Background
Surgical site infection has been estimated to occur in about 15% of clean surgery and 30% of contaminated surgery. Using plastic adhesive drapes to protect the wound from organisms that may be present on the surrounding skin during surgery is one strategy used to prevent surgical site infection. Results from non-randomised studies have produced conflicting results about the efficacy of this approach but no systematic review has been conducted to date to guide clinical practice.

Objectives
To assess the effect of adhesive drapes used during surgery on surgical site infection, cost, mortality and morbidity.

Selection criteria
Randomised controlled trials comparing any plastic adhesive drape with no adhesive drape, used alone or in combination with woven (material) drapes or disposable (paper) drapes in patients undergoing any type of surgery.

Data collection and analysis
Two review authors independently selected and assessed studies for trial quality and both independently extracted data. Study authors were contacted for additional information.

Results
The review includes five studies involving 3,082 participants comparing adhesive drapes with no drape and two studies involving 1,113 participants comparing iodine-impregnated adhesive drapes with no drape. A significantly higher proportion of patients in the adhesive drape group developed a surgical site infection when compared with no drape. (Risk ratio (RR) 1.23, 95% Confidence Intervals (CI) 1.02 to 1.48, p=0.03). Iodine-impregnated adhesive drapes had no effect on the surgical site infection rate (RR 1.03, 95% CI 0.06 to 1.66, p=0.89). Length of hospital stay was similar in the adhesive drape and non-adhesive drape groups.
Authors’ conclusions

There was no evidence from the seven trials that plastic adhesive drapes reduce surgical site infection rates and some evidence that they increase infection rates. Further trials may be justified using blinded outcome assessment to examine the effect of adhesive drapes on surgical site infection based on different wound classifications.

Plain language summary

Following surgery, up to 30% of wounds may become infected. This complication of surgery may cause distress for the patient and lead to higher treatment costs. Many interventions have been designed to reduce postoperative infections.

One of these is the use of a drape which adheres to the skin and through which the surgeon cuts. It is thought that adhesive drapes prevent germs, which may be on the skin, from entering the open wound. This updated review of over 4,000 patients in seven separate trials could find no evidence that adhesive drapes reduces surgical site infection rates and some evidence that they may increase infection rates.

Nursing interventions to manage symptoms and to promote skin integrity are vitally important issues that require development of an evidence base and are critical to improvements in acute hospital patient care. The figure below identifies the specific foci of NCREN.