



Infection Control Current Awareness: January 2015

[A decade of investment in infection prevention: A cost-effectiveness analysis.](#)

Dick AW, Perencevich EN, Pogorzelska-Maziarz M et al. Am J Infect Control. 2015 Jan 1, vol 43, no 1, p4-9

BACKGROUND:

Health care-associated infection (HAI) rates have fallen with the development of multifaceted infection prevention programs. These programs require ongoing investments, however. Our objective was to examine the cost-effectiveness of hospitals' ongoing investments in HAI prevention in intensive care units (ICUs).

METHODS:

Five years of Medicare data were combined with HAI rates and cost and quality of life estimates drawn from the literature. Life-years (LYs), quality-adjusted LYs (QALYs), and health care expenditures with and without central line-associated bloodstream infection (CLABSI) and/or ventilator-associated pneumonia (VAP), as well as incremental cost-effectiveness ratios (ICERs) of multifaceted HAI prevention programs, were modeled.

RESULTS:

Total LYs and QALYs gained per ICU due to infection prevention programs were 15.55 LY and 9.61 QALY for CLABSI and 10.84 LY and 6.55 QALY for VAP. Reductions in index admission ICU costs were \$174,713.09 for CLABSI and \$163,090.54 for VAP. The ICERs were \$14,250.74 per LY gained and \$23,277.86 per QALY gained.

CONCLUSIONS:

Multifaceted HAI prevention programs are cost-effective. Our results underscore the importance of maintaining ongoing investments in HAI prevention. The welfare benefits implied by the advantageous ICERs would be lost if the investments were suspended.

[Keep It Clean: A Visual Approach to Reinforce Hand Hygiene Compliance in the Emergency Department.](#)

Wiles LL, Roberts C, Schmidt K. J Emerg Nurs. 2015 Jan 19.

Abstract

Although hand hygiene strategies significantly reduce health care-associated infections, multiple studies have documented that hand hygiene is the most overlooked and poorly performed infection control intervention.

METHODS: Emergency nurses and technicians (n = 95) in a 41-bed emergency department in eastern Virginia completed pretests and posttests, an education module, and two experiential learning activities reinforcing hand hygiene and infection control protocols.



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RESULTS: Posttest scores were significantly higher than pretest scores ($t(108) = -6.928, P = .048$). Hand hygiene compliance rates improved at the conclusion of the project and 3 months after the study ($F(2, 15) = 9.89, P = .002$).

IMPLICATIONS FOR PRACTICE:

Interfaces with staff as they completed the interactive exercise, as well as anecdotal notes collected during the study, identified key times when compliance suffered and offered opportunities to further improve hand hygiene and, ultimately, patient safety.

Tissue adhesives for closure of surgical incisions.

Dumville JC, Coulthard P, et al
Cochrane Database Syst Rev. 2014 Nov

BACKGROUND: Sutures (stitches), staples and adhesive tapes have been used for many years as methods of wound closure, but tissue adhesives have entered clinical practice more recently. Closure of wounds with sutures enables the closure to be meticulous, but the sutures may show tissue reactivity and can require removal. Tissue adhesives offer the advantages of an absence of risk of needlestick injury and no requirement to remove sutures later. Initially, tissue adhesives were used primarily in emergency room settings, but this review looks at the use of tissue adhesives in the operating room/theatre where surgeons are using them increasingly for the closure of surgical skin incisions.

OBJECTIVES: To determine the effects of various tissue adhesives compared with conventional skin closure techniques for the closure of surgical wounds.

SEARCH METHODS: In March 2014 for this second update we searched the Cochrane Wounds Group Specialised Register; The Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library); Ovid MEDLINE; Ovid MEDLINE (In-Process & Other Non-Indexed Citations); Ovid EMBASE and EBSCO CINAHL. We did not restrict the search and study selection with respect to language, date of publication or study setting.

SELECTION CRITERIA: Only randomised controlled trials were eligible for inclusion.

DATA COLLECTION AND ANALYSIS: We conducted screening of eligible studies, data extraction and risk of bias assessment independently and in duplicate. We expressed results as random-effects models using mean difference for continuous outcomes and risk ratios (RR) with 95% confidence intervals (CI) for dichotomous outcomes. We investigated heterogeneity, including both clinical and methodological factors.

MAIN RESULTS: This second update of the review identified 19 additional eligible trials resulting in a total of 33 studies (2793 participants) that met the inclusion criteria. There was low quality evidence that sutures were significantly better than tissue adhesives for reducing the risk of wound breakdown (dehiscence; RR 3.35; 95% CI 1.53 to 7.33; 10 trials, 736 participants that contributed data to the meta-analysis). The number needed to treat for an additional harmful outcome was calculated as 43. For all other outcomes - infection, patient and operator satisfaction and cost - there was no evidence of a difference for either sutures or tissue adhesives. No evidence of differences was found between tissue

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adhesives and tapes for minimising dehiscence, infection, patients' assessment of cosmetic appearance, patient satisfaction or surgeon satisfaction. However there was evidence in favour of using tape for surgeons' assessment of cosmetic appearance (mean difference (VAS 0 to 100) 9.56 (95% CI 4.74 to 14.37; 2 trials, 139 participants). One trial compared tissue adhesives with a variety of methods of wound closure and found both patients and clinicians were significantly more satisfied with the alternative closure methods than the adhesives. There appeared to be little difference in outcome for different types of tissue adhesives. One study that compared high viscosity with low viscosity adhesives found that high viscosity adhesives were less time-consuming to use than low viscosity tissue adhesives, but the time difference was small.

AUTHORS' CONCLUSIONS:

Sutures are significantly better than tissue adhesives for minimising dehiscence. In some cases tissue adhesives may be quicker to apply than sutures. Although surgeons may consider the use of tissue adhesives as an alternative to other methods of surgical site closure in the operating theatre, they need to be aware that sutures minimise dehiscence. There is a need for more well designed randomised controlled trials comparing tissue adhesives with alternative methods of closure. These trials should include people whose health may interfere with wound healing and surgical sites of high tension.

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