

STANDARDS OF INFECTION CONTROL TO PREVENT SURGICAL SITE INFECTIONS IN SWITZERLAND: A CROSS-SECTIONAL SURVEY IN 82 HOSPITALS

Danielle Vuichard¹, Nicolas Troillet², Marie-Christine Eisenring², Marc Dangel¹, Giorgio Zanetti³, Andreas F. Widmer¹ and Swissnoso

¹ Division of Infectious Diseases, Basel University Hospital, Basel, Switzerland, ² Department of Infectious Diseases, Central Institute of the Valais Hospitals, Sion, Switzerland, ³ Service of hospital preventive medicine, Lausanne University Hospital, Lausanne, Switzerland

Objectives:

Surgical site infections (SSI) are the most frequently observed nosocomial infections in surgical departments leading to substantial morbidity and mortality. Organizations such as WHO, Centers of Disease Control and Prevention (CDC) and NICE provide guidelines to decrease the incidence of SSI. In Switzerland, however, compliance with these guidelines was never evaluated on a national scale. Therefore, we designed a questionnaire to estimate the level of compliance with these SSI prevention guidelines as gold standard.

Methods:

Swissnoso, an expert group of hospital epidemiologists, conducts a national SSI surveillance program with 118 hospitals that provide incidence data for SSI. A pretested, standardized questionnaire was developed with 42 questions and sent to infection control professionals of the hospitals participating in the program. Participants were asked to estimate the compliance with each item by indicating < 25%, 25-50%, 51-75%, > 75% or unknown. We focused on measures that are modifiable and potential topics for intervention. Estimates were asked separately for different subspecialties such as visceral, cardiac and orthopaedic surgery.



Results:

82 of 118 (69.5%) Swiss hospitals of various sizes and affiliations responded to the survey (figure). Overall, 76.9% (range 63.6-81.8) of the participants reported a compliance rate > 75% (Table). The percentage varied from 76.9% to 81.8% for hair removal, from 81.8% to 90.2% for disinfection of surgical incision with 3 applications, and from 11% to 18.2% for the timing of antibiotic prophylaxis. There were no statistically significant differences between subspecialties. Problems with intelligibility and handling of the electronic form were encountered despite a dedicated telephone hotline; confirmatory questions and mandatory fields were included to ensure completeness and to prevent contradictory answers.

Conclusion:

Self-reported compliance with basic recommendations was lower than expected, and a large variation between hospitals was observed. Based on these results, a national intervention plan is provided for participating hospitals. The benchmark of compliance with this bundle is set to > 90%.

No. of hospitals (%) reporting a compliance rate of > 75% with specific bundle items:

Bundle element	Items from survey	Visceral surgery (n=82)	Cardiac surgery (n=11)	Orthopaedic surgery (n=82)	P-value
Pre-operative hair removal	None or only when interfering with incision site	63 (76.9)	9 (81.8)	64 (79.0)	0.93
	With clippers only	60 (77.9)	9 (81.8)	66 (81.5)	0.49
	Within 4 hours before surgery	68 (82.9)	7 (63.6)	72 (87.8)	0.11
Skin disinfection of the surgical site	With alcohol based chlorhexidine or povidone-iodine	50 (61.0)	9 (81.8)	58 (70.7)	0.23
	Done by skilled staff	62 (76.5)	9 (81.8)	67 (82.7)	0.61
	3 applications	68 (82.9)	9 (81.8)	74 (90.2)	0.36
Surgical Anti-microbial prophylaxis	Written protocol for timing	53 (64.6)	8 (72.7)	50 (61.0)	0.67
	Re-dosing after 4 hours	56 (68.3)	6 (54.5)	54 (65.9)	0.66
	Double dosage if body weight > 80 kg	9 (11.0)	2 (18.2)	10 (12.2)	0.79

References:

1. WHO Guidelines for Safe Surgery 2009: Safe Surgery Saves Lives. Geneva: 2009
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3. Mangram AJ, et al. CDC guidelines. Am J Infect Control 1999; 27: 97-132