Tracking Healthcare-Associated Infections

CDC’s National Healthcare Safety Network (NHSN) is the largest healthcare-associated infection (HAI) reporting system in the United States. CDC, states, healthcare facilities, and other patient safety organizations use this data to identify problem areas, measure progress of prevention efforts, and ultimately eliminate HAIs.

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What is the healthcare-associated infection progress report?

CDC’s HAI progress report gives snapshots of how each state and the country are doing in eliminating HAIs. This report describes the progress in preventing the following types of HAIs:

- **Central line-associated bloodstream infections (CLABSIs)** happen when a central line isn’t put in correctly or kept clean. This allows the central line to become a freeway for germs to enter the body and cause serious bloodstream infections.

- **Surgical site infections (SSIs)** are infections that occur after surgery in the part of the body where the surgery took place.

- **Catheter-associated urinary tract infections (CAUTIs)** are infections that involve any part of the urinary system, including urethra, bladder, ureters, and kidney.

The report is based on data reported to CDC’s NHSN. NHSN provides a secure way for healthcare facilities to track HAI data. Researchers use the data to calculate a standardized infection ratio (SIR) for each reporting state and facility.

How serious are healthcare-associated infections?

HAIs are a significant cause of illness and death. At any given time, about 1 in every 20 inpatients has an infection related to hospital care. These infections cost the U.S. healthcare system billions of dollars each year and lead to the loss of tens of thousands of lives. In addition, HAIs can have devastating emotional, financial, and medical consequences.

How can I use this report to help prevent healthcare-associated infections?

This report is a useful tool for federal, state, and local government; healthcare facilities; and patient safety organizations and advocates to lower HAIs.

Use this report to:

- Measure progress toward the HAI prevention goals outlined in the U.S. Department of Health and Human Services (HHS) [Action Plan to Prevent Healthcare-associated Infections](#).
- Assess the impact of state-based HAI prevention programs. Find local facilities that have significantly more infections than others in the area.

What is the benefit of reporting healthcare-associated infection data?

Research shows that when healthcare facilities and clinicians are aware of infection problems and take specific steps to prevent them, certain HAIs can decrease by more than 70 percent.
Infection data can give healthcare facilities and public health agencies the knowledge they need to design, implement, and evaluate prevention strategies that protect patients and save lives.

CDC believes that public reporting of HAIs is an important part of overall healthcare transparency efforts and of national HAI elimination.

**What makes the National Healthcare Safety Network a good measurement tool?**

With more than 12,000 healthcare facilities participating, NHSN is the largest HAI reporting system in the United States. NHSN provides standard methods and definitions, online training modules, user support, and facility comparison tools. Nearly all U.S. hospitals and dialysis facilities are able to successfully report to NHSN, making it an important tool for national HAI tracking and elimination.

**Report Findings**

**Have we made progress in reducing central line-associated bloodstream infections?**

The report shows a national decrease in the incidence, or occurrence, of central line-associated bloodstream infections (CLABSIs). As of 2011, CLABSIs are down nationally by 41 percent. These encouraging findings reflect the work of clinicians and facilities; local, state, and federal government; and cross-cutting partnership groups that have taken on CLABSI prevention efforts. We hope that all states and healthcare facilities will be motivated to continue and strengthen efforts to prevent CLABSIs.

A central line is a tube placed in a large vein of a patient’s neck or chest to give important medical treatment. When not put in correctly or kept clean, a central line can become a highway for germs to enter the body and cause a serious bloodstream infection.

HHS has set a goal of reducing CLABSIs nationally by 50 percent by the end of 2013.

<table>
<thead>
<tr>
<th>Central line-associated bloodstream infections (CLABSIs)</th>
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<tbody>
<tr>
<td>Achieved in 2011:</td>
</tr>
<tr>
<td>41% Decrease</td>
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<tr>
<td>Goal by the end of 2013:</td>
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<tr>
<td>50% Decrease</td>
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Have we made progress in reducing surgical site infections?

As of 2011, surgical site infections (SSIs) are down nationally by 17 percent; however, there is a wide variation in the number of SSIs for specific surgical procedures. In hospitals that have been continuously reporting to CDC’s NHSN, only SSIs following hip arthroplasty decreased from 2010 to 2011. This means we, as a healthcare community, have substantial opportunities to improve prevention efforts across many surgical procedures.

The report includes a national snapshot of the infection risk linked to the following common surgical procedures:

- Hip or knee arthroplasty
- Coronary artery bypass graft
- Cardiac surgery
- Peripheral vascular bypass surgery
- Abdominal aortic aneurysm repair
- Colon or rectal surgery
- Abdominal or vaginal hysterectomy

HHS has set a goal of reducing SSIs nationally by 25 percent by the end of 2013.

<table>
<thead>
<tr>
<th>Surgical site infections (SSIs)</th>
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<tbody>
<tr>
<td>Achieved in 2011: 17% Decrease</td>
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</table>

Have we made progress in reducing catheter-associated urinary tract infections?

As of 2011, catheter-associated urinary tract infections (CAUTIs) are down nationally by 7 percent. The report shows a national decrease in CAUTIs from 2009 to 2010. There was no additional reduction from 2010 to 2011. CAUTIs were down moderately among patients in general wards, but there was basically no reduction of CAUTIs in critical care patients between 2010 and 2011.

Reducing CAUTIs among critical care patients is a special concern because these infections drive antibiotic use. While antibiotics are essential for treating bacterial infections, they also increase patients’ risk for complications. One potentially deadly complication is severe diarrhea caused by the bacteria *Clostridium difficile*.

HHS has a goal of reducing CAUTIs nationally by 25 percent by the end of 2013.
How many healthcare facilities have a high standardized infection ratio?

In each major location group and procedure category, between 2% and 9% of the facilities reported an SIR significantly greater than 1. An SIR greater than 1 means that more infections were observed than predicted.

The following table shows the total number of facilities that had an SIR significantly greater than 1 for different types of HAIs. These numbers are relatively small compared to the total number of facilities that reported data in 2011.

<table>
<thead>
<tr>
<th>Type of HAI</th>
<th>Number of facilities with high infection ratios in 2011</th>
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</thead>
<tbody>
<tr>
<td>Central line-associated bloodstream infection (CLABIs)</td>
<td>54</td>
</tr>
<tr>
<td>Catheter-associated urinary tract infection (CAUTI)</td>
<td>133</td>
</tr>
<tr>
<td>Surgical site infection (SSI) associated with hip arthroplasty</td>
<td>25</td>
</tr>
<tr>
<td>Surgical site infection (SSI) associated with knee arthroplasty</td>
<td>30</td>
</tr>
<tr>
<td>Surgical site infection (SSI) associated with colon surgery</td>
<td>20</td>
</tr>
<tr>
<td>Surgical site infection (SSI) associated with abdominal hysterectomy</td>
<td>15</td>
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What is the standardized infection ratio?

The standardized infection ratio (SIR) is a summary measure used to track HAIs over time. It compares actual HAIs in a facility or state with HAIs in the general U.S. population.

If the SIR is greater than 1:

- The number of infections reported in 2011 is higher than the number of predicted infections.
- A high SIR usually reflects a need for stronger HAI prevention efforts.

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In coming years, we can focus prevention efforts on these facilities to make efficient use of resources.

**Prevention Initiatives**

**What is CDC doing about healthcare facilities with high standardized infection ratios?**

CDC is contacting these facilities and connecting them with prevention initiatives such as:

- State health department collaboratives
- Comprehensive Unit-based Safety Program (CUSP)
- Partnership for Patients
- CMS Quality Improvement Organizations

By moving these hospitals toward more prevention, we hope to see greater national reductions in HAIs next year.

In addition, CDC offers training and technical assistance to help states identify and assist healthcare facilities whose performance doesn't show effective prevention work. We encourage states to monitor their SIR so they can aid prevention efforts in problem areas and measure the effects of prevention work over time.

[View the complete report](#) for more information about how CDC calculates the standardized infection ratio.