Investigation of the Utility of the ICNET NG™ Clinical Surveillance Software to Record and Report Interventions made during Hospital Antimicrobial Ward Rounds

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Abstract

The benefits of multidisciplinary ward rounds in promoting good antimicrobial stewardship have been previously described. Antimicrobial Stewardship (AMS) ward rounds require access to current data on the patients under their review and should have a secure system of recording their activity for future reporting. In this regard. the usefulness of the ICNET NG system in surveillance by hospital Infection Control and Prevention Teams has been well established. This study investigated the potential to extend the use of the system to hospital AMS ward rounds. Data on patients referred to the AMS ward round at a general hospital were recorded using the ICNET NG™ "live staging" system. The reasons for referral were classified into one of three categories (alert antimicrobials, aminoglycoside courses >3d, clinical pharmacist request). Outcomes after AMS ward round were classified into one of five categories (continue, change, stop, IV to oral switch, referral for outpatient antibiotic therapy (OPAT). The system was qualitatively compared to the previous paper-based method by users. Data on patients referred to the AMS wards round over a period of 6 months was reviewed. Users' experience of using the ICNET™ software suggested benefits of the electronic system in terms of accessibility to relevant patient data and ease of activity reporting. The ICNET NG™ Clinical Surveillance software can be used as a patient monitoring and recording tool for AMS ward rounds.

Introduction

AMR ward rounds offer the opportunity for interventions to promote effective antibiotic prescribing with the aim of improving clinical outcome (Davey P. et al. Cochrane Database Syst Rev 2013; 4: CD003543). An AMS ward round has been established at Borders General Hospital for several years consisting of biweekly review by the Consultant Microbiologist and Antimicrobial Pharmacist of highlighted patients. AMS ward round information was recorded on paper forms.

ICNET NG™ interfaces with existing hospital patient management and laboratory software systems to enable Infection Prevention and Control Teams to record and monitor patients in real time.
The possible extension of this use to AMS ward rounds was investigated.

Methods

ICNet™ case management and surveillance software was used to record patients included in regular AMS ward rounds based at a general hospital. Initially, the ICNET™ UAT live staging site was used to enable proof of concept before moving to use of the live site. "Antibiotic Review" was included as a condition. Three extended properties, namely "reason for review", review outcome" and "ward visit required" were initially included to which were added "alert antibiotic" and "note" when entry was switched to the live site (Fig. 1).

Fig. 1
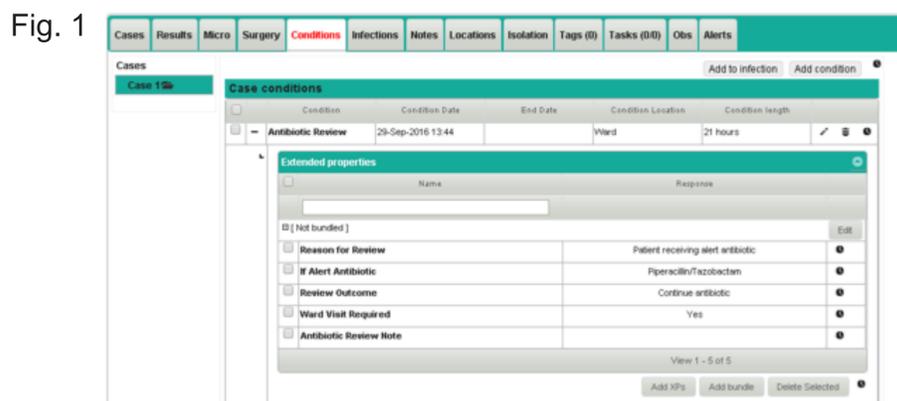
Further detail was added under each extended property. Reasons for review included whether patients were receiving "alert" antibiotics, aminoglycosides for > 3 days, or had been referred for some other reason. Whether a ward visit was required was also recorded. Review outcomes included change/continue antibiotic, IV to oral switch, OPAT referral or stop.

Activity reports were run within ICNET™ and results exported to Excel™ where required.

Results

AMS activity, expressed as number of conditions examined, is shown in Fig. 2 for the four month period following switch to the live ICNET NG™ site. 37% of patients were categorised as requiring a ward visit from the AMS team.

Fig. 2
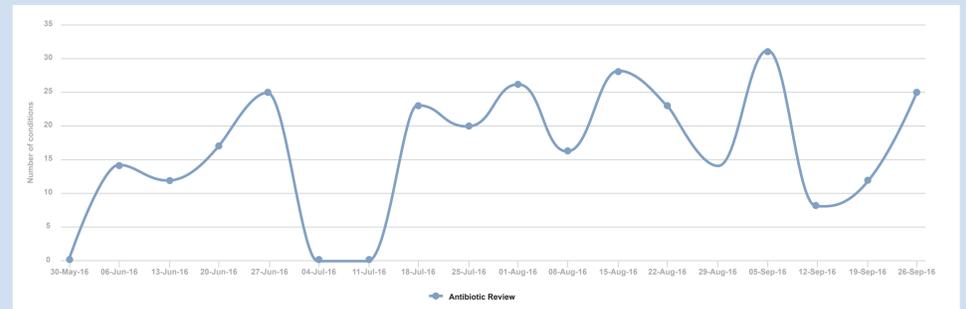
Fig. 3 shows the breakdown in activity by reason for review.

Outcomes of AMS review are shown in Fig. 4.

Fig.3. Reason for Review
- other 12%
- Alert Antibiotic 70%
- Aminoglycosides>3days 13%
- Ward Pharmacist Request 5%

Fig.4. Review outcomes
- Change Antibiotics 4%
- Continue Antibiotics 79%
- IV/Oral Switch 5%
- Refer to OPAT 0%
- Stop Antibiotics 12%
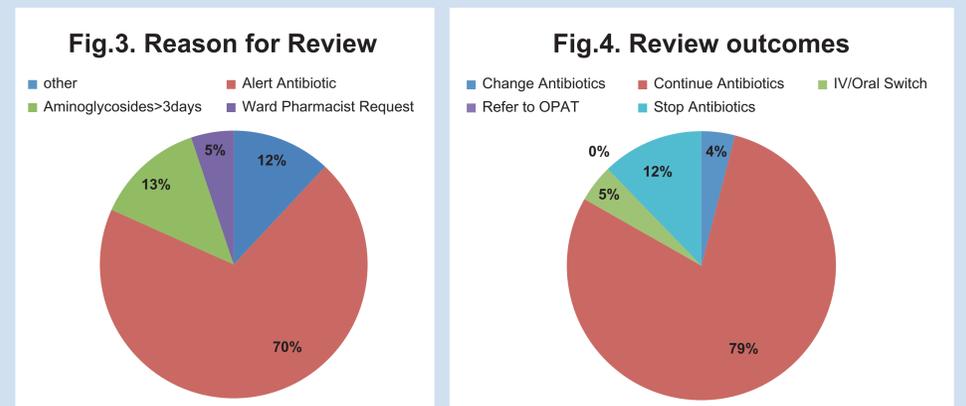
Clinicians reviewing patients for AMS ward rounds were asked to state their view of ICNET NG™ in comparison with the previous paper-based approach (Table 1)

Table 1.

pros	cons
Multiuser access to real time information	Takes longer to record information
Easy to generate activity reports	
Microbiology results visible within entry	

Conculsion and Future Developments

ICNET NG™ software can be adapted to monitor patients under review as part of AMS ward rounds. Real time patient information, including location and lab results, can be accessed easily from within the programme. AMS activity can be monitored through reporting functions. Integration of future electronic prescribing systems with the ICNET NG™ interface will provide a more efficient method of patient prioritisation, ICNET NG™represents a useful tool for clinicians involved in AMS review of patients.