

Healthcare-associated infections can be reduced through intervention events. The additional costs associated with interventions can potentially be offset by HAI-related savings.

### **PROPOSED INTERVENTION: Switch from Alcohol Pads to Disinfection Caps**

During a 12 month period, our facility had 55 CLABSI events. The intent of this intervention is to reduce those infections by 5%.

#### **Costs**

- Estimated cost of implementing over a 12 month period: \$92,578
  - This estimate is based on:
    - A cost of \$0.2 per intervention event
    - 8.4 intervention events per patient-day or device-day
    - A one-time additional cost of \$0
- Estimated cost of current practice over a 12 month period: \$9,257
  - This estimate is based on a cost of \$0.02 per intervention event.
- Difference between current practice and the proposed intervention: \$83,320

#### **Savings**

- Estimated savings from a 5% reduction in CLABSI events: \$132,000
  - Estimated reduction needed to offset the cost of the intervention: 3%
  - These estimates are based on an attributable cost of \$48,000 per CLABSI.

# Intervention Cost Calculator: Methodology & Limitations

## PURPOSE

This report provides:

- The cost of the current practice
- The cost of the new practice, and
- How often the event of interest is occurring in your facility (e.g., how often a specific product is used).

This output can optionally be combined with output from other calculators on this site to emphasize the expected benefit of the intervention.

## LIMITATIONS

- This tool focuses on the cost that is incurred each time the new product or process is used (e.g., use of a new skin prep with each surgical patient). It does not take into account other costs like those associated with training staff about the intervention or changes in productivity of the healthcare delivery team.
- This tool is intended for interventions that involve a new product or process that is used multiple times (e.g., use of a new skin prep with each surgical patient). It is not intended for use with interventions that only involve a one-time cost (e.g., purchasing new sterilizers).
- The estimates provided by this tool assume that the denominator remains relatively constant from the pre-intervention time period to the post-intervention time period (e.g., there are equal numbers of device-days during the two time periods).

## METHODOLOGY

- The tool guides the user through the exercise of estimating the cost of an intervention, accounts for the deferred cost of replacing an existing practice when applicable, includes a one-time cost if applicable.
- When the tool is used by itself, it assesses cost-benefit by comparing the estimated cost with the cost avoidance. The user provides the estimated cost per HAI that they want to use and can reference AHRQ estimates if they lack facility-specific data<sup>1</sup>.
- When the tool is used in conjunction with the MAT or DART calculators it assesses cost-benefit by comparing the estimated cost with the cost avoidance calculated in those additional tools.

## EXPLANATION OF OUTPUT

See the Intervention Cost Calculator (ICC) tool sample report at [https://haitools.apic.org/Sample\\_ICC\\_Report.pdf](https://haitools.apic.org/Sample_ICC_Report.pdf). In this hypothetical example, the proposed intervention is a switch from scrubbing the hub with alcohol pads to using alcohol disinfection caps that remain on the hub when not being accessed.

The estimated cost of implementing the intervention over 12 months (\$92,578) was calculated by multiplying the per-use cost of the alcohol caps (\$0.20) by the estimated number of intervention events (8.4 events per central line-day multiplied by 55,106 central line-days) and adding the one-time additional cost (\$0).

The estimated cost of the current practice over 12 months (\$9,257) was calculated by multiplying the per-use cost of the alcohol wipes (\$0.02) by the estimated number of intervention events (8.4 events per central line-day multiplied by 55,106 central line-days).

The difference between current practice and the proposed intervention was calculated by subtracting the cost of the current practice from the cost of the proposed intervention.

The estimated savings from the 5% reduction (\$132,000) was calculated by multiplying the cost per CLABSI (\$48,000) by the number of prevented CLABSIs (55 CLABSIs multiplied by 0.05).

Dividing the additional cost of the intervention (\$83,320) by the attributable cost of all the CLABSIs (55 CLABSIs multiplied by \$48,000) reveals a required CLABSI reduction of 3% for cost neutralization. In other words, if the intervention results in a 3% (or greater) reduction in CLABSIs, the cost of the intervention is potentially offset.

When combined with DART data, the attributable cost of the HAI is not incorporated. Instead, this tool compares the total intervention cost to the payment that could potentially be received by performing additional procedures.

When combined with MAT data, the attributable cost of the HAI is not incorporated. Instead, this tool uses the total intervention cost and the estimated number of lives saved to provide an estimated cost per life saved.

## REFERENCES

1. Estimating the additional hospital inpatient cost and mortality associated with selected hospital-acquired conditions. Content last reviewed November 2017. Agency for Healthcare Research and Quality, Rockville, MD. <https://www.ahrq.gov/hai/pfp/haccost2017-results.html>