

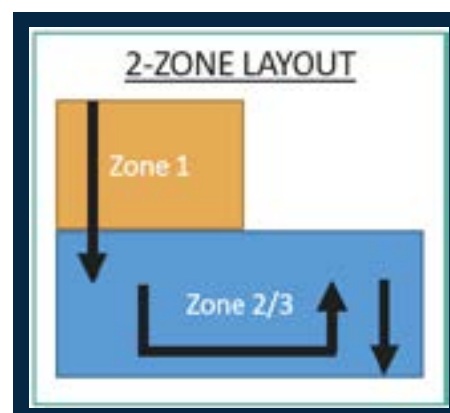


CENTRAL STERILE MODERNIZATION: Typical CSS department configurations

Modern Central Sterile Services (CSS) departments are typically configured in one of two basic designs: a two-zone or three-zone layout. While there are various ways each layout can be utilized, they generally adhere to common characteristics. For example, both layouts require instrument workflow (after decontamination) from clean to sterile to be compliant with AAMI and industry standards.

TWO-ZONE CONFIGURATION: A two-zone configuration – the most common layout for a CSS located within a healthcare facility

– separates the CSS into Decontamination (Zone 1) and Prep/Pack/Clean & Sterile Stores (Zone 2). In a two-zone configuration there is no physical separation between the clean and sterile spaces.



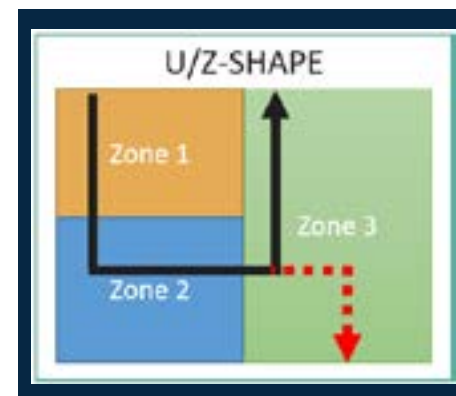
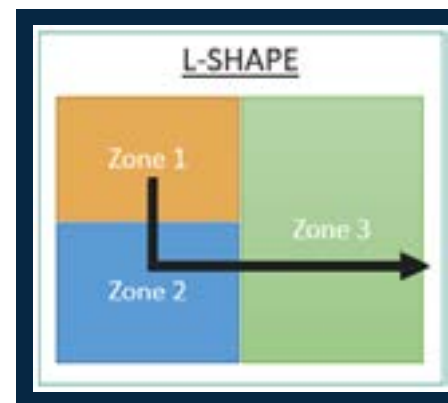
Advantages of the two-zone configuration:

- Space utilization. With no barrier between the clean and sterile spaces, more non-standard spaces (i.e., angled walls, abnormally shaped room configurations, etc.) can be utilized. For example, the assembly areas could flow into and around the sterile space in which the instruments flow from a sterilizer to sterile storage.
- Increased flexibility in department configuration and equipment layout. Sterilizers can be located on multiple walls, or across from each other, since they are not pass-through type. Instrumentation enters and exits the sterilizer via Zone 2. This can be beneficial for facilities with a restricted footprint.

Disadvantage of a two-zone configuration:

- Cross contamination. Potential exists for clean and sterile product to cross one another. Flow is meant to go from clean to sterile, but this layout does not provide 100 percent separation (though this is still allowed per AAMI standards).

THREE-ZONE CONFIGURATION: A three-zone configuration – the layout offering the most efficient process workflow – separates the CSS into Decontamination (Zone 1), Prep/Pack/Clean (Zone 2), and Sterile Stores (Zone 3). In a three-zone configuration there is physical separation between clean and sterile spaces, ensuring that dirty and sterile do not cross each other. Given the choice, the three-zone concept should be



utilized whenever possible – regardless of an on-site or off-site approach.

Depending on site conditions, there are several floor plan layout options to consider when pursuing a three-zone configuration. Four commonly seen layout options are straight, L-shape, U-shape, and Z-shape; each layout offers its own subtle advantages. Typical drivers for layout strategies include adjacency to the surgical suite, layout of medical equipment, and limitations outside of the CSS department.

Advantages of a three-zone configuration:

- Definition of zones. Separation of spaces by physical barrier provides the highest protection against cross contamination.
- Efficient process workflow. Layout provides a defined process workflow from dirty to sterile, with no ability for clean and sterile instruments to cross paths or backtrack.

Disadvantage of a three-zone configuration:

- Increased footprint. This option generally requires increased square footage and applies restrictions for departmental layout.

CSS configuration summary

While two-zone and three-zone configurations are suitable for on-site or off-site solutions, a two-zone approach is most frequently realized when a modernization project is internal to an existing facility with limited space. In this scenario, the two-zone approach can utilize its advantages of increased flexibility and

decreased footprint. For example, a three-zone configuration may require approximately 20% increase in footprint (for the same facility) compared to a two-zone configuration.

A three-zone CSS department would be preferred when footprint is not an issue, or when the CSS is in a new addition or a stand-alone facility. The construction of new space offers flexibility to coordinate the department layout (typically in a box shape) to align with the most efficient workflow and equipment needs.

In either configuration, case volume, tray counts, instrument types, and required process equipment (e.g., sterilizer, washer/disinfector) will ultimately dictate the size of the department. From a staffing (FTE) perspective, there is typically no difference between a two-zone and three-zone layout due to automated equipment and improved process workflow.

For more information, contact IMEG Healthcare Client Executive [Josh Heacock](#).

ADDITIONAL READING

White paper: [Central Sterile Modernization: A Guide to On- vs. Off-site Facilities](#)

Case study: [University of Iowa Hospitals & Clinics' Off-site CSS](#)

