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## The Basics of a Business Case for Infection Prevention

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An average of 1.7 million healthcare-associated infections (HAI) are reported in this country every year, and an estimated 99,000 cases will result in death.<sup>1</sup> To help put this in perspective, 99,000 would be equal to a 747-jet full of passengers crashing every day for 198 days.

According to some experts, 55 percent to 70 percent of all HAIs are preventable.<sup>2</sup> Accordingly, 70 percent of 1.7 million or 1.2 million patient infections, could be avoided every year with the application of evidence-based infection prevention measures, when directed by a clinically expert infection prevention director and/or team.

Zero preventable HAI is the goal of all IP departments, though sustained zero preventable HAI remains an aspirational goal for most locations. The fact that so many HAI are preventable should be a key message emphasized in any effective business case for Infection Prevention (IP), whether proposing additional resources, infection surveillance software, or implementation of a new product.

There have been numerous peer reviewed publications which can be used to help develop a business case for the addition of a product or full time equivalent (FTE) for the IP department. Some of these papers have estimated the cost of HAI including the paper by Murphy, et al. in 2012<sup>3</sup> and by Zimlichman et al in 2013.<sup>4</sup> In her paper, Murphy cites a study of 1.69 million admissions from 77 hospitals that found an HAI reduced overall net inpatient margins by \$286 million or \$5,018 per infected patient.<sup>3</sup>

Additional publications propose IP department staffing guidelines such as the study by Bartles published in AJIC this year.<sup>5</sup> And still others propose basic steps to take when developing a business case, including several published in *Infection Control Today*.<sup>6,7</sup>

One thing is certain, one component of a business case should be the facility specific return on investment (ROI), whether proposing the addition of an FTE or implementing a new product. This does not necessarily need to be a complex equation. At a minimum it should reflect the estimated cost of what is being proposed compared to the cost associated with relevant local HAI. The associated costs have been estimated with accuracy in published papers and include treatment costs, non-reimbursement, public perception, organizational reputation, and lost revenue from beds occupied by infected patients. To further aid in business case

development, local HAI cost estimating tools using these published costs per infection type, have been developed including those provided free of charge by the Association for Infection Control and Epidemiology (APIC) (<https://apic.org/Resources/Cost-calculators> ). These tools can eliminate the need to manually calculate your facility specific costs which are associated with healthcare associated infections.

An important step while preparing an IP business case is identifying an executive champion who will provide support with local decision makers. This champion is often an infectious diseases physician but could be a chief nursing officer or other executive. The champion must be an individual who has influence with his or her peers and other clinical leaders.

The business case can be short and simple or detailed and lengthy. This, of course, is dependent upon what is being proposed, as well as how much time, experience and support the IP has, such as from a local finance expert. It's not always necessary to generate an exhaustive document. The following four steps represent a minimum of detail that should be included in any business case for infection prevention departments.

1. Specify what problem you are addressing and the solution you are proposing. Is it a new product? more IP resources?
2. Estimate the cost of what you are proposing.
3. Determine the cost associated with local relevant HAI using a cost calculator.
4. Determine your basic ROI (HAI cost – proposed product/FTE cost = ROI).

Once the proposal is prepared, a presentation should be made to the decision maker(s) in collaboration with the executive champion. Depending upon what is being proposed (product or resource), this might be the Value Analysis Committee, Human Resources or it could be an individual such as the chief medical officer, or other local leader.

The goal of any infection prevention business case is to convey the message that investing in prevention can have a profoundly positive impact on the organization's

bottom line, patient safety, satisfaction and reputation.

Unless the local preventable HAI rates of all types are sustained at zero, there is leverage for a business case to support the addition of a product or FTE. To those without experience or training in building a business case, the process may seem daunting. However, there are tools available to assist in estimating the costs associated with your local HAI, to determine your return on investment. But even more important is identifying an influential executive champion who can work with you to present the proposal to local decision makers. A successful business case will demonstrate that the investment is beneficial to both the organization and to the patients.

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STEP 1: Introduction, problem and proposed solution:

Example 1:

Introduction: Over the course of the past five years, the hospital patient census has increased by 20 percent with the opening of two Intensive Care Units. Due to recently enforced state required reporting of infection rates resulting in a 40 percent increase in clerical time for the two full time IPs, it has not been possible to dedicate time to the ICU and device associated infection prevention. If a full-time analyst/clerical position were added, this would free up clinical IP time to focus in surgical services. Currently our orthopedic SSI SIR is 2.0 – far above the national average.

Problem: Current IP Program staffing level (FTEs) are insufficient to optimize prevention of HAI for inpatients and outpatients as evidenced by CLABSI and CAUTI SIR 2.0 for 12 months.

Proposed solution: Increase IP program staffing by 1.0 FTE Clerical position, for automated infection surveillance, public reporting, to free up clinical IP experts to coordinate enhanced CLABSI, CAUTI prevention plan.

**Example 2:**

**Introduction:** Over the course of the past 5 years, the hospital patient census has increased by 20 percent with the addition of colorectal surgery. Despite a four-point colorectal SSI prevention bundle, the SIR has remained at 2.0 for 12 months.

Currently there is a wide variation among colorectal surgeons with regard to intraoperative surgical irrigation, with some using antibiotic irrigation and some using saline alone.

**Problem:** Current SSI rate for colon procedures >1.0 SIR for 12 months despite 4 point SSI prevention bundle (preop CHG bathing, antibiotics, skin prep, antimicrobial sutures)

**Proposed solution:** Implementation of 0.05% sterile chlorhexidine surgical irrigation solution prior to closing for each case.

**STEP 2: Estimated cost of proposed solution:**

Example 1: 1.0 clerical staff FTE for IP department = \$40K/year

Example 2: \$50/Liter 0.05% chlorhexidine sterile irrigation per case x 100 cases = \$5,000

**STEP 3: Estimated cost of current relevant HAI:**

Example 1: CLABSI incidence past 12 months = 10 x \$45814 per infection = \$458,140

Example 2: Colon SSI incidence past 12 months = 15 x \$20,785 per infection = \$311,775

Use APIC HAI cost calculator: <https://apic.org/Resources/Cost-calculators>

**STEP 4: Conclusion including estimated basic ROI for proposed solution (cost of current HAI x 12 months - cost of solution x 12 months = ROI):**

Example 1: Conclusion including estimated basic ROI for proposed solution: Given the imperative of reducing the CLABSI and CAUTI rates in our ICUs in order to avoid non-reimbursement, negative public perception, and ensure successful CMS and TJC surveys, we recommend addition of 1.0 clerical/analyst FTE. This would allow the expert IPs time to devote to optimizing infection prevention bundles, in order to ensure elimination of preventable infections (60 percent of \$458,140 = \$274,884). This would then result in a return on investment of \$274,884 to \$40,000 = \$234,884 for the year.

Example 2: Conclusion including estimated basic ROI for proposed solution: Given the imperative of reducing the colorectal SSI rate in order to avoid non-reimbursement, negative public perception, and ensure successful CMS and TJC surveys, we recommend approval of implementation of 0.05 percent CHG sterile surgical irrigation solution applied at the end of each case prior to closing, following manufacturer guidelines. This would supplement the current colorectal SSI prevention bundle, to ensure elimination of preventable infections (60 percent of \$311,775 = \$187,065). When accounting for the cost of the CHG irrigation solution, the resulting return on investment would be \$182,065 for the year.

## References

1. CDC statistics <https://www.cdc.gov/washington/~cdcatWork/pdf/infections.pdf>
2. Umscheid CA<sup>1</sup>, Mitchell MD, Doshi JA, Agarwal R, Williams K, Brennan PJ. Estimating the proportion of healthcare-associated infections that are reasonably preventable and the related mortality and costs. *Infect Control Hosp Epidemiol*. 2011 Feb;32(2):101-14.
3. Murphy D et al. Dispelling the Myths: The True Cost of Healthcare-Associated Infections. *AJIC*. May 2012, Volume 40, Issue 4, Pages 296–303.
4. Zimlichman E et al. HealthCare–Associated Infections A Meta-analysis of Costs and Financial Impact on the U.S. Health Care System. *JAMA Internal Medicine* Published online September 2, 2013
5. Bartles R, Dickson A, Oluwatomiwa B. A systematic approach to quantifying

infection prevention staffing and coverage needs. AJIC. May 2018, Volume 46, Issue 5, Pages 487–491.

6. Oh J. 6 Steps to Make the Business Case for Infection Prevention. Becker's online journal; Oct. 26, 2012.

7. Pyrek KM. Making the Business Case for Infection Prevention. Infection Control Today. February 2011.

8. SCRBD Business Case Template

<https://www.scribd.com/document/153295718/PPP-Business-Case-Template-En>

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