Standard of the Month – October 2020

Covering of Sterile Setups:

One change that was made in to the 2019 (14th Edition) of the ORNAC Standards, was that covering of back tables is now permitted under certain circumstances. For this month's *Standard of the Month*, we wanted to give you a bit of background on how we arrived at this change. The Standards relating to covering of sterile fields can be found in Section 2 – Establishing and Maintaining the Sterile Field, 2.16.19-2.16.21.

Firstly, we do want to be clear. ORNAC does not recommend routine covering of sterile setups as a substitute for continuous monitoring of sterile setups when there is an unanticipated delay in surgery (Standard 2.16.20).

We also want to be clear that the major concerns surrounding covering of sterile setups are still valid. These include;

- by covering a setup, you are not able to visualize the setup and therefore contamination could occur unnoticed (e.g. an insect could crawl or fly under a table cover); and
- removing a cover from over the table is difficult to accomplish without changing the level of the drape or drawing the part of the drape that was below the sterile field up onto the sterile field (see Standard 2.16.5)

Research on this topic is limited, however here is a brief summary of some of the research we referenced and used to guide the addition of this standard.

Dalstrom et al (2008), looked at contamination of instrument sets that were opened in a controlled OR environment over a four hour period. They tested three sets of conditions. In the first group, the trays were left uncovered in a locked OR; in the second group they were left uncovered with controlled traffic patterns (one person entering the OR and walking briskly by the setup, once every 10 minutes); and in the third group, the trays were covered with a sterile towel and left in a locked OR. The covered trays (group three) were found to have no contamination. The other two groups had some contamination and there was no difference between them. While this study did conclude that covering trays with sterile towels did eliminate contamination, the authors admit there were several limitations including the fact that these tests were not reflective of a "real world" Operating Room environment. It is also important to note that the method used in this study was to cover individual trays and not entire back table setups. A sterile towel covering only an instrument set may be removed more easily and without contamination than a cover over an entire table.

The study by Chosky et al (1996) looked at both different air flow/management and the covering of setups. They found a four-fold decrease in contamination between the trays that were covered compared to trays that were not covered after preparation (setup) and prepared in a theatre with conventional airflow. They found a 28 fold decrease when setups were prepared in an ultraclean-air

environment AND covered while the patient was transferred to the operating table. The authors did not describe the method used to cover the sterile setup.

We could find no research that looked at different methods of covering setups or whether any methods were more or less effective at reducing exposure to environmental contaminates, or were more or less difficult to remove while maintaining the sterile boundaries of the setup. The recommended procedures listed in Standard 2.16.21 are based on our own experiences. Since the main purpose of covering a back table is to prevent contamination, we have to assume that the table cover once applied is contaminated, therefore it should be an unscrubbed person (i.e. Circulating Nurse) who removes them.

Considering all of the above, there are some important things to keep in mind when deciding whether or not it is appropriate to cover a sterile setup:

- Covering setups is not a substitute for continuous monitoring of a sterile setup.
- Sterile setups that have been covered, shall be continuously monitored in case the cover shifts, is moved with air currents generated or by personnel passing by the field, or contaminated in some other way.
- Setups may be covered during periods of increased activity or risk of exposure to environmental contaminates. Examples may be – Opening doors to bring additional equipment into or out of the OR (disrupts the air flow), disruptions to the normal functioning of the air flow system (power failure or fire in an adjacent area), or a Cardiac Arrest or other crisis necessitating a large number of health care professionals entering the Operating Room (assuming surgery is paused for the duration of the event).
- If setups are covered, they need to be covered in a way that enables the cover to be removed without drawing the parts of the drape that were below the sterile field up onto or over the sterile field. We recommend utilizing a two drape system, where each drape is cuffed and covers half of the sterile field and is secured in place with clips – the cuffed drapes can be drawn away from the middle of the table by the circulating nurse without contaminating the field below.
- ORNAC recommends that health care organizations develop standardized procedures and policies for both the circumstances under which covering setups is acceptable, and a standardized procedure for covering the setup.

We hope this provides some useful information and background when implementing this new standard at your clinical sites.

References

Chosky, S. A., Modha, D. & Taylor G. J. S. (1996) Optimisation of ultraclean air: The role of instrument preparation. *The journal of bone and joint surgery. British volume. 78-B*(5), 835-7.

Dalstrom, D. J., Venkeatarayappa, I., Manternach, A. L., Palcic, M. S., Heyse, B. A., Prayson, M. J. (2008) Time-dependent contamination of opened sterile operating-room trays. *The journal of bone and joint surgery. American Volume. 90-A*(5). 1022-5 doi:10.2106/JBJS.G.0068