

## Preoperative skin antisepsis for the prevention of surgical site infection: an observational study in an Italian operating room (OR).

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### Background

Surgical site infections (SSIs) are one of the most common complications following surgery. The CDC Guidelines (2017) recommend performing skin preparation with an alcohol-based antiseptic agent unless contraindicated. The application of the antiseptic should be from the incision site towards the periphery in a circular motion with larger and larger circles.

### Aim

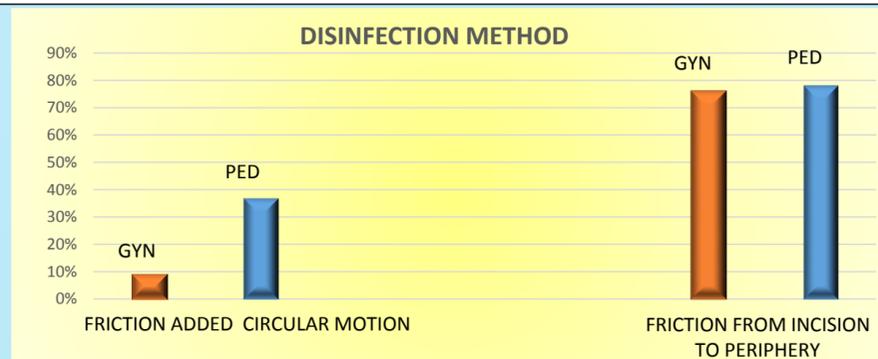
To determine whether surgeons and nurses practice correct behavior regarding preoperative skin antisepsis immediately prior to surgical incision.

### Methods

An observational study was conducted at Salesi Children's Hospital, "AUO Ospedali Riuniti Ancona", involving a convenience sample of children and women. Patients undergoing emergency procedures were excluded. The data were anonymous and were analyzed using IBM SPSS version 19.0.

### Results and Discussion

The sample consisted of 202 women and 164 children, with an average age of 44.36 (18.52) and 5.86 (4.23) years, respectively. In gynecological procedures, PI 10% was the solution used. In children, the solutions used for antisepsis were: PI 10% (65%), chlorhexidine gluconate 2% (14%), Broxodin 2% (11%), and Amukine Med 0.05% (10%). The friction added to circular motion in the skin was the least used method (9% Gynecology; 37% Pediatrics). Friction from the incision site to the periphery was the most utilized technique (92% adult; 62% children). In many procedures (76% Gynecology; 78% Paedriatics) the correct drying time was not respected, while in a few cases (24% Gynecological; 22% Paedriatics), the healthcare operators have waited for the drying times.



The sample was divided in women and children because the hospital is a maternal-child center. As the use of alcoholic solutions in mucous membranes (like vaginal mucosa) is not recommended, the disinfectant used in gynecology was the PI 10%, because many procedures involve mucous membranes. In addition to this, when a procedure concerns intact skin, there is a high risk the disinfectant will come in contact with the mucous tissues. In pediatric surgery, there was a total adherence to guidelines in regards to the kind of solution used, and the application method complied with the recommendation. In both settings, there was a difference between the guidelines and the practice about the drying time, which can be explained by the urgency due to hemodynamic instability of the patients. In gynecological settings, the possible complication of the fetus in caesarean sections is another reason why drying times are not respected. One limit of the study is the small size of the sample, which can compromise the conclusions. Moreover, the data collection was performed by twenty nurses, so it could be operator-sensitive.

### Conclusions

The study demonstrates a correct behavior in regards to the use of the right antiseptic solutions, but there are some incongruences, according to the guidelines, in terms of drying times of the solution. The causes of this lack of adherence to protocols should be better studied in the future.