

The Champions League - Improving the quality of in-patient antibiotic prescription in Trauma and Orthopaedics

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Abstract

A Trust level audit demonstrated that the trauma and orthopaedic department did not reach its own standards in adhering to Trust antibiotic prescribing guidelines. Junior doctors are the main prescribers of antibiotics during inpatient stays. Local policy states that for all inpatients on antibiotics, the start date, duration, and indication for antibiotics must be documented on the drug card.

Each patient drug card was reviewed by the department pharmacist and it was recorded whether the documentation was in line with Trust policy. A monthly league table, coined 'The Champions League', was created. It was published monthly and displayed in the doctors' office and other clinical areas to highlight which doctors had or had not adhered to the prescribing guidelines.

In August 2012 the monthly audit for the trauma and orthopaedic department included 74 patients. The total number of antibiotic courses prescribed was 28; of these courses only 15 (53.5%) had an indication documented and 15 (53.5%) had a review/stop date documented.

In December 2012, after two published league tables, 61 patients were reviewed. A total of 19 antibiotic courses were prescribed; 18 (94.7%) had the indication documented and 16 (84.2%) had the review/stop date documented.

The standards of prescribing improved within the department and good prescribing practice became ingrained into each doctor's practice. The league table proved to be a novel tool that helped to raise the profile of antibiotic prescribing and change doctor prescribing habits. It created a competitive spirit within the department which improved morale. Doctors responded positively to feedback if they were not achieving the desirable standards, and enjoyed the challenge of improving the standard of prescribing.

Problem

A Trust level audit demonstrated that the trauma and orthopaedic department did not reach its own standards in adhering to Trust antibiotic prescribing guidelines.

Junior doctors are the main prescribers of antibiotics during inpatient stays; as such, it was felt that the best solution to this problem would also stem from junior doctors.

Background

The correct prescription of antibiotics for inpatients is paramount to patient safety. It avoids unnecessary administration, facilitates clear communication between clinicians, and minimises eventual drug resistance. Local policy states that for all inpatients on antibiotics, the start date, duration (and/or end date), and indication for antibiotics must be documented on the drug card.

Antibiotics are among the most frequently prescribed drugs worldwide (1). There is an overuse risk which drives antibiotic resistance, healthcare costs, and healthcare associated infection such as *Clostridium difficile*. The doctor is required to prescribe the correct antibiotic, at the correct dose, and for the correct length of time. It is necessary to influence doctors' prescribing behaviours

and promote rational prescribing of antibiotics. Improving awareness and the implementation of a strict antibiotic policy by all the healthcare institutes is required (2). A Cochrane review found that interventions to reduce excessive antibiotic prescribing to hospital inpatients can reduce antimicrobial resistance or hospital acquired infections, and interventions to increase effective prescribing can improve clinical outcome (3).

Baseline Measurement

Since implementation of the Trust antibiotic prescribing policy, a monthly audit was conducted to quantify adherence across all departments in the hospital. Each patient drug card was reviewed by the department pharmacist and it was recorded whether the documentation was in line with Trust policy (ie, documentation of indication, course length (review/stop date)).

In August 2012 (the start of our project), the monthly audit for the trauma and orthopaedic department included 74 patients, 22 (29.7%) of whom were on antibiotics. Due to some patients being on multiple antibiotics, the total number of antibiotic courses prescribed was 28.

Of these 28 courses of antibiotics, only 15 (53.5%) had an indication documented. Only 15 (53.5%) of the prescribed antibiotic courses had a review or stop date documented.

Design

The Trust guideline defining the minimum information required on the prescription of antibiotics was very clear. It appeared, however, that when put into practice, information was often omitted from drug cards.

As prescribing is done on hand written drug cards it is easy for doctors, during busy periods, to start an antibiotic without clearly documenting duration or indication.

The challenge was to change the departmental attitude towards prescribing antibiotics. This needed to filter through the hierarchy, because all doctors had the responsibility to prescribe antibiotics safely. This required a multidisciplinary action plan with pharmacists, nurses, and doctors acting as a safety net. Each clinician must take ownership of the relevant antibiotic prescription, dispensing, and administration. Nurses were already encouraged to question prescriptions and flag up any antibiotic regimens continuing for unqualified lengths of time. The ward-based departmental pharmacist closely monitored the dispensing of antibiotics and educated doctors in safe and appropriate prescribing. Patients on restricted antibiotics and long courses were reviewed on a weekly basis by the on-call microbiology team. Any unnecessary regimens were brought to the attention of the treating team, which took both a patient safety and educational stance. The managerial team were fully integrated into the project design and provided meeting times and space to educate the team formally at induction and throughout the year.

Strategy

PDSA cycle 1: Initially, an education initiative was launched with the department pharmacist giving a presentation as part of the junior doctor induction. Details of what information to include on drug cards and in the notes when prescribing antibiotics were presented. This was supported by both the lead consultant for senior house offices (SHOs) and the clinical director for trauma and orthopaedics. Information was also included in the written induction booklet provided for SHOs in the department. The pharmacist also provided ad hoc education on the wards when required.

PDSA cycle 2: Failure to improve the documentation on drug cards was noted following the initial change and as a result the department pharmacist approached the trauma and orthopaedic junior doctors forum on how an improvement could be made.

The competitive nature of junior doctors was discussed as well as how strongly they felt about trying to impress consultants, particularly supervisors, on their competence and performance. It was agreed that a "carrot" (reward) system would be more productive than a "stick" (punishment) threat.

A monthly league table - coined 'The Champions League' - was created. This would see the department pharmacist not only collect the information on prescribing, but also the name of the doctor prescribing the antibiotic and in which area information was omitted.

The performance of doctors was scored and put into a league table format. The league was published monthly and could be viewed in the doctors' office and other clinical areas. It was colour coded: green demonstrating those doctors at the top of the league, amber for those needing to improve, and red for those at the bottom of the league facing metaphorical relegation and a remedial 'tap on the shoulder' from the duty pharmacist. This process also created some gentle inter-clinician rivalry. It was a talking point and doctors strived to improve month-on-month.

Not only was achieving high places on the league table the reward but department management also offered prizes to be awarded at Christmas, Easter and summer changeover of junior doctors. This included tickets to a local Premiership rugby club, a bottle of sparkling drink as well as certificates.

PDSA cycle 3: An improvement was seen but there was still room for further improvement, perhaps due to slow circulation of information regarding the new league table. It was felt that along with giving the system time to set in it was also important to include not only SHOs but all doctors prescribing antibiotics. This included orthopaedic consultants, registrars, and members of the ortho-geriatric team.

PDSA cycle 4: As this is a dynamic process reliant on human factors, a continuous education and improvement cycle must be implemented. Results of each monthly audit are circulated to all within the department as well as being presented at the monthly audit meeting.

Results

After induction and some educational sessions an improvement was seen in September 2012. Seventy patients were reviewed of whom 19 (27.1%) were on antibiotics. A total of 29 antibiotic courses were prescribed; 19 (65.5%) had the indication documented and 23 (79.3%) had the review/stop date documented.

This was not meeting the desirable standards and at this stage the Champions League table was introduced to the department in October 2012.

A further improvement in November 2012 was demonstrated. Seventy-eight patients were reviewed, of whom 19 (24.4%) were on antibiotics. A total of 29 antibiotic courses were prescribed; 23 (79.3%) had the indication documented and 24 (82.8%) had the review/stop date documented.

December 2012 demonstrated a sustained improvement after two published league tables. Sixty-one patients were reviewed of whom 12 (19.7%) were on antibiotics. A total of 19 antibiotic courses were prescribed; 18 (94.7%) had the indication documented and 16 (84.2%) had the review/stop date documented.

Interestingly the proportion of our patients on antibiotic regimens and the number of antibiotic courses prescribed decreased over time. This may have represented a departmental shift in attitude towards antibiotic prescribing, reducing unwarranted long courses.

A visual representation of the trend towards improvement can be seen in figure 1.

See supplementary file: ds2872.pdf - "Antibiotic charts"

Lessons and Limitations

We found that motivational tools such as league tables are very useful to raise the profile of the more mundane, yet very important, aspects of our day to day work. It created a competitive spirit within the department which was contagious and improved morale. Doctors took more pride and ownership in their antibiotic prescribing and were able to celebrate personal successes when climbing the league table, and moreover celebrate the departmental successes when compared with different Trust departments. Keeping the idea novel came with relative ease due to the regular turnover of junior doctors. Doctors responded positively to feedback if they were not achieving the desirable standards and enjoyed the challenge of improving month on month.

There is a risk when identifying people by name of singling out poorly performing doctors publicly. For this reason the lead consultant for juniors was involved; if any individuals were to be identified as struggling, they would not have been publicly humiliated and published information would have been altered. Fortunately this did not happen but a plan was in place for identifying individuals and potential issues.

Conclusion

Due to the nature of junior doctors regularly rotating, the idea remained novel and interesting to the new doctors.

The Champions League became a significant talking point at the daily trauma meetings and a common ground for all juniors. The project gelled the department across the grades of doctor and lifted team spirit. Our department strived to be the front runners in antibiotic prescribing standards and we were able to celebrate our successes with relevant hospital committees.

Doctors felt at ease with the whole process and appreciated the motivations behind it. Identifying the underperformers was never carried out as a 'witch-hunt' but purely an informal one-to-one educational session with the on-ward pharmacist. Straw poles within the department demonstrated a high level of doctor satisfaction and a noticeable change in attitudes towards antibiotic prescribing.

This project empowered the duty pharmacist and she naturally took the lead with the project. This greatly improved interdisciplinary relations between the pharmacists and the doctors. An orthopaedic antibiotic prescribing lead consultant was appointed who sent emails regularly updating the department on our progress, comparing our practice to the other departments within the Trust. Over time we became one of the most compliant departments.

Overall we felt the project to be a great success and the sustained

improvement seen in our data is testament to this.

References

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Declaration of interests

None to declare

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