LGH and RH, compared to baseline (pre-intervention) utilization at these facilities.

The Future Evaluation Plans

With continuation of this initiative, ASPIRES plans to perform further evaluations using a Time Series analysis in 2015/16. This methodology would test for significance of reductions in antibiotic use, while adjusting for seasonal variations and significant covariates.

Thanks!

ASPIRES would like to thank the Physicians, Pharmacists, and Hospital Staff at VCH for their continued support of our programs.