

Quantros IC Insight: HAI Impact

Reducing Clinical and Financial Impact of Hospital Acquired Infections

Quantros IC Insight provides Real-time surveillance and continuous monitoring for use in reducing the incidence and impact of infections, including serious Hospital Acquired Infections (HAIs) within the healthcare provider care environment. This web-based surveillance and workflow management platform efficiently arms Infection Control Professionals (ICPs) with actionable data that, to date, has been difficult to gather and highly retrospective.

With IC Insight in place healthcare providers have up to the minute vision into infections across their pharmacy, lab, microbiology and ADT systems. ICPs will spend their time using their clinical background to improve hospital conditions and train staff on best practices rather than drowning in administrative tasks associated with data collection and aggregation. With IC Insight, ICPs are more efficient and can focus on value-added infection reduction and protection efforts.

The IC Insight application provides for:

- Active, real-time surveillance for all infections across all units
- End-to-end infection control workflow management
- Administrative cost reductions associated with infection control data mining and analysis
- Reduced HAI presence resulting in lower associated cost of care and extended patient stays
- Compliance with NHSN data submission requirements

The Value of Infection Control Surveillance with IC Insight

- *Rapidly identify early warning signs and reduce infection rates and ADEs*
- *Substantially decrease the clerical paper chase and improve workflow management*
- *Swiftly communicate information to deliver optimal clinical care throughout your environment*
- *Easily generate reports for use in analysis and executive presentations*
- *Continuously and automatically monitor infections and drug events*

Healthcare Provider Costs Associated with Infection Control

While there has been some debate concerning what constitutes expenses in manual surveillance and control initiative, supplies, medications, devices and staff time are some of the areas that have been identified. Consider the following analysis:

- 40%+ of ICP efforts is on manual review of clinical data¹
- Manual review time: 17 minutes per admission²

Considering the cost of ICP resources, a real-time infection control system such as IC insight helps make your healthcare organization more effective and reduces administrative overhead.

¹ Nguyen GT, et al. Status of infection surveillance and control programs in the United States 1992-1996. Am J Infect Control 2000;28:392-400.

² Brossette et al. A laboratory-based, hospital-wide, electronic marker for nosocomial infection. Am J Clinical Path 2006; 125:34-39.

HAI Add Length of Stay Costs

Many studies have been conducted and published to review the costs of care associated nosocomial events. Analyses typically identify the additional financial burden in terms of excess length of stay. Others identify the additional costs associated with the infection. While the numbers vary, experts agree the problem is large and the need for improvement is great.

Reimbursements for HAIs Ending

As noted in the recent reports from CMS, hospitals will no longer be paid for Hospital Acquired Conditions (CMS terminology for HAIs) in specified infection categories. The financial impact to hospitals will continue to increase as more conditions are added and additional payers mirror CMS policies.

HAI Reference Materials

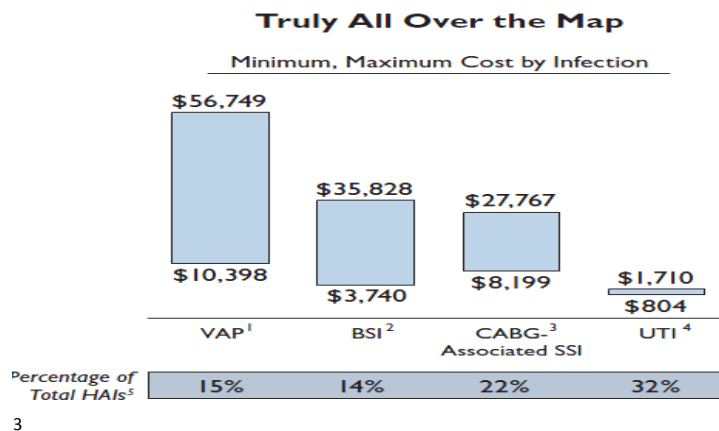
Quantros IC Insight enables organizations to understand their infection rates, reduce surveillance burden by automating the entire process and reduce the incidence of serious HAIs, along with the associated avoidable costs. The following reference material outlines the issues and impact of HAIs within the healthcare provider environment

Impact of HAIs

- Number of patients affected
 - Two million infections per year (Levin, 2005)
 - 1 in 10 patients nationally
 - On a given day 90,000 patients in ICUs in the US, an average patient requires ~180 “actions” per day

- Number of deaths
 - 90,000 – 100,000 people a year (Levin, 2005)

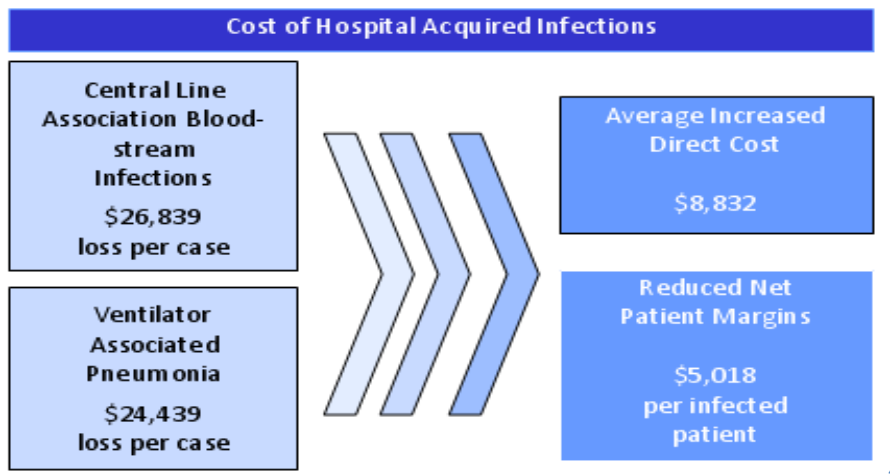
Type of infection



³ Source: Advisory Board, Source: JSI Research and Training Institute, Inc., “Prevention And Control of Healthcare-Associated Infections in Massachusetts,” available at: http://www.jsi.com/Managed/Docs/Publications/HealthCareServices/prevention_control_hai.pdf, accessed March 19, 2008; Clinical Advisory Board interviews and analysis.

HAI Costs

- Cost: \$15,000 – \$25,000 per case (McCaughey, 2005; CDC)
- Cost estimates from hospitals in Pennsylvania
 - treating UTI patients: \$450,000
 - each patient who developed pneumonia while on a ventilator: \$1.25 million
 - \$1.4 million per patient with multiple infections
 - \$5 billion to \$11 billion total (Pronovost, 2008)



Cost of Infection by Site⁵

Estimated Costs by Site of Infection	Incremental cost of hospital stay
Cerebrospinal fluid	\$ 31,573
Respiratory	24,408
Eye	20,626
Ear, nose, and throat	15,714
Other	15,339
Gastrointestinal	13,606
Blood	12,774
Abscess	12,637
Stool	7,365
Wound	7,059

⁴ 1.6 Million Admission Analysis, MedMined, Inc. September 2006 and Shannon, Richard, MD, Hospital-Acquired Infections: Meeting the challenge. American Journal of Medical Quality, Supplement to Vol 21, No.6, Nov-Dec. 2006

⁵ Meredith L. Kilgore, PhD, et.al, The Costs of Nosocomial Infections, Medical Care • Volume 46, Number 1, January 2008,

Selected Hospital Acquired Conditions

Condition	# Medicare Cases in FY 2006	Average Medicare Payment when Condition present
Catheter Associated UTI	117	\$40,347
Post CABG Mediastinitis	108	\$304,747
Catheter-associated BSI ⁶	??	??

⁶ A new ICD-9 code (999.31) added 10/1/07 to cover this. Source: Rosenthal MB. Nonpayment for Performance? Medicare's New Reimbursement Rule. NEJM. 2007 Oct; 357(16):1573-1575.