

Light surveillance of cranial surgery procedures in a tertiary referral hospital using an integrated electronic approach

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Background

NHS Greater Glasgow & Clyde Infection Prevention & Control team have revisited surgical site infection (SSI) surveillance within cranial surgery procedures using a real-time web application designed to assist infection surveillance.

Neurosurgical SSI surveillance is not a mandatory component of the Health Protection Scotland SSI surveillance programme and no boards in Scotland currently undertake surveillance within this specialty.

SSI surveillance was previously undertaken within craniotomy, craniectomy & cranioplasty procedures at the Southern General Hospital, Glasgow (now Queen Elizabeth University Hospital) between 2003 to 2006. This involved a manual paper based system for data collection and ward visits to review documentation.

Further interrogation of separate IT systems was also required to obtain individual patient demographics, admission, discharge & transfer details and microbiology results.

Data was then entered onto a MS Access database for subsequent analysis and reporting.

Overall SSI rates were low within the combined procedure categories with an SSI rate of 2.4% (39 SSIs detected in 1606 procedures).

Methods

The IPC team have used ICNet (Baxter) as the main software package to enable alert organism surveillance for several years and the addition of a SSI surveillance package has enabled robust light surveillance within the mandatory procedure categories of hip arthroplasty & caesarean section.

The system provides real time data import, alerts and customisable reports via intranet PCs and tablets allows increased accessibility throughout multiple hospital sites within NHSGGC. This also reduces the burden of requiring staff to complete paper forms and completion of this information into an electronic format for database entry and analysis.

Once the patient surgery case is identified for surveillance inclusion this is automatically displayed on the surveillance nurses ICNet 'dashboard' allow monitoring of each case for 30 days post surgery.

Cases which have subsequent microbiology or readmission triggers are investigated to determine whether any SSI surveillance criteria have been met.

The existing methodology was transferred to incorporate cranial surgery procedures which are undertaken at Queen Elizabeth University Hospital and commenced in March 2016.

Results

This method relies on accurate surgical procedure coding data as the unique identifier for surveillance inclusion. It was noted that some procedures were not captured due to coding anomalies; however this was identified and remedied locally.

Due to small procedure numbers no direct comparison can be made as yet with previous SSI rates, however it would appear that data capture using ICNet SSI monitor offers a robust form of denominator data for surveillance.



Discussions

Using a real-time web application to undertake SSI Surveillance within cranial surgery has reduced the burden of a paper based process, which requires access to multiple systems to retrieve and enter data. SSI monitor provides a single data repository for surveillance data and provides a straightforward approach to monitoring SSI outcome following surgery .