

What's New in the Patient Safety World

December 2022

Game Changer to Prevent SSI's in Abdominal Surgery?

Surgical site infections (SSI's) remain a significant problem, particularly in abdominal surgeries. What if we had a simple, inexpensive intervention that could reduce SSI's? Investigators recently completed a study that suggests we have one!

ChEETAh was a multicenter, cluster randomized trial in seven low-income and middle-income countries (Benin, Ghana, India, Mexico, Nigeria, Rwanda, South Africa), across a wide range of operation types, hospital types, and countries. Investigators randomly assigned 81 surgery locations to either the current practice group (n = 42) or the intervention group (n = 39). The intervention was **a change of sterile gloves and change to sterile instruments before closure** of the surgical incision in a variety of abdominal surgical procedures.

Data was obtained on over 13,000 patients. Glove and instrument change took place in 58 (0.8%) of 7157 patients in the current practice group and 6044 (98.3%) of 6144 patients in the intervention group. The SSI rate was 18.9% in the current practice group versus 16.0% in the intervention group (adjusted risk ratio: 0.87, p=0.0032).

The authors conclude that ChEETAh robustly shows that routine change of gloves and instruments before wound closure reduced surgical site infections in clean-contaminated, contaminated, and dirty surgery, which was consistent across several sensitivity analyses. Lack of heterogeneity of effect across any of the prespecified subgroups suggests that the effect is consistent across a wide range of patients.

The accompanying editorial ([Abiad 2022](#)) notes some limitations of the study (cluster design, intention-to-treat analysis, lack of blinding, and failure to differentiate double-gloving from single-gloving). But it concludes that, despite these limitations, the results of the trial are plausible, meaningful, and impactful. Change of gloves and instruments before skin closure in clean-contaminated and contaminated-dirty abdominal procedures prevents one of every eight SSI's, and the results are possibly if not probably generalizable globally and to non-abdominal surgery.

Although the study had a pragmatic design and was done solely in low-income and middle-income countries and the SSI rates were quite high in both the usual care group and intervention group, we agree the results may well be generalizable. We'd like to see this study replicated in the US and other high-income countries, and perhaps in surgeries in addition to abdominal surgery. But this could well be a game changer!

References:

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