Learning from Excellence (LfE): Sustaining Improvements in Prescribing Behaviour

Dr Phillip Lo, Dr Mathew Davies, Dr Adrian Plunkett
Birmingham Women's and Children's NHS Foundation Trust

Introduction

Patient safety is a key principle in medicine. The traditional approach to patient safety within the NHS aims to identify error or harm, and introduce change to reduce or mitigate risk. This reactive approach includes incident reporting and root cause analysis.

Although intuitive, these methods may miss opportunities to learn from and replicate good practice, whilst also risk creating a culture of blame. Although, it is vital that lessons are learnt from mistakes, adverse events only account for the minority of healthcare interactions[1]. Some parties are even sceptical of the impact of these traditionally employed methodologies, further exacerbated by organisational forgetfulness[2].

BF Skinner advanced behavioural theory with his hypotheses on operating conditioning; that all behaviour is governed by reinforcing and punishing stimuli. There are several benefits of reinforcement compared to punishment, including:

-Punished behaviour is not forgotten, but only suppressed. Therefore the behaviour can return.
-Punishments can increase aggression and fear
-Punishments only tell a person what not to do rather than what to do, whereas reinforcement guides towards a desired behaviour.

Recent psychological research has supported the concept of effective learning from reflection on successes as well as failures[3].

Learning from Excellence (LfE) is an initiative aiming to encourage better practice by acknowledging exceptional activity and attempting to facilitate it into wider practice, in addition to increasing staff morale[4,5]. This in turn increases the resilience; the ability to successfully adapt when faced with adversity, within complex and diverse hospital environments.

A recent pilot study completed at Birmingham Children's Hospital (BCH) demonstrated an improvement in antibiotic prescribing after the introduction of Excellence Reporting (ER)[6]. We aim to demonstrate that the utilisation of an ER approach can reinforce good behaviour and achieve sustained improvement in antibiotic prescribing.

Methodology

This study utilised a continuous improvement methodology, involving weekly point prevalence measurements of gold standard prescribing. Antibiotic prescriptions were examined on treatment charts in the paediatric intensive care (PIC). Documentation of three gold standard identifiers were obligatory for an 'excellent' prescription.

-An indication for prescription
-Duration of antimicrobial course or review date
-Identifiable prescriber

Clinicians completing a gold standard prescription received recognition of their actions through weekly ER reporting. However, clinicians outside PIC did not receive this intervention.

Antibiotic prescriptions completed outside of PIC were compared to the prescriptions written in PIC and the standards of prescribing were observed over time.

Results

793 treatment chart entries were examined in total. 656 (83%) prescriptions were written in PIC, 113 (14%) were written outside PIC and the initial location of 24 (3%) prescriptions were unknown.

Of the gold standard variables, an indication for the antibiotic was documented in 94% (746) of cases, the prescriber was identifiable in 89% (709) of cases and a review date or duration of prescription was documented in 69% (551) of cases.

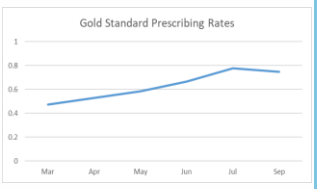

Fig.1 Gold standard prescribing rates throughout the study period

Overall gold standard prescribing rates improved over the seven-month period, from 47% to 75%.

Clinicians on PIC completed more gold standard prescriptions than prescribers from outside PIC, 71% (463/656) compared to 31% (35/113).

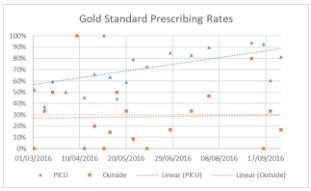

Fig.2 Gold standard prescribing rates inside and outside of PIC

Over the seven-month observation period, there was a greater improvement in PIC prescriptions, increasing from 57% to 89% (Spearman rank correlation test for trend over time, Rs=0.50, p=0.02), compared to those from outside PIC, even despite the proportion of gold standard prescriptions being greater initially. Prescribing standards from outside PIC only increased from 27% to 30% (p=0.67).

Discussions

The significant overall improvement in antibiotic prescribing is very encouraging. The drop after July is probably due to the annual intake of new trainees.

Whether is this just the normal improvement throughout the academic year is initially not discernible. However, the difference in quality between antibiotic prescribing on PIC and outside implies that ER is a significant factor in the sustained behaviour modification. This is probably the consequence of multiple factors including recognition of 'excellent' practice, positive reinforcement of the behaviour and the creation of an environment in which clinicians are striving to be better.

Bandura, another psychologist, furthers Skinner's work by hypothesising that humans can learn though observation; social cognitive theory. Therefore, learning through LfE is not only a tool for individual learning but may also be utilised for group learning.

Other variables may have contributed to the improvements in antibiotic prescribing on PIC. These might include the effect of incident reporting and variations in safeguards, prescribing environments or training. However, these factors are unlikely to produce the observed progressive improvement in performance.

Clinicians on PIC have been pioneers of the LfE initiative within BCH and it is now ingrained into the working environment. Clinicians are enthusiastic about the enterprise and feel encouraged by its impact.

Positive behaviour modification is used in other workplace and sporting environments to improve employee efficiency and effectiveness. It is in its infancy within the NHS but we hope that initiatives like LfE will spread.

Conclusion

An ER initiative appears to be able to produce sustainable behaviour modification and is compatible with the traditional incident reporting methodology, possibly even complementing one another. Implementation of ER in other fields may result in other noticeable improvements.

'What is love except another name for the use of positive reinforcement? Or vice versa.'
-BF Skinner

Maybe an interpretation of this is that positive reinforcement in the work place can inspire a love for work.

References

1. EN de Vries. The incidence and nature of in-hospital adverse events: a systematic review. Qual Saf Health Care. 2008; 17(3): 216–223.
2. M. Peerally et al. The problem with root cause analysis. BMJ Qual Saf. 2017; 26(5): 417-422.
3. S Ellis et al. Systematic Reflection: Implications for Learning From Failures and Successes. Curr Dir Psychol Sci. 2014; 23: 67-72.
4. N. Kelly, S. Blake, A. Plunkett. Learning from Excellence in Healthcare: A New Approach to Incident Reporting. Arch Dis Child. 2016; 101: 788-791.
5. D. Sinton, G. Lewis, D. Roland. Excellence Reporting (Greatix): Creating a Different Paradigm in Improving Safety and Quality. Emerg Med J. 2016; 33: 901-902.
6. G. Morley, N. Kelly, A. Plunkett. Learning from Excellence: Positive Reporting to Improve Prescribing Practice (PRIP). Arch Dis Child. 2016; 101 (Suppl 1): A313.

http://www.learningfromexcellence.com

By your side