Lifting the Curtain on SIR Calculations

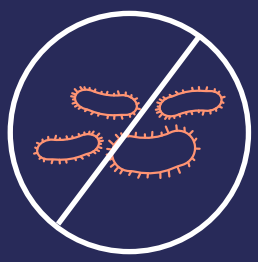
(and why they aren't as good a metric for HAIs as you may think)

What are SIR rates?[1]

The Standardized Infection Ratio (SIR) is a calculation based on actual, or observed, number of hospital-acquired infections (HAIs) reported at a hospital divided by the predicted number of HAIs for that hospital.

The SIR is used by the National Healthcare Safety Network (NHSN) to determine where a hospital is performing against a national, state, local or facility level over time and is also a factor in determining a hospital's HAC score for which the bottom-performing quartile of hospitals annually receive a mandatory 1% penalty on their inpatient Medicare revenue.

SIR compares the actual number of HAIs reported to the number that would be predicted, given the standard population (i.e., NHSN baseline), adjusting for several risk factors that have been found to be significantly associated with differences



Hospitals should strive to do everything possible to reach ***zero HAIs.***

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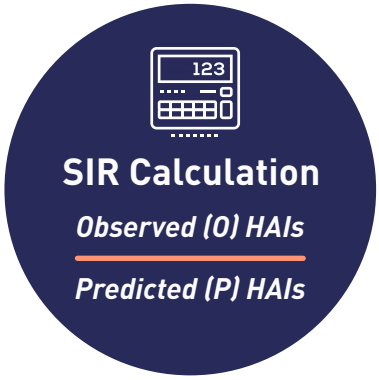

in infection incidence. In other words, a SIR greater than 1.0 indicates that more HAIs were observed than predicted; conversely, a SIR less than 1.0 indicates that fewer HAIs were observed than predicted. The predicted number of an HAI type for a specific hospital is based on a number of risk factors as determined by the Centers for Disease Control and Prevention (CDC) and Centers for Medicare & Medicaid Services (CMS) such as hospital size and location, patient population and procedural categories.

Does a predicted number of HAIs create complacency?

SIR calculations set a predicted number of HAIs that a hospital is expected to have before facing any penalties; and typically, a hospital is not in penalty range unless it is above the threshold for multiple HAI types. While a hospital may remain below the set threshold, it could still experience a large number of HAI infections which are a massive threat to patient safety—leading to higher risk of mortality, longer lengths of stay and increased readmissions. We cannot accept a

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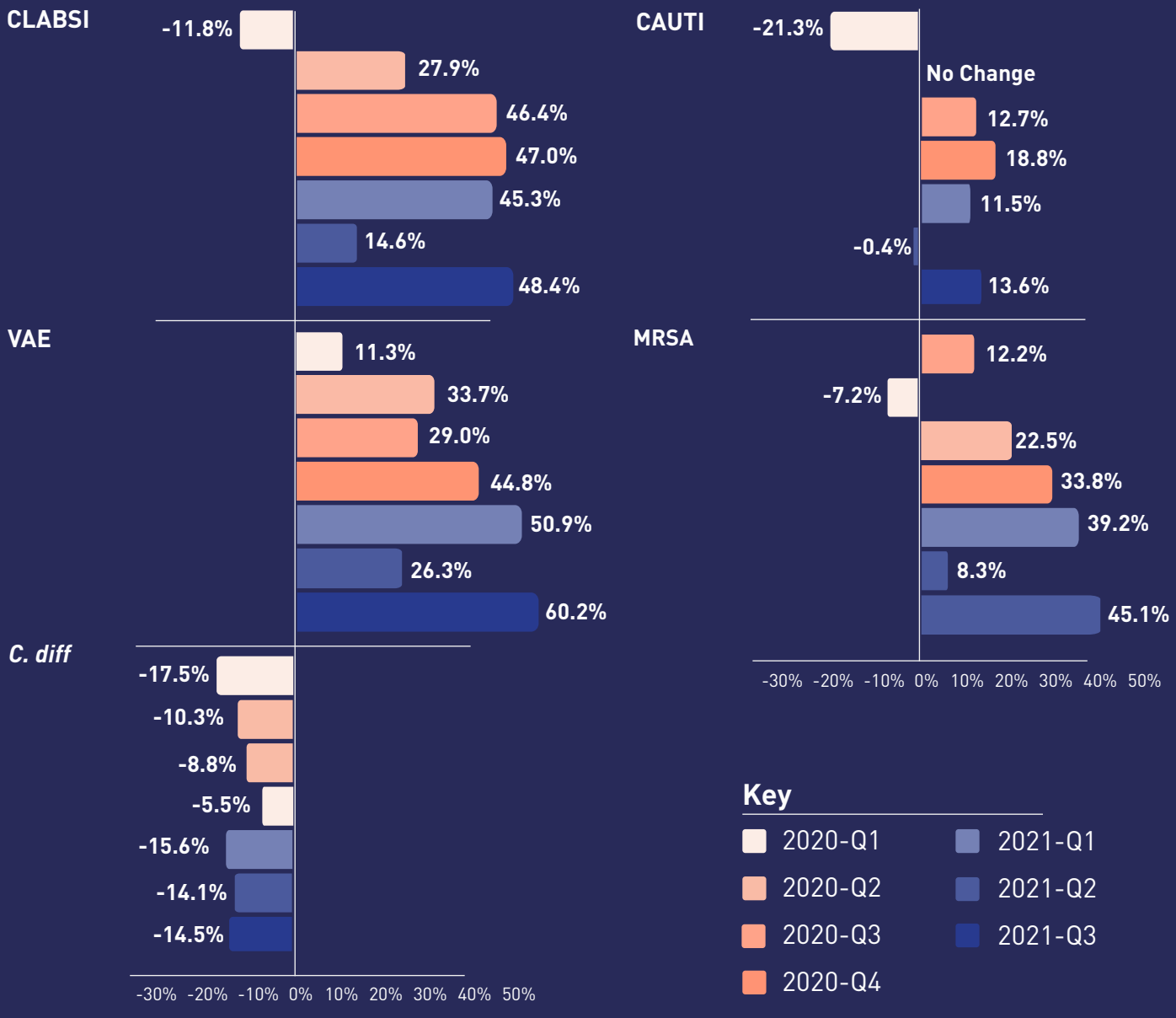
mindset that maintaining a number of HAIs below the threshold for financial penalty is enough.

Many HAIs, particularly *Clostridioides difficile* (*C. diff*), can be prevented through proper surface disinfection. Additional evidence/data collected during COVID supports this theory. While other HAIs such as CLABSI, CAUTI, VAE and MRSA showed significant increases in cases in 2020 and 2021, *C. diff* cases declined, which experts have associated with the increased focus on proper handwashing, surface disinfection and personal protective equipment employed during the height of the pandemic.[2]

Conversely, as the pandemic risk has

HAIs Increase Dramatically in 2020 and 2021[3]

Graph shows % change by quarter



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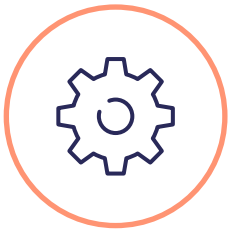
decreased, the extra precautions associated with preventing COVID infections have decreased as well, with studies suggesting that hand hygiene compliance has already fallen to pre-pandemic rates.[4] Assuming a reduced focus on surface disinfection as well, there is a high likelihood that *C. diff* rates may also increase once again. Predicting an expected number of any given HAI unfortunately allows hospitals to approach disinfection with a safety net mentality where so as long as they stay below the expected number of HAIs and below the penalty threshold, they may not be as vigilant in preventing them. While getting to zero HAIs is not likely realistic, a significant portion of HAIs are avoidable through consistent application of infection prevention measures. However, complacency and acceptance of incremental increases and declines in reported HAIs versus expected infections does not prevent the nearly 1.7 million HAIs contracted by hospital patients each year, nor the billions of dollars in costs to hospitals annually as their result.

Don't let your guard down when it comes to environmental infection prevention

Protecta®, an evidence-based environmental infection prevention program used in hospital sites nationwide, can offer peace of mind with a proven approach to achieving your HAI goals, and most importantly, create a safe and reliably clean environment for staff and patients.

Protecta is a best-in-class, integrated infection prevention solution including:



Processes

Training

Technology

Disinfectants and sporicidal

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