

The Power of Innovation

A health care system to meet our needs
NSW Health
 Symposium Oct 2012

Antibiotic Stewardship... it's as easy as eASY

Harry Collins Award for Achievement in Reducing Healthcare Associated Infections (HAIs)

Introduction

Antibiotic stewardship encourages judicious use of antibiotics. Stewardship strives to fine tune antibiotic utilization with respect to efficacy, toxicity, resistance-induction, cost and discontinuation. A multi-pronged strategy consisting of direct and indirect interventions was devised that included development of an electronic decision support/ registration tool to monitor utilization of restricted antibiotics

Aim

- Optimize clinical outcomes while minimizing unintended consequences of antibiotic use such as toxicity and resistance.
- Develop and implement an electronic solution for improving access to antibiotics while simultaneously providing decision support and prospective feedback to prescribers as well as wider organization
- Reduce healthcare costs associated with the management of Multi-resistant organisms.

Nature of problem

Patient Safety:

- Inappropriate use
- Delay in access
- Delay in pharmacy review

Lack of communication:

- Reactive rather than proactive communication process.
- Limited decision making support (infectious diseases/ Pharmacy) as a point of reference.

Access issues:

- Prescribers unaware of restriction status of different antibiotics
- Restricted antibiotics access could not be controlled effectively especially after-hours.

Lack of effective Governance:

- Absence of local guidelines on use of antibiotics
- No formal governance structure



Method

A multidisciplinary Antibiotic stewardship group was established. The groups identified and engaged key stakeholders across the organization. After a consultative phase, a project plan was developed by the group and endorsed by district executives.

Figure 1: Project steering committee membership for the implementation of Antibiotic Stewardship across NBHS.



Plan included recruitment of stewardship pharmacists, launch of a district-wide awareness campaign as well as development of multi pronged intervention strategy that included:

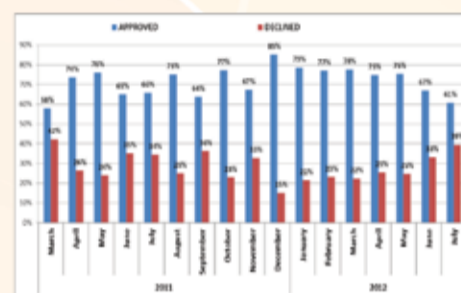
- Development and Implementation of web based electronic Antibiotic Stewardship system (eASY) consisting of:
 - Business process modifying Communication Module
 - Decision Support/Guideline Module
 - Feedback/Reporting Module
- Implementation of Step-down (Intravenous to Oral switch) of therapy process.
- Implementation of Surgical Prophylaxis Guideline.
- Registration with National Antimicrobial Utilization Surveillance program (NAUSP).
- Development and distribution of local Antibigrams i.e resistance patterns of common antimicrobial agents through eASY website.
- Dissemination of all results and documentation through publication on the eASY intranet website, pharmacy newsletter, tabling at relevant divisional and district committees.
- Individual prescriber team based feedback report for restricted antibiotic prescribing through eASY.



Results

100% compliance to registration and feedback process with respect to orders related to restricted antibiotics.

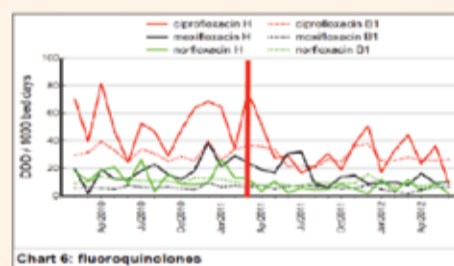
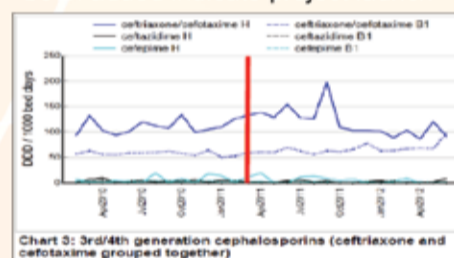
The prospective feedback process utilising eASY resulted in an average of 28% decline rate of requested restricted antibiotics



Significant declines observed in Daily defined doses of key antibiotics

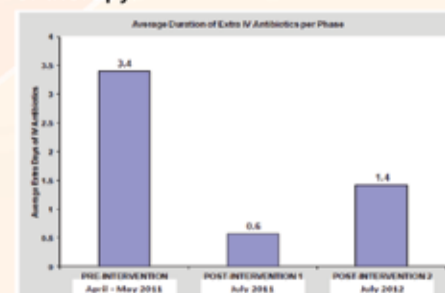
- 50% for Quinolone Antibiotics
- 30% 3rd Gen Cephalosporins
- 25% reduction in Meropenem use

Vertical red lines on figure below has been added indicate project launch



Surgical prophylaxis initiative
 Overall, a 19% improvement (p=0.053) in proportion of patients prescribed appropriate antibiotic regimen

IV to Oral Switch initiative
 57% reduction in patients prescribed inappropriate duration of IV antibiotics (P<0.0002).
 Average extra days of IV antibiotics was reduced by 2.8 days.
 92% reduction in the cost of extra days of therapy.



Sustaining change

- NAUSP reports disseminated periodically
- Project progress disseminated district wide
- Antibiotic Stewardship program information part of medical staff orientation

Conclusion

This project demonstrates that organic organisational change tools benefitting patients can be successfully implemented and can be more cost-effective.

The project has attracted significant interest across New South Wales Health. NBHS is currently in negotiation with other hospitals within NSLHD and across other LHDs for the transfer of eASY and related guidelines.

eASY Resources:

eASY makes resources related to antibiotic use available at the point of requesting. See eASY homepage below:



See Prescriber home screen below.



A copy of a sample Antibigram below:

Acknowledgements

The support of the Northern Beaches Health Service Executive, the Antibiotic Stewardship Pharmacists and the infectious disease staff is acknowledged and appreciated.