



衛生防護中心
Centre for Health Protection

Scientific Committee on Infection Control

Recommendations on Surgical Site Infection Surveillance

Background

Surgical site infections are known to represent a substantial burden for patients and health services, both in terms of added morbidity and total cost of care.¹⁻⁴ Surveillance of surgical site infections (SSIs) has been proved to be effective in reducing the nosocomial infection in the landmark SENIC study.⁵ Local experience in hospitals under the Hospital Authority also demonstrated similar findings.⁶

2. The Scientific Committee on Infection Control discussed various practical issues in relation to institutionalising SSI surveillance in local hospitals, and the following recommendations were made.

Recommendations

3. It was recommended that all hospitals with surgical services should undertake surveillance of SSIs.

- Surveillance of SSIs and subsequent feedback of relevant findings to specific surgeons have been shown to be effective in bringing SSI rates down.⁵

4. It was recommended that a written plan/protocol should be used as the basis for the surveillance program. The protocol should outline the objectives and important elements of the surveillance program.



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- A structured plan and protocol allowed the objective and scope of surveillance to be clearly defined.⁷ This formed the basis of the surveillance programme and provided the frontline staff with a clear guidance for reference. The Hospital Authority (HA) has already rolled out the Protocol for HA Surgical Site Infection Surveillance in 2002.⁸

5. It was recommended that the surveillance should be an ongoing and active one which measured the incidence of the SSIs.¹

- A programme of continuous SSI surveillance and feedback was shown to be associated with reduction in total SSI rate in an overseas university hospital, while the decline halted during the period of interruption.⁹

6. It was recommended that the findings of SSI surveillance programme should be made available to practicing surgeons.

- Studies have proved the effectiveness of surveillance with feedback of findings to specific surgeons in lowering the SSI rate.^{5,8,10-12} Such summary report should calculate the operation-specific rate and be appropriately stratified e.g. with National Nosocomial Infection Surveillance (NNIS) risk index.¹
- The optimum frequency of such rate calculation and reporting would be determined by case-load of individual unit and original objectives set.⁷

7. It was recommended that certain wound categories (clean, clean contaminated, contaminated and dirty) should be included in the scope of the SSI surveillance.

- Large scale studies revealed that SSI surveillance with feedback mechanism would effectively lower the SSI rate of clean operations^{8,10}, as well as procedures of all other wound categories.^{5,11}
- The operations with high volume or known to have high risks of developing SSI could also be selectively chosen to perform surveillance.^{13,14}

8. It was recommended that the elements of surveillance, including definitions of SSI and the method for calculating the various rates, should be used with consistency over time.

- In general, the CDC definitions of SSI should be used for identifying SSI in surgical patients.¹⁵ Otherwise, the protocol should state clearly

the definition and any modification under scientific grounds.* The definitions should be used consistently over time for trend analysis. Even a small change in the definitions, or its interpretation would cause major variation in the resultant SSI rate.³

- Risk stratification and denominator should be chosen carefully and consistent overtime to avoid invalid comparison.¹⁶

*Infection determined solely by “surgeon-diagnosis” may not be appropriate in this locality.

9. It was recommended that the data collected in each hospital should be benchmarked with existing international and local aggregated data whenever comparison was compatible.¹⁷

- The standardized infection ratio (SIR) could be calculated to see if there was any difference between the rates.¹⁸

10. It was recommended that trained personnel with understanding in epidemiology, surveillance and the overall plan of the program should be responsible for case-finding.

- Infection Control Nurses (ICNs) were considered the best candidates to take up this role in view of their familiarity in surveillance and case identification.¹⁶ On the other hand, continuous professional education should also be provided.⁷

11. It was recommended that post-discharge surveillance should be conducted as part of the ongoing SSI surveillance programme.

- Post-discharge surveillance was able to detect 12% to 84% of all the SSIs.¹ Therefore, dependence on inpatient surveillance alone would tend to underestimate the true rate of SSI.

12. It was recommended that for each patient undergoing an operation chosen for surveillance, the ICN should also record the relevant patient’s background information which was shown to be associated with increased SSI risk (e.g. duration of operation, surgical wound class).

- The information could be regarded as risk factors and they would be stratified during data analysis.⁷

13. It was recommended that data of surgical antibiotic prophylaxis should be included as part of the surveillance to cope with the local antibiotic stewardship.

- Updated guideline for antibiotic prescription provided a reference for rational prescription and ongoing surveillance could help to detect the level of compliance and reduce bacterial resistance.¹⁹

14. It was recommended that the data and process of surveillance should undergo periodic evaluation and validation to ensure high quality and accuracy.⁷

- In US, study was done to assess the accuracy of nosocomial infection rate reported. The positive predictive value, sensitivity and specificity were 72%, 67% and 97.7% respectively.²⁰ It was suggested that these figures would help to improve the quality of infection data reported to the NNIS system.

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