

The Use of ACHS Clinical Indicators in Tasmania

The Tasmanian Hospital system consists of two major public hospitals of more than 500 beds and a further nine hospitals – both private and public of less than 250 beds.

The two major public hospitals carry out surveillance in relation to the Australian Council on Healthcare Standards (ACHS) clinical indicators for surgical wound infections (SWI's) and bacteraemias on an ongoing basis. Eight of the other nine hospitals perform surveillance on all nosocomial infections – some utilising a dedicated wound survey form for SWI.

In summary:

10/11 (91%) of hospitals are performing surveillance in Tasmania.

6/11 (55%) of hospitals are utilising a dedicated wound survey form with post discharge surveillance.

The focus of this brief dissertation is the experience of surgical wound surveillance at the RHH and the trends identified.

The Royal Hobart Hospital (RHH), incorporating the Repatriation General Hospital, is a 650 bed acute care teaching hospital of the University of Tasmania. The RHH has been undertaking specific SWI surveillance since 1987 and over that time the survey has developed and been streamlined into a very sensitive and useful survey. It is imperative to collect accurate statistics in order for surgeons to have confidence in the survey. On two occasions, the survey at the RHH has been audited by independent persons and was found to be accurate according to the definitions used.

The aims of the survey are:

1. to obtain an accurate SWI rate
2. to determine the factors which influence the RHH SWI rate
3. to obtain statistical information for future investigation of these variables
4. to decrease the infection rate and thereby increase bed utilisation
5. to provide an important facet of surgical audit.

The survey encompasses all wounds where a surgical incision was made through the skin, with the exception of Paediatrics, Burns, Ear, Nose & Throat

and Day surgery. There is a separate pilot study underway in the Day Surgery Unit.

The methodology involves the survey form originating in the theatre at the time of the operation. The theatre staff fill in the specific questions related to the operation. The form then accompanies the patients other charts to the ward and is placed on the end of the bed. Ward staff then fill in a daily description of the wound. Antibiotics administered for wound infection are also documented at this time.

On discharge the ward clerk records the dates of admission and discharge and the follow-up appointment. Outpatient clinics are provided with the relevant post discharge form and if the patient is seeing the surgeon privately, the post discharge form is sent to the Rooms.

The wound survey forms are returned to the infection control unit and all data is coded and stored on a specific database designed for that purpose. Detailed reports are sent to surgeons on a six monthly basis.

The definition of an infected wound used at the RHH is:

1. a wound which discharges pus or,
2. a wound for which the attending surgeon orders specific antibiotic treatment.

This definition is the same as that used in the Australian Nosocomial Infection Prevalent Surgery (1987) conducted throughout Australia in 1984. Whilst giving a higher infection rate, it is more representative of the action that occurs on the ward. Patients are frequently assessed on their symptoms as being infected and are therefore treated before the wound actually breaks down and discharges pus.

The RHH has succeeded in reducing the SWI rate. There was an interruption to the continuous surveillance for approximately 18 months and a subsequent increase to the infection rate was noted which was statistically significant. All the figures have been examined by the Bureau of Statistics and the decrease achieved in the infection rate was also found to be statistically significant.

The RHH reports all wound

infections, including infections with a discharge of pus, wounds which did not discharge pus but were treated with antibiotics, and post discharge infections. Over the past three years, whilst succeeding in reducing the SWI rate, an increase in infections identified post discharge has also been noted.

Over the past 12 months, the percentage of clean infections identified post discharge was 66% clean – contaminated 44%, contaminated 33% and dirty 25% (Table 1). Between 30-50% of patients identified with post discharge infections were re-admitted for further management of the infected wound – either dressings, intravenous antibiotics and/or a return to theatre. This is a typical example of how the ACHS criteria does not truly reflect the trends that are occurring at the RHH. A significant number of infections would be omitted from statistics, should post discharge infections be excluded.

Another important facet of surgical wound surveillance that has been identified at the RHH is risk stratification. Theatre staff identify on the wound survey form (1) the ASA score, (2) whether the operation time was greater than 2 hours, (3) whether the abdominal or thoracic cavity was entered into and (4) whether the surgery was classified as contaminated or dirty. A score is given – ranging between 0 and 4.

The patient risk assessment adds another dimension to the interpretation of the wound infection data. Whilst the actual surgery may be classified as clean surgery, the above factors are known to predispose the patient to wound infection. For example, within the clean surgery classification at the RHH in 1994, the infection rate increased with the patient risk score (Table 2). Patients with a risk score of 0 had an infection rate of 1.4%, and this increased as the risk score rose. This aspect of the survey provides greater sensitivity and makes comparison of infection rates far more valid.

Surgical wound surveillance at the RHH, has gone beyond the criteria required to meet the ACHS clinical

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indicator 5A. A comparison of data which is set out in Table 3, indicates the difference in infection rates depending on the definitions and criteria used. Reporting on all infections in clean surgery gives the RHH an infection rate of 2.8%. If using the ACHS criteria alone, the RHH infection rate is 0.96%. This difference is also reflected in the contaminated group of infections, -3.72% versus 1.76%.

From the experience at the RHH, continuous surveillance with regular feedback to the surgeons is one of the keys to achieving a reduction in the infection rate. To provide useful and complete statistical information to surgeons on the outcome of surgery, all infections should be included – those with pus, those without pus present but treated with antibiotics and those identified post discharge. It is also important to develop a comprehensive patient risk assessment.

The encouragement of the ACHS with their inclusion of the clinical indicator 5A as part of their surveillance process, does provide the ability to compare overall infection rates between

Table 1. Percentage of SWI's identified Post Discharge.

Clean	66%
Clean/Contaminated	44%
Contaminated	33%
Dirty	25%
* Approx. 30-50% re-admission rate	

Table 2. Risk Stratification for Clean Surgery – RHH 1994.

Risk Score	Infection Rate
0	1.40%
1	3.30%
2	4%
3	4.90%
4.	Nil

Table 3. Comparison of RHH SWI Data vs. ACHS Clinical Indicator 5A.

	RHH (Total)	RHH (ACHS Criteria)	ACHS (Threshold)
Clean	2.80%	0.96%	3%
Contaminated	3.72%	1.76%	5%

hospitals, and hopefully in the future, this will be developed further by being able to compare procedure specific infection rates and incorporating a risk stratification. The ACHS clinical indicator does empower infection control staff to approach administrators to provide the necessary resources to set up and/or improve surveillance systems within their establishment.

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Paper presented at 9th National Conference

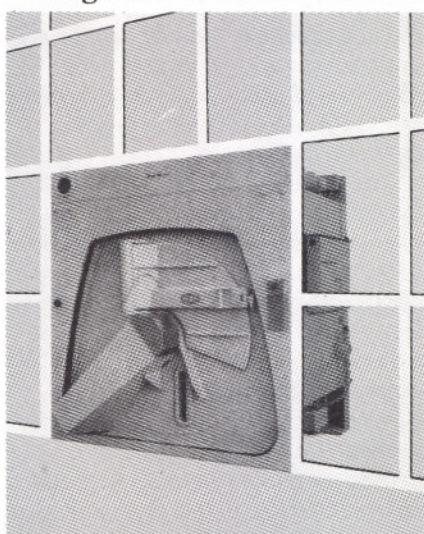
Reference:

Department of Public Health, University of Sydney, (1987), The Australian Nosocomial Infection Prevalence Survey.

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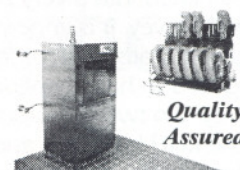
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