Positive Reporting and Appreciative Inquiry in Sepsis (PRAISe)

Learning from Excellence to improve antimicrobial stewardship

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Overview

The PRAISe project was designed to test the Learning from Excellence (LfE) initiative[1] in a Quality Improvement (QI) setting. We used positive reporting and Appreciative Inquiry to facilitate behavioural change in sepsis management and antibiotic stewardship in Paediatric Intensive Care Unit (PICU).

The problem

Sepsis and antibiotic stewardship are recognised globally as serious issues requiring improvement[2,3]. Improvement in these areas relies largely on behavioural change among clinicians.

Conventional safety reporting systems emphasize the role of error reduction to improve safety. The LfE philosophy differs from this deficit-based approach by providing a complementary, positive approach to QI through identification and amplification of excellence.

We hypothesised that positive reinforcement of the following behaviours would lead to a safe reduction in antibiotic consumption:

- Prompt administration of appropriate antibiotics in new infections
- Gold-standard prescribing and regular antibiotic review

Overall aim: to reduce antibiotic consumption in PICU by 5% during study period.

Intervention

Data relating to 4 key process measures were collected daily by the project team:

1. Documentation of decision-time to treat new infection
2. Appropriate antibiotic selection
3. Gold-standard antibiotic prescriptions
4. Timely antibiotic review

Excellence in these processes was reported through the existing LfE system; providing positive feedback to clinicians.

Selected reports were followed with Appreciative Inquiry (AI) interviews to inspire positive change and gain improvement insights.

The study period was divided into 3 periods:

- pre-intervention (3 months)
- intervention (6 months)
- post-intervention (3 months)

> 'Clear communication; everyone's considering sepsis, everyone knows the plan.'
>
> — Nurse

Table 1. Overall reduction in antibiotic consumption during intervention period

	July to December 2016 (control period)	July to December 2017 (intervention period)
Sum of all antibiotic doses	12734	11837
Sum of bed-days	5935	5888
All antibiotic* doses per bed-day	2.15	2.01 = 6.5% reduction
Sum of broad-spectrum antibiotics** doses dispensed	5113	3474
Broad –spectrum** doses per bed-day	0.86	0.59 = 31.3%reduction

*All antibiotics except antifungals and antivirals
** Piperacillin-tazobactam (Tazocin) and Meropenem

Results

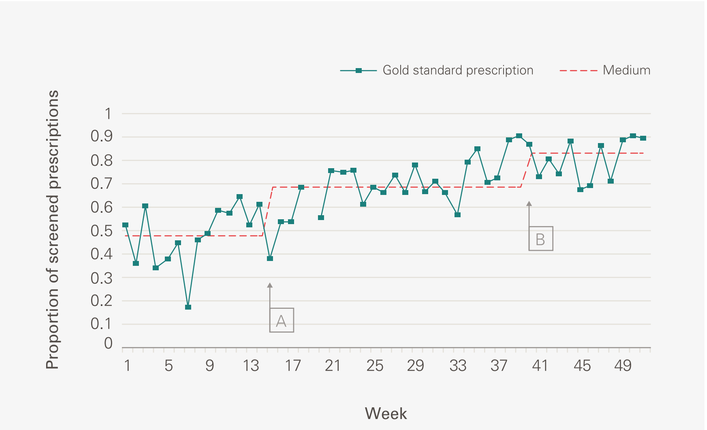
Antibiotic consumption (table 1):

- Overall aim achieved: antibiotic consumption = 6.5% lower than equivalent period of the previous year.
- 31.3% reduction in broad-spectrum antibiotic use.

Behavioural change:

- Significant improvement in processes 3 and 4 (prescribing and antibiotic review) throughout the study period (table1).
- Less impact on other processes.

Figure 1. Run chart of gold-standard prescribing rate.
A = start of intervention period
B = end of intervention period



Lessons learned

- A positive approach can be used as an intervention to bring about change in behaviours.
- The intervention impacted on some behaviours more than others.
- There was less impact in behaviours requiring large staff groups (process 1) – possibly due to failure to reach saturation of the effect within the study period.
- Appreciative Inquiry interviews can be done quickly and can generate tangible insights.

> 'This project should have a knock-on effect for all prescribing.'
>
> — PICU registrar

Next steps

- Data and insights from PRAISe project will be shared through the rapidly growing LfE community.
- A tool kit to help others replicate / adapt our project will be available on the LfE website in 2018; www.learningfromexcellence.com

References

[1] Kelly N, Blake S, Plunkett A. Learning from excellence in healthcare: a new approach to incident reporting. Archives of Disease in Childhood 2016;101:788-791.

[2] Time to Act: Severe sepsis - rapid diagnosis and treatment saves lives. Parliamentary and Health Service Ombudsman report (2013).

[3] Davies, S.C. "Annual Report of the Chief Medical Officer, Volume Two, 2011, Infections and the rise of antibiotic resistance" London: Department of Health (2013)

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