

Reducing post-operative infections; the role of anaesthetists

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Healthcare-associated infections (HAI) occur in about 10% of all patients receiving care. Surgical site infections (SSI) are the second most common HAI occurring in 2-5% of patients undergoing surgery.¹ SSI are associated with significant morbidity and mortality. Patients with SSI have longer lengths of stay in hospital and have 2-11 times higher risk of death compared to patients undergoing surgery who do not develop an SSI. The excess cost of SSI is not insignificant; the cost to patients, their family/whanau is typically not included in the estimate of cost but may result in a substantial burden on families. Patients exposed to surgery carry more than twice the overall HAI burden than those not exposed to surgery; almost half of the HAI were SSI.²

There are twelve “must do’s” to reduce the risk of SSI:³

- Warm the patient
- Use of the surgical safety checklist to enhance communication and teamwork
- Prophylactic antibiotics in the correct dose at the correct time
- Appropriate skin preparation
- Continue to warm the patient
- High flow oxygen ≈ 80%
- Double gloves
- Monitor blood glucose; treat if >7.8mmol
- Consider wound protector for colorectal surgery
- Antimicrobial impregnated sutures for colorectal surgery
- Avoid blood transfusion
- Use good surgical technique

In 2009 a set of recommendations for a National Surgical Site Infection Surveillance programme were developed by a team lead by ADHB for the Ministry of Health Quality Improvement Committee. The recommendations were reviewed by the newly established Health Quality & Safety Commission in 2011 and a subsequent cost benefit analysis forecast that the benefits from the programme would build slowly until year 10 savings from SSI avoided was estimated at \$4.4 million per annum.

In 2012 the Surgical Site Infection Improvement was established.^{4,5} The programme is delivered jointly by Auckland and Canterbury District Health Boards and funded by the Commission. The initial focus was on hip and knee arthroplasties and this year the focus has shifted to include cardiac surgery. It is well established internationally that surveillance programmes, consisting of a comprehensive programme of data collection and sharing of information reduce SSI rates. The New Zealand programme is unique in that it tracks performance against adherence to internationally recognized best clinical practices known to prevent SSI. These measures, termed Quality and Safety Markers (QSM) are reported quarterly and targets have set. To date there has been significant improvement in the QSM. There have been a number of lessons learned along the way including the need for multidisciplinary teams engaged in the programme from the start.

References

1. Anderson DJ, Podgorny K, Berríos-Torres SI et al. Strategies to prevent surgical site infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol* 2014; 35 (6): 6-5-27
2. Sax H, Uçkay I, Balmelli C et al Overall burden of healthcare-associated infections among surgical patients. *Ann Surg* 2011; 253: 365-70.
3. Dellinger EP. SSI prevention: the must dos International Conference on Prevention and Infection Control, 16-19th June 2015, Geneva, Switzerland.
4. Health Quality & Safety Commission -www.hqsc.govt.nz
 - a. Infection Prevention and Control Programme
 - b. National Surgical Site Infection Improvement Programme
5. <http://www.hqsc.govt.nz/our-programmes/infection-prevention-and-control/projects/surgical-site-infection-improvement/>
6. Morris AJ, Panting AL, Roberts SA, Shuker C, Merry AF. A new surgical site infection improvement programme for New Zealand: early progress. *NZ Med J* 15 May 2015. Vol 128: No 1414