Healthcare-Associated Infection
Public Reporting Program

2015 Annual Report

Earl Ray Tomblin
Governor

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West Virginia Health Care Authority
West Virginia Health Care Authority
Healthcare-Associated Infection Public Reporting Program
2015 Annual Report

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Introduction

Healthcare-associated infections (HAIs) are infections that are acquired by patients when seeking treatment in a healthcare setting. In 2002, the Centers for Disease Control and Prevention (CDC) estimated that there were 1.7 million HAIs occurring annually in hospitals in the US, and these infections were associated with 99,000 deaths. In a more recent study, the CDC estimated that in 2011, approximately 722,000 HAIs occurred nationally, which equated to 4% of inpatients in US acute care facilities, and were associated with as many as 75,000 deaths. While both of these studies were estimates and with differing methodology, they illustrate the point that potentially over a million Americans are at risk for contracting a healthcare-associated infection. Of those infected, tens of thousands of deaths are attributable to HAIs. However, these infections are preventable and therefore, a major public health focus for governments and healthcare facilities.

In order to address this serious problem, many national and state agencies have been working towards understanding the full extent of HAIs and how to prevent them from occurring. While elimination of HAIs is a long term goal nationwide, prevention is the focus of short term intervention strategies. In a joint call to action, the Association of Professionals in Infection Control and Epidemiology (APIC), the Society for Healthcare Epidemiology of America (SHEA), and the CDC, along with other public health associations, called for the elimination of HAIs by:

- Promoting adherence to evidence-based practices through partnering, educating, implementing, and investing;
- Increasing sustainability through the alignment of financial incentives and reinvestment in successful strategies;
- Filling knowledge gaps to respond to emerging threats through basic, translational, and epidemiological research;
- Collecting data to target prevention efforts and to measure progress; and
- Sufficient investment underpinning these efforts.

Because HAIs place a large financial burden on the healthcare system, these key principles call upon financial and interagency support to be effective. Understanding the prevalence of HAIs and the potential risk factors for contracting HAIs are the major goals of HAI surveillance and reporting. This is so that effective control and prevention measures can be designed and implemented for improving the incidence of HAIs while reducing associated financial burdens on

facilities. The costs associated with HAI treatment are substantial, with the annual cost of treating HAIs in US hospitals estimated to be $28 to $33 billion dollars.4

HAIs are considered preventable, but there is discussion regarding how many of these HAIs are truly preventable. This has stemmed from the 2008 Medicare decision to stop payment on eight preventable conditions, three of which are considered “reasonably preventable” HAIs: central line associated blood stream infection (CLABSI), catheter associated urinary tract infection (CAUTI), and surgical site infections (SSI).5 There was a systematic review conducted in 2011 to determine the proportion of HAIs that are preventable under the current intervention practices. The study determined that up to 70% of CLABSI and CAUTI cases and 55% of SSI cases are preventable.5 By instituting prevention measures that reduce HAIs by 20%, $5.7 to $6.8 billion dollars a year in US hospitals would be saved.4

A recent report from the Department of Health and Human Services (HHS) shows similar outcomes. In a press release published in December 2014, improved patient safety initiatives to reduce hospital-acquired conditions saved an estimated 50,000 patient lives, preventing 1.3 million hospital acquired infections and saving approximately $12 billion dollars in healthcare costs between 2010 and 2013, which is a 17% reduction in hospital acquired conditions over that time period.6

In addition to the financial incentive of instituting prevention measures within hospitals, the nationwide Hospital-Acquired Condition Reduction Program, instituted in 2010, is a mandatory pay-for-performance program that penalizes hospitals with the highest rates of infections in the nation with a 1% loss to every Medicare payment for one year.7 As of October 2014, approximately 750 hospitals face over $330 million dollars a year in penalties.7 The growing pressure of penalties, coupled with the concern over patient safety, place the prevention of healthcare-associated infections as one of the highest priorities for healthcare facilities across the nation.

**HAI Reporting in West Virginia**

In 2008, the West Virginia Legislature created §16-5B-17 to make HAI data available to the public and to promote quality improvement initiatives to reduce HAIs in West Virginia hospitals. The legislation mandated hospitals to report HAI data and required the West Virginia Healthcare

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4 Scott RD. The direct medical costs of healthcare-associated infections in U.S. hospitals and the benefits of prevention.
Authority (WVHCA) to create a HAI Control Advisory Panel to assist in performing the following activities:

- Provide guidance to hospitals in their collection of information regarding healthcare-associated infections;
- Provide evidence-based practices in the control and prevention of healthcare-associated infections;
- Establish reasonable goals to reduce the number of healthcare-associated infections;
- Develop plans for analyzing infection-related data from hospitals;
- Develop healthcare-associated advisories for hospital distribution; and
- Determine a manner in which reporting of healthcare-associated infections is made available to the public in an understandable fashion.

The HAI Control Advisory Panel was initially convened by the WVHCA in January 2009. The Panel consists of representatives from hospitals, the West Virginia Hospital Association, public health, professionals with expertise in infectious disease control and prevention, biostatistics, microbiology, and health policy. The Panel members are listed on page 2.

The WVHCA has been mandated by the West Virginia Legislature to annually summarize and report progress of the HAI Control Advisory Panel and the results of required reporting to the Legislative Oversight Committee on Health and Human Resources Accountability.

For the purposes of this report, a hospital has been defined in West Virginia §16-29B-3 as “any facility subject to licensure as such under the provisions of article five-b of this chapter, and any acute care facility operated by the state government which is primarily engaged in providing to inpatients, by or under the supervision of physicians, diagnostic and therapeutic services for medical diagnosis, treatment and care of injured, disabled or sick persons, and does not include state mental health facilities or state long-term care facilities." Although the terms hospital and facility have differing definitions, in this report the use of facility and hospital is used interchangeably to refer to a hospital as defined previously. In 2013, fifty-nine (59) West Virginia hospitals fell under that definition and are represented in this report; thirty-one (31) general acute care hospitals, nineteen (19) critical access hospitals, two (2) long term acute care hospitals, two (2) psychiatric hospitals, and five (5) rehabilitation hospitals.

**HAI Surveillance and Reporting Requirements**

Annually, the HAI Control Advisory Panel reviews and updates the hospital HAI public reporting requirements. When choosing the measures required for reporting, the Panel considers the impact of HAIs on patient outcomes and ability for hospitals to collect and report the data. Once reporting guidance is developed, it is distributed to infection control contacts at each hospital.

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8 West Virginia Legislature, West Virginia Code §16-29B-3. Website: [http://www.legis.state.wv.us/legisdocs/code/16/WVC%2016%2029B-3%2020%203%20.htm](http://www.legis.state.wv.us/legisdocs/code/16/WVC%2016%2029B-3%2020%203%20.htm), November 2014.
As a requirement of WV regulation §16-5B-17, hospitals must submit data to the CDC’s National Healthcare Safety Network (NHSN), which was developed as a voluntary surveillance system for hospitals to identify and monitor HAIs, but has evolved as the tool for mandatory HAI reporting by many states.

West Virginia HAI reporting requirements began in July 2009. In January 2011, the Centers for Medicare and Medicaid Services (CMS) implemented HAI reporting requirements for hospitals participating in the Hospital Inpatient Quality Reporting Program. To reduce the reporting burden on hospitals, the Panel decided to adopt CMS requirements as West Virginia’s reporting requirements. In addition, the HAI Control Advisory Panel recommended that Critical Access Hospitals (CAHs) also report State specific HAI since the Hospital Inpatient Quality Reporting Program is voluntary and not required for CAHs by CMS. Healthcare Personnel Influenza vaccination data was also required of non-state run psychiatric facilities. These additional requirements were approved by the WVHCA Board in August 2012. Table 1, page 8, summarizes the measures required to be submitted for West Virginia’s HAI Public Reporting Program in 2014.

The WVHCA monitors reporting compliance and provides technical assistance to infection control contacts to ensure timely and accurate data submission. Submitted data are managed and analyzed by the WVHCA and the results are disseminated to the HAI Control Advisory Panel for review and approval prior to release.

This report summarizes data reported on central line associated blood stream infections (CLABSI), catheter associated urinary tract infections (CAUTI), surgical site infections (SSI) for colon surgeries and abdominal hysterectomies, Methicillin-Resistant *Staphylococcus aureus* (MRSA) bacteremia, *C. difficile* infections, as well as healthcare personnel seasonal influenza vaccinations for the 2013-2014 reporting period. Due to the data collection and processing schedule, this report does not include any healthcare-associated infection data submitted in 2014. The 2014 data will be summarized in future reports.

**Report Limitations**

It is important to note that there are limitations to the data presented. The 2013 data in this report is pulled directly from NHSN and input by the individual facility following the NHSN protocol and procedures, now outlined in the West Virginia Healthcare-Association Infection 2014 Reporting Guide (available on the WVHCA website), as well as directly from the CDC’s NHSN website. The data was not validated, but was analyzed by the WVHCA for completeness.

There is also great variability in the internal surveillance methods used by facilities for HAI detection and these methods are not standardized across facilities. Finally, the actual case definition for these HAI events changes on an almost annual basis, so a comparison of different years of data should be interpreted with these changes in mind. The 2015 reporting changes for NHSN will be outlined in the “Advisory Panel Accomplishments and Future Directions” section of this report.
<table>
<thead>
<tr>
<th>Reporting Requirement</th>
<th>Facility Type</th>
<th>HAI Event</th>
<th>Reporting Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CMS Requirement</strong></td>
<td>General Acute Care Hospitals Only (Non-Critical Access)</td>
<td>CLABSI</td>
<td>Adult, Pediatric/Neonatal ICUs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CAUTI</td>
<td>Adult and Pediatric ICUs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSI: COLO</td>
<td>Inpatient COLO Procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSI: HYST</td>
<td>Inpatient HYST Procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MRSA Bacteremia LabID Event</td>
<td>Facility Wide Inpatient</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>C. difficile</em> LabID Event</td>
<td>Facility Wide Inpatient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Healthcare Personnel Influenza Vaccination</td>
<td>All Inpatient Healthcare Personnel</td>
</tr>
<tr>
<td></td>
<td>Long-Term Acute Care Hospitals</td>
<td>CLABSI</td>
<td>Adult &amp; Pediatric LTAC ICUs &amp; Wards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CAUTI</td>
<td>Adult &amp; Pediatric LTAC ICUs &amp; Wards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Healthcare Personnel Influenza Vaccination</td>
<td>All Inpatient Healthcare Personnel</td>
</tr>
<tr>
<td></td>
<td>Inpatient Rehabilitation Facility</td>
<td>CAUTI</td>
<td>Adult and Pediatric Wards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Healthcare Personnel Influenza Vaccination</td>
<td>All Inpatient Healthcare Personnel</td>
</tr>
<tr>
<td><strong>State Requirement</strong></td>
<td>Critical Access Hospitals</td>
<td>CAUTI</td>
<td>Medical, Surgical, Medical/Surgical, ICU</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Healthcare Personnel Influenza Vaccination</td>
<td>All Inpatient Healthcare Personnel</td>
</tr>
<tr>
<td></td>
<td>Psychiatric Hospitals (Excluding State-Run Facilities)</td>
<td>Healthcare Personnel Influenza Vaccination</td>
<td>All Inpatient Healthcare Personnel</td>
</tr>
</tbody>
</table>
How to Read the HAI Report Graphs

The outcome of each hospital is depicted and coded based on performance. Those hospitals that exceeded the national baseline (i.e. performed better than expected) are noted with a green checkmark. Those hospitals that met expectations are noted with the yellow “equal” sign, and those that performed worse than expected are noted with a red “yield” sign. Some hospitals do not have enough data available to calculate standardized infection ratio (SIR) accurately and are noted with the “N/R” symbol and the reporting measure is indicated as “Too Small to Calculate”.

I. Central Line Associated Blood Stream Infections (CLABSI)

A central line, also known as a central catheter, is a tube that is inserted into a large vein, usually in the neck, chest, arm, or groin and is commonly used to administer fluids and medications as well as draw blood. Depending on its use in the patient, it may be left in place for days to weeks in order to help facilitate treatment. Central line-associated blood stream infections occur when microorganisms, like bacteria, enter into the blood stream via the tube.

In a multistate survey of HAIs, the CDC estimates that there were approximately 15,600 CLABIs in the US for non-neonatal intensive care units in 2011, which can lead to serious complications including an increased number of inpatient stays, increased costs and increased risk of death. The aggregate attributable patient hospital cost of CLASBI is estimated to be between $7,000 and $29,000 per patient. CLABSI can often be prevented by adherence to evidence-based guidelines for the insertion, use, and maintenance of central lines.

Since January 2011, West Virginia General Acute Care Hospitals have been required to report data on CLABSI that occur among patients in all ICUs. Beginning in October 2012, Long Term Acute Care Hospitals have also been required to report facility data on CLABSI.

Key Findings for CLABSI: General Acute Care Hospitals (Figure 1)

- In 2013, 71 CLABSI were reported in all ICUs in West Virginia General Acute Care Hospitals.
- Significantly fewer CLABSI occurred in these units in West Virginia General Acute Care Hospitals than were expected based on national baseline set by NHSN. The West Virginia SIR* was 0.40, indicating that 60% fewer CLABSI events occurred than the NHSN baseline expected.
- Of those facilities that had a sufficient number of central line days to calculate a reliable SIR, all West Virginia General Acute Care Hospitals met or exceeded national standards of CLABSI events by having as many or fewer events than expected.
- West Virginia’s 2013 SIR of 0.40 falls below the 2013 national SIR target of 0.50.9

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* See Technical Notes Section on page 38 for detailed explanation of Standard Infection Ratio (SIR)
# Figure 1: 2013 CLABSI Data, General Acute Care Hospitals

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Number of Infections</th>
<th>Number of Predicted Infections</th>
<th>Number of Central Line Days</th>
<th>Standardized Infection Ratio (SIR)</th>
<th>95% Confidence Interval for SIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabell Huntington Hospital</td>
<td>14</td>
<td>24.94</td>
<td>8888</td>
<td>0.56</td>
<td>0.32, 0.92</td>
</tr>
<tr>
<td>Charleston Area Medical Center (CAMC)</td>
<td>24</td>
<td>60.54</td>
<td>25457</td>
<td>0.40</td>
<td>0.26, 0.58</td>
</tr>
<tr>
<td>St. Mary's Medical Center</td>
<td>6</td>
<td>17.79</td>
<td>6697</td>
<td>0.34</td>
<td>0.14, 0.70</td>
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<tr>
<td>West Virginia University Hospitals (WVUH)</td>
<td>5</td>
<td>28.91</td>
<td>11622</td>
<td>0.17</td>
<td>0.06, 0.38</td>
</tr>
<tr>
<td>Raleigh General Hospital</td>
<td>1</td>
<td>6.57</td>
<td>3137</td>
<td>0.15</td>
<td>0.01, 0.75</td>
</tr>
<tr>
<td>Monongalia General Hospital</td>
<td>4</td>
<td>3.42</td>
<td>2322</td>
<td>0.17</td>
<td>0.37, 2.82</td>
</tr>
<tr>
<td>Ohio Valley Medical Center</td>
<td>3</td>
<td>2.72</td>
<td>1294</td>
<td>1.10</td>
<td>0.28, 3.00</td>
</tr>
<tr>
<td>Saint Francis Hospital</td>
<td>1</td>
<td>1.06</td>
<td>707</td>
<td>0.94</td>
<td>0.05, 4.65</td>
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<tr>
<td>Camden Clark Memorial Hospital</td>
<td>2</td>
<td>2.42</td>
<td>1614</td>
<td>0.83</td>
<td>0.14, 2.73</td>
</tr>
<tr>
<td>United Hospital Center</td>
<td>3</td>
<td>3.96</td>
<td>2643</td>
<td>0.76</td>
<td>0.19, 2.06</td>
</tr>
<tr>
<td>Beckley Appalachian Regional Hospital</td>
<td>1</td>
<td>1.55</td>
<td>1033</td>
<td>0.65</td>
<td>0.03, 3.18</td>
</tr>
<tr>
<td>Thomas Memorial Hospital</td>
<td>2</td>
<td>3.36</td>
<td>2253</td>
<td>0.60</td>
<td>0.10, 1.97</td>
</tr>
<tr>
<td>Logan Regional Medical Center</td>
<td>1</td>
<td>1.92</td>
<td>1281</td>
<td>0.52</td>
<td>0.03, 2.57</td>
</tr>
<tr>
<td>Wheeling Hospital</td>
<td>1</td>
<td>4.41</td>
<td>2937</td>
<td>0.23</td>
<td>0.01, 1.12</td>
</tr>
<tr>
<td>Bluefield Regional Medical Center</td>
<td>0</td>
<td>2.58</td>
<td>1229</td>
<td>0</td>
<td>0, 1.16</td>
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<tr>
<td>CCMC- St. Joseph's Campus</td>
<td>0</td>
<td>1.60</td>
<td>1131</td>
<td>0</td>
<td>0, 1.88</td>
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<tr>
<td>CAMC Teays Valley Hospital</td>
<td>0</td>
<td>1.29</td>
<td>863</td>
<td>0</td>
<td>0, 2.31</td>
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<tr>
<td>City Hospital-WVUH-E</td>
<td>0</td>
<td>2.53</td>
<td>1207</td>
<td>0</td>
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<tr>
<td>Princeton Community Hospital</td>
<td>0</td>
<td>1.34</td>
<td>789</td>
<td>0</td>
<td>0, 2.24</td>
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<tr>
<td>Weirton Medical Center</td>
<td>0</td>
<td>1.45</td>
<td>965</td>
<td>0</td>
<td>0, 2.07</td>
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<tr>
<td>Davis Memorial Hospital</td>
<td>N/R</td>
<td>0.47</td>
<td>316</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Fairmont General Hospital, Inc.</td>
<td>N/R</td>
<td>0.66</td>
<td>437</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Greenbrier Valley Medical Center</td>
<td>N/R</td>
<td>0.94</td>
<td>629</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Pleasant Valley Hospital</td>
<td>N/R</td>
<td>0.33</td>
<td>221</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Reynolds Memorial Hospital</td>
<td>N/R</td>
<td>1.38</td>
<td>255</td>
<td>Too Small to Calculate</td>
<td></td>
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<tr>
<td>St. Joseph's Hospital of Buckhannon</td>
<td>N/R</td>
<td>0.21</td>
<td>137</td>
<td>Too Small to Calculate</td>
<td></td>
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<tr>
<td>Stonewall Jackson Memorial Hospital</td>
<td>N/R</td>
<td>2.33</td>
<td>218</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Summersville Regional Medical Center</td>
<td>N/R</td>
<td>0.24</td>
<td>161</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Welch Community Hospital</td>
<td>N/R</td>
<td>0.27</td>
<td>177</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Wetzel County Hospital</td>
<td>N/R</td>
<td>0.02</td>
<td>12</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Williamson Memorial Hospital</td>
<td>N/R</td>
<td>0.23</td>
<td>119</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td><strong>West Virginia Total</strong></td>
<td><strong>71</strong></td>
<td><strong>178.86</strong></td>
<td><strong>81028</strong></td>
<td><strong>0.40</strong></td>
<td><strong>0.31, 0.50</strong></td>
</tr>
</tbody>
</table>

**Legend:**

- Green checkmark: The number of infections was **significantly lower (better)** than predicted.
- Yellow: The number of infections was **similar (not significantly different)** than predicted.
- Red triangle: The number of infections was **significantly higher (worse)** than predicted.
- Too Small to Calculate: General Acute Care ICU patients had too few central line days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- Not reportable (N/R): The expected number of infections was below 1.
Key Findings for CLABSI: Long Term Acute Care Facilities (Figure 2)

- In 2013, the CLABSI rate for Long Term Acute Care Facilities in West Virginia was 0.38 infections per 1,000 central line days.
- The 2013 rate of CLABSI for Long Term Acute Care Facilities is not significantly different than the national rate from NHSN.
- All West Virginia long term acute care facilities met or exceeded national standards of CLABSI events, by having as many or fewer events than expected.

As there was no established baseline for Long Term Acute Care Facilities CLABSI in 2009 when NHSN HAI baselines were created, the measure of CLABSI rate is instead compared to a NHSN pooled mean rate calculated every year based on the previous year’s data.10*

**Figure 2: 2013 CLABSI Data, Long Term Acute Care Facilities**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Performance Compared to the National Mean Rate</th>
<th>Number of Infections</th>
<th>Number of Central Line Days</th>
<th>Rate of Central Line Associated Bloodstream Infections*</th>
<th>NHSN Pooled Mean Rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornerstone Hospital of Huntington</td>
<td>✅</td>
<td>1</td>
<td>6637</td>
<td>0.15</td>
<td>1.00</td>
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<tr>
<td>Select Specialty Hospital, Charleston</td>
<td></td>
<td>4</td>
<td>6662</td>
<td>0.60</td>
<td>1.00</td>
</tr>
<tr>
<td>West Virginia Total</td>
<td></td>
<td>5</td>
<td>13299</td>
<td>0.38</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Rate per 1,000 Central Line days

**Legend:**
- ✅: The rate of infections was **significantly lower (better)** than the national NHSN pooled mean for 2012
- 🟠: The rate of infections was **similar (not significantly different)** than the national NHSN pooled mean for 2012
- ✗: The rate of infections was **significantly higher (worse)** than the national NHSN pooled mean for 2012
- Not reportable (N/R): Long Term Acute Care patients had too few central line days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- Too Small to Calculate: The expected number of infections was below 1


* See Technical Notes Section on page 38 for detailed explanation of rate and pooled mean rate.
II. Catheter Associated Urinary Tract Infection (CAUTI)

Urinary tract infections are infections of any part of the urinary system, which includes the bladder and the kidneys. Catheter associated urinary tract infections (CAUTI) arise in those hospitalized patients who have had a urinary catheter placed, which is a tube that is inserted into the bladder to drain urine into a connected bag. In the same way that central lines can introduce microorganisms, urinary catheters provide an access point for these infections to spread into the body, in this case the urinary tract. CAUTIs are much more common than CLABSI, with the CDC estimating approximately 35,600 CAUTI events in 2011. The aggregate attributable patient hospital cost of CAUTIs is between $800 and $1000 per patient. CAUTIs can also often be prevented using evidence-based guidelines for insertion, use, and maintenance, just as with all other HAIs.

Since January 2012, all general acute care hospitals and critical access hospitals with an ICU were required to report CAUTI for all adult and pediatric ICUs. Those general acute care hospitals and critical access hospitals without an ICU were required to report CAUTI for Inpatient Medical Wards. Because of CMS’ differing reporting cycles, long term acute care hospitals and inpatient rehabilitation facilities began reporting CAUTI in October 2012.

In 2013, Inpatient Medical/Surgical Wards for both general acute care hospitals and critical access hospitals were required to report CAUTI events as well.

Key Findings for CAUTI: General Acute Care Facilities (Figure 3)

- In 2013, there were 135 CAUTIs reported for all West Virginia General Acute Care Hospitals.
- Significantly fewer CAUTIs occurred in West Virginia General Acute Care Hospitals than were expected based on the national baseline set by NHSN. The West Virginia SIR was 0.63, indicating that 37% fewer CAUTIs occurred than were expected.
- Of those facilities that had a sufficient number of urinary catheter days to calculate a reliable SIR, national standards were met or exceeded.
- West Virginia’s 2013 SIR of 0.63 falls below the 2013 national reduction target of 0.75.
### Figure 3: 2013 CAUTI Data for General Acute Care Hospitals

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Number of Infections</th>
<th>Number of Predicted Infections</th>
<th>Number of Urinary Catheter Days</th>
<th>Standardized Infection Ratio (SIR)</th>
<th>95% Confidence Interval for SIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charleston Area Medical Center (CAMEC)</td>
<td>39</td>
<td>66.57</td>
<td>25536</td>
<td>0.59</td>
<td>0.42, 0.79</td>
</tr>
<tr>
<td>Raleigh General Hospital</td>
<td>5</td>
<td>11.85</td>
<td>5142</td>
<td>0.42</td>
<td>0.16, 0.94</td>
</tr>
<tr>
<td>West Virginia University Hospitals (WVU)</td>
<td>6</td>
<td>27.10</td>
<td>11704</td>
<td>0.22</td>
<td>0.10, 0.36</td>
</tr>
<tr>
<td>Bluefield Regional Medical Center</td>
<td>1</td>
<td>5.13</td>
<td>2257</td>
<td>0.13</td>
<td>0.01, 0.35</td>
</tr>
<tr>
<td>City Hospital - WCHIHE</td>
<td>0</td>
<td>5.43</td>
<td>2560</td>
<td>0</td>
<td>0, 0.55</td>
</tr>
<tr>
<td>Logan Regional Medical Center</td>
<td>0</td>
<td>4.21</td>
<td>2591</td>
<td>0</td>
<td>0, 0.71</td>
</tr>
<tr>
<td>Ohio Valley Medical Center</td>
<td>8</td>
<td>4.47</td>
<td>1545</td>
<td>1.79</td>
<td>0.83, 3.40</td>
</tr>
<tr>
<td>Wheeling Hospital</td>
<td>10</td>
<td>5.62</td>
<td>4680</td>
<td>1.78</td>
<td>0.90, 3.17</td>
</tr>
<tr>
<td>CAMC-Teays Valley Hospital</td>
<td>2</td>
<td>1.52</td>
<td>1152</td>
<td>1.32</td>
<td>0.22, 4.37</td>
</tr>
<tr>
<td>Thomas Memorial Hospital</td>
<td>4</td>
<td>3.71</td>
<td>3853</td>
<td>1.08</td>
<td>0.34, 2.60</td>
</tr>
<tr>
<td>CAMC-St. Joseph’s Campus</td>
<td>2</td>
<td>1.90</td>
<td>1179</td>
<td>1.05</td>
<td>0.17, 3.47</td>
</tr>
<tr>
<td>Cabell Huntington Hospital</td>
<td>25</td>
<td>25.53</td>
<td>9893</td>
<td>1.02</td>
<td>0.68, 1.47</td>
</tr>
<tr>
<td>Princeton Community Hospital</td>
<td>4</td>
<td>3.94</td>
<td>2539</td>
<td>1.02</td>
<td>0.32, 2.45</td>
</tr>
<tr>
<td>St. Mary’s Medical Center</td>
<td>19</td>
<td>21.03</td>
<td>8431</td>
<td>0.88</td>
<td>0.55, 1.35</td>
</tr>
<tr>
<td>Camden Clark Memorial Hospital</td>
<td>3</td>
<td>3.82</td>
<td>3182</td>
<td>0.79</td>
<td>0.26, 2.14</td>
</tr>
<tr>
<td>Greenbrier Valley Medical Center</td>
<td>1</td>
<td>2.04</td>
<td>1573</td>
<td>0.49</td>
<td>0.02, 2.41</td>
</tr>
<tr>
<td>Monongalia General Hospital</td>
<td>2</td>
<td>4.65</td>
<td>3528</td>
<td>0.43</td>
<td>0.07, 1.42</td>
</tr>
<tr>
<td>United Hospitals Center</td>
<td>1</td>
<td>3.69</td>
<td>3679</td>
<td>0.27</td>
<td>0.01, 1.33</td>
</tr>
<tr>
<td>Fairmont General Hospital, Inc.</td>
<td>0</td>
<td>1.05</td>
<td>805</td>
<td>0</td>
<td>0, 2.65</td>
</tr>
<tr>
<td>Williamson Memorial Hospital</td>
<td>0</td>
<td>1.06</td>
<td>530</td>
<td>0</td>
<td>0, 2.83</td>
</tr>
<tr>
<td>Reynolds Memorial Hospital</td>
<td>0</td>
<td>1.13</td>
<td>868</td>
<td>0</td>
<td>0, 2.66</td>
</tr>
<tr>
<td>Davis Memorial Hospital</td>
<td>0</td>
<td>1.05</td>
<td>805</td>
<td>0</td>
<td>0, 2.86</td>
</tr>
<tr>
<td>Wetton Medical Center</td>
<td>0</td>
<td>1.54</td>
<td>1185</td>
<td>0</td>
<td>0, 1.95</td>
</tr>
<tr>
<td>Saint Francis Hospital</td>
<td>0</td>
<td>1.77</td>
<td>1362</td>
<td>0</td>
<td>0, 1.70</td>
</tr>
<tr>
<td>Beckley Appalachian Regional Hospital</td>
<td>0</td>
<td>2.03</td>
<td>1559</td>
<td>0</td>
<td>0, 1.48</td>
</tr>
<tr>
<td>Pleasant Valley Hospital</td>
<td>N/R</td>
<td>0.64</td>
<td>495</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Summersville Regional Medical Center</td>
<td>N/R</td>
<td>0.57</td>
<td>485</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Stonewall Jackson Memorial Hospital</td>
<td>N/R</td>
<td>0.75</td>
<td>578</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Wetzel County Hospital</td>
<td>N/R</td>
<td>0.13</td>
<td>65</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>Welch Community Hospital</td>
<td>N/R</td>
<td>0.56</td>
<td>433</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
<tr>
<td>St. Joseph’s Hospital of Buckhannon</td>
<td>N/R</td>
<td>0.34</td>
<td>262</td>
<td>Too Small to Calculate</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
- **✓** The number of infections was significantly lower (better) than predicted
- **◆** The number of infections was similar (not significantly different) than predicted
- **▼** The number of infections was significantly higher (worse) than predicted

**Not reportable (N/R):** General Acute Care ICU patients had too few urinary catheter days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.

**Too Small to Calculate:** The expected number of infections was below 1.
Key Findings for CAUTI: Long Term Acute Care Hospitals (Figure 4)

- In 2013, the CAUTI rate for Long Term Acute Care Facilities in West Virginia was 1.90 infections per 1,000 urinary catheter days.
- The 2013 rate of CAUTI for Long Term Acute Care Facilities is not significantly different than the national rate.
- All West Virginia long term acute care facilities met national standards of CAUTI events by having a similar number of CAUTI events compared to what was expected.

As there was no established baseline for Long Term Acute Care Facilities CAUTI in 2009 when NHSN HAI baselines were created, the measure of CAUTI rate is instead compared to a NHSN pooled mean rate calculated every year based on the previous year’s data.10

**Figure 4: 2013 CAUTI Data for Long Term Acute Care Hospitals**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Number of Infections</th>
<th>Number of Urinary Catheter Days</th>
<th>Rate of Urinary Catheter Infections</th>
<th>NHSN Pooled Mean Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Specialty Hospital, Charleston</td>
<td>12</td>
<td>6152</td>
<td>1.95</td>
<td>2.00</td>
</tr>
<tr>
<td>Cornerstone Hospital of Huntington</td>
<td>12</td>
<td>6507</td>
<td>1.84</td>
<td>2.00</td>
</tr>
<tr>
<td>West Virginia Total</td>
<td>24</td>
<td>12659</td>
<td>1.90</td>
<td>2.00</td>
</tr>
</tbody>
</table>

* Rate per 1,000 Catheter days

<table>
<thead>
<tr>
<th>Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Green Check] (✔️) The rate of infections was significantly lower (better) than the national NHSN pooled mean for 2012</td>
</tr>
<tr>
<td>![Yellow Exclamation] (⚠️) The rate of infections was similar (not significantly different) than the national NHSN pooled mean for 2012</td>
</tr>
<tr>
<td>![Red Triangle] (⚠️) The rate of infections was significantly higher (worse) than the national NHSN pooled mean for 2012</td>
</tr>
<tr>
<td>![Not Reportable] (N/R) Long Term Acute Care patients had too few urinary catheter days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.</td>
</tr>
<tr>
<td>![Too Small to Calculate] The expected number of infections was below 1</td>
</tr>
</tbody>
</table>

Key Findings for CAUTI: Critical Access Hospitals (Figure 5)

- In 2013, there were 3 CAUTIs reported for all West Virginia Critical Access Hospitals.
- The number of CAUTIs that occurred in West Virginia Critical Access Hospitals in 2013 were similar to those expected based on the national baseline.
- The West Virginia SIR was 0.54, indicating that 46% fewer CAUTIs occurred than the NHSN baseline expected.
- West Virginia’s 2013 SIR of 0.54 falls below the 2013 national target of 0.75.9
**Figure 5: 2013 CAUTI Data for Critical Access Hospitals**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Hospital Performance Compared to NHSN National Baseline</th>
<th>Number of Infections</th>
<th>Number of Urinary Catheter Days</th>
<th>Number of Predicted Infections</th>
<th>Standardized Infection Ratio (SIR)</th>
<th>95% Confidence Interval for SIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summers County ARH</td>
<td></td>
<td>0</td>
<td>654</td>
<td>1.24</td>
<td>0</td>
<td>0, 2.41</td>
</tr>
<tr>
<td>Braxton County Memorial Hospital</td>
<td>N/R</td>
<td>0</td>
<td>266</td>
<td>0.43</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Preston Memorial Hospital</td>
<td>N/R</td>
<td>0</td>
<td>45</td>
<td>0.06</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Roane General Hospital</td>
<td>N/R</td>
<td>1</td>
<td>47</td>
<td>0.08</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Minnie Hamilton Health System</td>
<td>N/R</td>
<td>0</td>
<td>214</td>
<td>0.34</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Potomac Valley Hospital</td>
<td>N/R</td>
<td>0</td>
<td>125</td>
<td>0.25</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Jackson General Hospital</td>
<td>N/R</td>
<td>0</td>
<td>190</td>
<td>0.25</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Plateau Medical Center</td>
<td>N/R</td>
<td>0</td>
<td>283</td>
<td>0.37</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Jefferson Memorial Hospital</td>
<td>N/R</td>
<td>1</td>
<td>197</td>
<td>0.26</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Grant Memorial Hospital</td>
<td>N/R</td>
<td>0</td>
<td>290</td>
<td>0.38</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Hampshire Memorial Hospital</td>
<td>N/R</td>
<td>1</td>
<td>328</td>
<td>0.62</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Pocahontas Memorial Hospital</td>
<td>N/R</td>
<td>0</td>
<td>126</td>
<td>0.20</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Grafton City Hospital</td>
<td>N/R</td>
<td>0</td>
<td>62</td>
<td>0.11</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Boone Memorial Hospital</td>
<td>N/R</td>
<td>0</td>
<td>211</td>
<td>0.34</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Broadus Hospital</td>
<td>N/R</td>
<td>0</td>
<td>251</td>
<td>0.48</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Sistersville General Hospital</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>Montgomery General Hospital</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>War Memorial Hospital</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>Webster County Memorial Hospital</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td><strong>West Virginia Total</strong></td>
<td></td>
<td><strong>3</strong></td>
<td><strong>3385</strong></td>
<td><strong>5.52</strong></td>
<td><strong>0.54</strong></td>
<td><strong>0.14, 1.48</strong></td>
</tr>
</tbody>
</table>

**Legend:**
- ✓: The number of infections was significantly lower (better) than predicted
- ☐️: The number of infections was similar (not significantly different) than predicted
- 🔄: The number of infections was significantly higher (worse) than predicted
- ~: Not reportable (N/R)
- Too Small To Calculate: Critical Access patients had too few urinary catheter days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.

*Note that Sistersville General Hospital, Montgomery General Hospital, War Memorial Hospital, and Webster County Memorial Hospital data is not yet available because either the facility has not granted the WVHCA permission rights to view, the facility has not submitted the data, or the data cannot be viewed by the WVHCA at this time.*
Key Findings for CAUTI: Inpatient Rehabilitation Hospitals, Freestanding (Figure 6)

- In 2013, the CAUTI rate for Freestanding Inpatient Rehabilitation Hospitals in West Virginia was 0.60 infections per 1,000 urinary catheter days.
- The 2013 rate of CAUTI for West Virginia Freestanding Inpatient Rehabilitation Hospitals is significantly lower than the national rate.
- All West Virginia Freestanding Inpatient Rehabilitation Hospitals met or exceeded national standards of CAUTI events, by having as many or fewer events than expected.

As there was no established baseline for Freestanding Inpatient Rehabilitation Hospitals CAUTI in 2009 when NHSN HAI baselines were created, the measure of CAUTI rate is instead compared to a NHSN pooled mean rate calculated every year based on the previous year’s data.  

**Figure 6: 2013 CAUTI Data for Inpatient Rehabilitation Hospitals, Freestanding**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Number of Infections</th>
<th>Number of Urinary Catheter Days</th>
<th>Rate of Urinary Catheter Infections*</th>
<th>NHSN Pooled Mean Rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>HealthSouth Mountain View Regional Rehabilitation Hospital</td>
<td>1</td>
<td>2340</td>
<td>0.43</td>
<td>2.9</td>
</tr>
<tr>
<td>HealthSouth Rehabilitation Hospital of Huntington</td>
<td>0</td>
<td>691</td>
<td>0</td>
<td>2.9</td>
</tr>
<tr>
<td>HealthSouth Western Hills Regional Rehabilitation Hospital</td>
<td>0</td>
<td>938</td>
<td>0</td>
<td>2.9</td>
</tr>
<tr>
<td>HealthSouth Southern Hills Regional Rehabilitation Hospital</td>
<td>0</td>
<td>749</td>
<td>0</td>
<td>2.9</td>
</tr>
<tr>
<td>West Virginia Total, Freestanding Adult Rehab Facilities</td>
<td>3</td>
<td>4964</td>
<td><strong>0.60</strong></td>
<td><strong>2.9</strong></td>
</tr>
</tbody>
</table>

*Rate per 1,000 Catheter days

**Legend:**
- The rate of infections was **significantly lower (better)** than the national NHSN pooled mean for 2012
- The rate of infections was **similar (not significantly different)** than the national NHSN pooled mean for 2012
- The rate of infections was **significantly higher (worse)** than the national NHSN pooled mean for 2012
- **Not reportable (N/R)**: Rehabilitation patients had too few urinary catheter days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- **Too Small to Calculate**: The expected number of infections was below 1
Key Findings for CAUTI: Inpatient Rehabilitation Hospitals, Within Hospital (Figure 7)

- In 2013, the CAUTI rate for Inpatient Rehabilitation Hospitals (Units within Hospitals) in West Virginia was 0 infections per 1,000 urinary catheter days.
- The 2013 rate of CAUTI for West Virginia Inpatient Rehabilitation Hospitals (Units within Hospitals) is significantly lower than the national rate from NHSN.
- All West Virginia Inpatient Rehabilitation Hospitals, Within a Hospital, met or exceeded national standards.

The designation of “Within a Hospital” refers to those hospitals that have an inpatient rehabilitation unit within the hospital, and not a freestanding inpatient rehabilitation hospital. As there was no established baseline for Inpatient Rehabilitation Hospitals for CAUTI in 2009 when NHSN HAI baselines were created, the measure of CAUTI rate is instead compared to a NHSN pooled mean rate calculated every year based on the previous year’s data.10

### Figure 7: 2013 CAUTI Data for Inpatient Rehabilitation Hospitals, Within Hospital

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Number of Infections</th>
<th>Number of Urinary Catheter Days</th>
<th>Rate of Urinary Catheter Infections*</th>
<th>NHSN Pooled Mean Rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peterson Rehabilitation Hospital</td>
<td>0</td>
<td>405</td>
<td>0</td>
<td>3.2</td>
</tr>
<tr>
<td>Charleston Area Medical Center (CAMC)</td>
<td>0</td>
<td>353</td>
<td>0</td>
<td>3.2</td>
</tr>
<tr>
<td>Logan Regional Medical Center</td>
<td>0</td>
<td>141</td>
<td>0</td>
<td>3.2</td>
</tr>
<tr>
<td>West Virginia Total, Rehabilitation Unit Within Hospital</td>
<td>0</td>
<td>899</td>
<td>0</td>
<td>3.2</td>
</tr>
</tbody>
</table>

* Rate per 1,000 Catheter days

**Legend:**
- The expected number of infections was below 1
- Rehabilitation patients had too few urinary catheter days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- The rate of infections was significantly lower (better) than the national NHSN pooled mean for 2012
- The rate of infections was similar (not significantly different) than the national NHSN pooled mean for 2012
- The rate of infections was significantly higher (worse) than the national NHSN pooled mean for 2012
- Not reportable (N/R)
III. Surgical Site Infections (SSI)

Surgical site infections are infections that occur at the site where a surgical procedure was performed and may be superficial or involve tissue, organs or implanted material. CMS requirements for HAI reporting target two types of surgeries: colon procedures and abdominal hysterectomies. Colon procedures are surgeries that involve the colon, or large intestine, but do not include any procedure involving the rectum. An abdominal hysterectomy is a surgery that removes the uterus by entering and exiting via an abdominal incision. Adherence to proper sterilization procedures throughout the surgical process helps reduce the risk of SSIs.

Since January 2012, General Acute Care Hospitals are required to report SSIs for colon procedures and abdominal hysterectomies. The following data has been broken down by the procedure type.

Key Findings for SSI: General Acute Care Hospitals for Colon Procedures (Figure 8)

- In 2013, there were 65 SSIs for colon procedures reported for all West Virginia General Acute Care Hospitals.
- A similar (not significantly different) number of SSIs for colon procedures occurred in West Virginia General Acute Care Hospitals in 2013 than were expected based on the national baseline.
- The West Virginia SIR was 0.95, indicating that 5% fewer SSIs for colon procedures occurred than were expected.
- Of those facilities that had a sufficient number of colon procedures to calculate a reliable SIR, all but one West Virginia General Acute Care Hospitals met or exceeded national standards.
- West Virginia’s 2013 SIR of 0.95 exceeded the 2013 national target of 0.75.9

**FIGURE 8: 2013 SSI FOR COLON PROCEDURES DATA, GENERAL ACUTE CARE HOSPITALS**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Hospital Performance Compared to NSHN National Baseline</th>
<th>Number of Infections</th>
<th>Number of Predicted Infections</th>
<th>Number of Colon Procedures Performed</th>
<th>Standardized Infection Ratio (SIR)</th>
<th>95% Confidence Interval for SIR</th>
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</tr>
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<td>Davis Memorial Hospital</td>
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<tr>
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<td>17</td>
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</tr>
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<td>Welch Community Hospital</td>
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</tr>
<tr>
<td>Greenbrier Valley Medical Center</td>
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<td>0.74, 1.20</td>
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</tbody>
</table>

**Legend**

- Green triangle The number of infections was significantly lower (better) than predicted.
- Yellow square The number of infections was similar (not significantly different) than predicted.
- Red triangle The number of infections was significantly higher (worse) than predicted.
- Grey box Not reportable (N/R): General Acute Care hospitals had too few inpatient colon procedures to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- Grey block Too small to calculate: The expected number of infections was below 1.
Key Findings for SSI: General Acute Care Hospitals for Abdominal Hysterectomy Procedures (Figure 9)

- In 2013, there were 22 SSIs for abdominal hysterectomy procedures reported for all West Virginia General Acute Care Hospitals.
- A similar (not significantly different) number of SSIs for abdominal hysterectomy procedures occurred in West Virginia General Acute Care Hospitals in 2013 than were expected based on the national baseline.
- The West Virginia SIR was 0.94, indicating that 6% fewer SSIs for abdominal hysterectomy procedures occurred than the NHSN baseline expected.
- Of those facilities that had a sufficient number of abdominal hysterectomy procedures to calculate a reliable SIR, all West Virginia General Acute Care Hospitals met national standards.
- West Virginia’s 2013 SIR of 0.94 exceeded the 2013 national target of 0.75.\textsuperscript{9}
### Figure 9: 2013 SSI for Abdominal Hysterectomy Procedures, General Acute Care Hospitals

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Hospital Performance Compared to NHSN National Baseline</th>
<th>Number of Infections</th>
<th>Number of Predicted Infections</th>
<th>Number of Hysterectomy Procedures Performed</th>
<th>Standardized Infection Ratio (SIR)</th>
<th>95% Confidence Interval for SIR</th>
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<tbody>
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<td>Wheeling Hospital</td>
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<td>162</td>
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<td>0.51, 5.46</td>
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<td>0.79, 3.22</td>
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<tr>
<td>CMC-St. Joseph’s Campus</td>
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<td>0.01</td>
<td>1</td>
<td>Too Small to Calculate</td>
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<td>Stonewall Jackson Memorial Hospital</td>
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<td>0.00</td>
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<td></td>
</tr>
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<td>City Hospital-WVUH-E</td>
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<td>32</td>
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<tr>
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<td>0.05</td>
<td>4</td>
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</tr>
<tr>
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<td>14</td>
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<td>22</td>
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</tr>
<tr>
<td>United Hospital Center</td>
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<td>Too Small to Calculate</td>
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</tr>
<tr>
<td>St. Joseph’s Hospital of Buckhannon</td>
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<td>0.37</td>
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<td>Saint Francis Hospital</td>
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<td>0.01</td>
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<td><strong>2197</strong></td>
<td><strong>0.94</strong></td>
<td><strong>0.60, 1.40</strong></td>
</tr>
</tbody>
</table>

**Legend:**
- ✓: The number of infections was significantly lower (better) than predicted
- ☐: The number of infections was similar (not significantly different) than predicted
- ▼: The number of infections was significantly higher (worse) than predicted
- Not reportable (N/R): General Acute Care hospitals had too few inpatient hysterectomy procedures to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- Too Small to Calculate: The expected number of infections was below 1.
IV. Inpatient Methicillin-Resistant *Staphylococcus aureus* (MRSA) Bacteremia

While *Staphylococcus aureus* is a common bacteria found both in the environment and on humans, it normally does not affect them. MRSA, however, is a variant of the bacteria that is resistant to antibiotics. MRSA is spread via direct contact and can cause serious complications, including wound infections or blood stream infections (bacteremia), which makes hospitals and other healthcare facilities at a high risk of spreading the infection to patients and healthcare workers.  

Beginning January 2013, West Virginia general acute care hospitals were required to report MRSA Bacteremia LabID events for facility-wide inpatient areas. LabID events are those that are positive or meet positive guidelines using either standard susceptibility testing or other Food and Drug Administration (FDA) approved testing.  

**Key Findings for MRSA Bacteremia LabID Events: General Acute Care Hospitals (Figure 10)**

- In 2013, there were 81 MRSA Bacteremia LabID events reported for all West Virginia General Acute Care Hospitals.
- A similar (not significantly different) number of MRSA Bacteremia LabID events occurred in West Virginia General Acute Care Hospitals in 2013 than were expected based on the national baseline.
- The West Virginia SIR was 0.94, indicating that 6% fewer MRSA Bacteremia LabID events occurred than the NHSN baseline expected.
- Of those facilities that had a sufficient number of patient days to calculate a reliable SIR, all but one West Virginia General Acute Care Hospitals met national standards.
- West Virginia’s 2013 SIR of 0.94 exceeded the 2013 national target of 0.75.

---


**Figure 10: 2013 MRSA Bacteremia LabID Events, General Acute Care Hospitals**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Number of MRSA Infections</th>
<th>Number of Predicted MRSA Infections</th>
<th>Number of Patient Days</th>
<th>Standardized Infection Ratio (SIR)</th>
<th>95% Confidence Interval for SIR</th>
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<td>Pleasant Valley Hospital</td>
<td>N/R</td>
<td>0.44</td>
<td>6743</td>
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<tr>
<td>Reynolds Memorial Hospital</td>
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<td>10648</td>
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</tr>
<tr>
<td>Saint Francis Hospital</td>
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<td>0.80</td>
<td>18459</td>
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</tr>
<tr>
<td>Davis Memorial Hospital</td>
<td>N/R</td>
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<td>13005</td>
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<tr>
<td>Summersville Regional Medical Center</td>
<td>N/R</td>
<td>0.43</td>
<td>8352</td>
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</tr>
<tr>
<td>Stonewall Jackson Memorial Hospital</td>
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<td>8497</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Wetzel County Hospital</td>
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<td>0.14</td>
<td>3837</td>
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</tr>
<tr>
<td>Welch Community Hospital</td>
<td>N/R</td>
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<td>1961</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>Greenbrier Valley Medical Center</td>
<td>N/R</td>
<td>0.63</td>
<td>16665</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td>St. Joseph’s Hospital of Buchanan</td>
<td>N/R</td>
<td>0.22</td>
<td>3233</td>
<td>Too Small To Calculate</td>
<td></td>
</tr>
<tr>
<td><strong>West Virginia Total</strong></td>
<td><strong>81</strong></td>
<td><strong>86.60</strong></td>
<td><strong>1244796</strong></td>
<td><strong>0.94</strong></td>
<td><strong>0.75, 1.16</strong></td>
</tr>
</tbody>
</table>

**Legend:**
- Green checkmark: The number of infections was significantly lower (better) than predicted.
- Yellow triangle: The number of infections was significantly higher (worse) than predicted.
- Gray square: The number of infections was similar (not significantly different) than predicted.
- Grey checkmark: General Acute Care Hospital inpatient had too few patient days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- Red cross: Too Small to Calculate. The expected number of infections was below 1.
V. Inpatient *Clostridium difficile* Infection (CDI)

*Clostridium difficile* (CDI) is a bacteria that can cause diarrhea and large intestine inflammation, usually in those patients with a recent history of antibiotic use. CDI is spread through direct contact with contaminated surfaces and can live outside the body in a hardy spore form for a long time.\(^{11}\) Therefore, environmental control in healthcare settings is one of the most critical forms of prevention, along with proper hygiene and adherence to evidence-based practices.\(^{14}\)

Beginning in January 2013, all general acute care hospitals were required to report facility wide, inpatient CDI LabID Events. As with MRSA, LabID events are those that are positive or meet positive guidelines using either standard susceptibility testing or other Food and Drug Administration (FDA) approved testing.\(^{13}\)

**Key Findings for CDI LabID Events: General Acute Care Hospitals** *(Figure 11)*

- In 2013, there were 877 CDI LabID events reported for all West Virginia General Acute Care Hospitals.
- A similar (not significantly different) number of CDI LabID events occurred in West Virginia General Acute Care Hospitals in 2013 than were expected based on the national baseline.
- The West Virginia SIR was 1.02, indicating that 2% more CDI LabID events occurred than the NHSN baseline expected.
- Of those facilities that had a sufficient number of patient days to calculate a reliable SIR, all but five West Virginia General Acute Care Hospitals met or exceeded national standards.
- West Virginia’s 2013 SIR of 1.02 exceeded the 2013 national target of 0.75.\(^9\)

---

# Figure 11: 2013 CDI LabID Events, General Acute Care Hospitals

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Number of C. difficile Infections</th>
<th>Number of Predicted C. difficile Infections</th>
<th>Number of Patient Days</th>
<th>Standardized Infection Ratio (SIR)</th>
<th>95% Confidence Interval for SIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabell Huntington Hospital</td>
<td>46</td>
<td>67.28</td>
<td>77412</td>
<td>0.68</td>
<td>0.51, 0.90</td>
</tr>
<tr>
<td>Ohio Valley Medical Center</td>
<td>14</td>
<td>29.51</td>
<td>37827</td>
<td>0.47</td>
<td>0.27, 0.78</td>
</tr>
<tr>
<td>Greenbrier Valley Medical Center</td>
<td>4</td>
<td>9.80</td>
<td>15216</td>
<td>0.41</td>
<td>0.13, 0.99</td>
</tr>
<tr>
<td>CAMC-St. Joseph’s Campus</td>
<td>3</td>
<td>8.48</td>
<td>18586</td>
<td>0.36</td>
<td>0.09, 0.97</td>
</tr>
<tr>
<td>City Hospital-WVUH-E</td>
<td>12</td>
<td>35.15</td>
<td>40824</td>
<td>0.34</td>
<td>0.19, 0.58</td>
</tr>
<tr>
<td>Princeton Community Hospital</td>
<td>8</td>
<td>37.21</td>
<td>48889</td>
<td>0.22</td>
<td>0.10, 0.41</td>
</tr>
<tr>
<td>St. Joseph’s Hospital of Buckhannon</td>
<td>0</td>
<td>3.02</td>
<td>5233</td>
<td>0</td>
<td>0, 0.99</td>
</tr>
<tr>
<td>Fairmont General Hospital, Inc.</td>
<td>22</td>
<td>16.98</td>
<td>26568</td>
<td>1.30</td>
<td>0.83, 2.13</td>
</tr>
<tr>
<td>Wheeling Hospital</td>
<td>44</td>
<td>38.20</td>
<td>42227</td>
<td>1.15</td>
<td>0.85, 1.53</td>
</tr>
<tr>
<td>Monongalia General Hospital</td>
<td>30</td>
<td>26.47</td>
<td>33369</td>
<td>1.13</td>
<td>0.78, 1.60</td>
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<tr>
<td>Logan Regional Medical Center</td>
<td>15</td>
<td>13.38</td>
<td>25165</td>
<td>1.12</td>
<td>0.65, 1.81</td>
</tr>
<tr>
<td>Weirton Medical Center</td>
<td>16</td>
<td>14.97</td>
<td>29015</td>
<td>1.07</td>
<td>0.63, 1.70</td>
</tr>
<tr>
<td>Saint Francis Hospital</td>
<td>11</td>
<td>10.36</td>
<td>18495</td>
<td>1.06</td>
<td>0.56, 1.85</td>
</tr>
<tr>
<td>Thomas Memorial Hospital</td>
<td>24</td>
<td>23.02</td>
<td>44782</td>
<td>1.04</td>
<td>0.68, 1.53</td>
</tr>
<tr>
<td>Bluefield Regional Medical Center</td>
<td>9</td>
<td>8.99</td>
<td>17914</td>
<td>1.00</td>
<td>0.49, 1.84</td>
</tr>
<tr>
<td>Camden Clark Memorial Hospital</td>
<td>15</td>
<td>13.38</td>
<td>25165</td>
<td>1.12</td>
<td>0.65, 1.81</td>
</tr>
<tr>
<td>Williamson Memorial Hospital</td>
<td>16</td>
<td>14.97</td>
<td>29015</td>
<td>1.07</td>
<td>0.63, 1.70</td>
</tr>
<tr>
<td>Wetzel County Hospital</td>
<td>2</td>
<td>2.23</td>
<td>3807</td>
<td>0.90</td>
<td>0.15, 2.96</td>
</tr>
<tr>
<td>Beckley Appalachian Regional Hospital</td>
<td>11</td>
<td>16.93</td>
<td>26899</td>
<td>0.65</td>
<td>0.34, 1.13</td>
</tr>
<tr>
<td>United Hospital Center</td>
<td>39</td>
<td>50.52</td>
<td>57071</td>
<td>0.77</td>
<td>0.56, 1.05</td>
</tr>
<tr>
<td>CAMC Teays Valley Hospital</td>
<td>4</td>
<td>5.36</td>
<td>8255</td>
<td>0.75</td>
<td>0.24, 1.80</td>
</tr>
<tr>
<td>Reynolds Memorial Hospital</td>
<td>4</td>
<td>6.81</td>
<td>10620</td>
<td>0.59</td>
<td>0.19, 1.42</td>
</tr>
<tr>
<td>Davis Memorial Hospital</td>
<td>3</td>
<td>7.31</td>
<td>15065</td>
<td>0.41</td>
<td>0.10, 1.12</td>
</tr>
<tr>
<td>Pleasant Valley Hospital</td>
<td>1</td>
<td>3.43</td>
<td>6492</td>
<td>0.29</td>
<td>0.02, 1.44</td>
</tr>
<tr>
<td>Stonewall Jackson Memorial Hospital</td>
<td>1</td>
<td>3.82</td>
<td>8497</td>
<td>0.26</td>
<td>0.01, 1.29</td>
</tr>
<tr>
<td>Welch Community Hospital</td>
<td>0</td>
<td>2.77</td>
<td>3763</td>
<td>0</td>
<td>0, 1.08</td>
</tr>
<tr>
<td>Summersville Regional Medical Center</td>
<td>16</td>
<td>3.91</td>
<td>7287</td>
<td>3.58</td>
<td>2.04, 5.87</td>
</tr>
<tr>
<td>Raleigh General Hospital</td>
<td>58</td>
<td>38.69</td>
<td>52752</td>
<td>1.50</td>
<td>1.15, 1.92</td>
</tr>
<tr>
<td>St. Mary’s Medical Center</td>
<td>107</td>
<td>76.54</td>
<td>95547</td>
<td>1.40</td>
<td>1.15, 1.68</td>
</tr>
<tr>
<td>West Virginia University Hospitals (WVUH)</td>
<td>155</td>
<td>119.21</td>
<td>168464</td>
<td>1.33</td>
<td>1.14, 1.55</td>
</tr>
<tr>
<td>Charleston Area Medical Center (CAMC)</td>
<td>177</td>
<td>138.41</td>
<td>180244</td>
<td>1.28</td>
<td>1.10, 1.48</td>
</tr>
<tr>
<td><strong>West Virginia Totals</strong></td>
<td><strong>877</strong></td>
<td><strong>859.40</strong></td>
<td><strong>1178780</strong></td>
<td><strong>1.02</strong></td>
<td><strong>0.95, 1.09</strong></td>
</tr>
</tbody>
</table>

**Legend**

- ![Green Circle](Image) The number of infections was significantly lower (better) than predicted
- ![Red Triangle](Image) The number of infections was similar (not significantly different) than predicted
- ![Red Triangle](Image) The number of infections was significantly higher (worse) than predicted
- ![Gray Circle](Image) Not reportable (N/R) General Acute Care Hospital inpatient had too few patient days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- ![Gray Circle](Image) Too Small to Calculate The expected number of infections was below 1
VI. Healthcare Personnel Influenza Vaccinations

Influenza vaccinations are important for healthcare personnel as they not only safeguard the individual, they also help protect patients from becoming infected. The CDC, the Advisory Committee on Immunization Practices (ACIP), and the Healthcare Infection Control Practices Advisory Committee (HICPAC) recommends that all healthcare workers receive a seasonal influenza vaccination.

Hospitals are required to report the number of personnel, including employees, licensed independent practitioners, and student volunteers, who received vaccination during the influenza season (October to March). All 59 West Virginia hospitals (general acute care, critical access, long term acute care, non-state run psychiatric hospitals, and rehabilitation hospitals) that were required to report, did so for the 2013-2014 influenza season.

Beginning January 2012, all non-federal hospitals (excluding state run psychiatric facilities) were required to report personnel vaccination status. Beginning October 2014, all non-federal hospitals (excluding state-run psychiatric facilities) are required to report personnel that work in outpatient departments as well as inpatient departments, who have worked in the healthcare facility for at least one day during the reporting season.

For the 2013-2014 influenza season, the percent of personnel vaccinated was split into two population categories, hospital employees (paid by the facility) and all healthcare workers (which includes employees, licensed independent practitioners, and student volunteers). Now, individual facilities can determine how many non-employee workers in the healthcare facility did not receive a vaccination, potentially putting patients at risk for contracting influenza while receiving care. By separating employees from non-employees working in the facility, hospitals can see their progress from year to year.

A two year, side-by-side comparison was also completed for each hospital, and for each population group, to show changes in vaccination percentages and trends over time for each facility, which is useful to monitor if a facility institutes new policies or guidelines regarding influenza vaccination.

Key Findings for Healthcare Personnel Influenza Vaccinations, by hospital type and healthcare personnel population (Figures 12-21)

- 76.9% of all healthcare workers in all West Virginia hospitals (including employees, licensed independent practitioners, and student volunteers) received a seasonal influenza vaccination during the 2013-2014 influenza season, up from 74.3% from last year.

---

- That percentage is higher than the 2013-2014 national average for influenza vaccination of healthcare workers of 75.2%.\textsuperscript{12}
- The percentage of all healthcare workers in West Virginia (including employees, licensed independent practitioners, and student volunteers) that received a seasonal influenza vaccination ranged from a low of 38% to a high of 100% by facility for the 2013-2014 season.
- The percentage of healthcare employees in West Virginia that received a seasonal influenza vaccination ranged from a low of 40% to a high of 100% by facility for the 2013-2014 season.
- In the federally run program Healthy People 2020, which gives health related goals for the nation to meet by the year 2020, the goal for healthcare worker influenza vaccination is 90% in each facility. In the 2013-2014 season, 13 of 59 (22%) of West Virginia hospitals have exceeded this goal.\textsuperscript{16}
- 28 of 59 (47.5%) of West Virginia hospitals had a higher vaccination percentage of all healthcare workers (including employees, licensed independent practitioners, and student volunteers) in 2013-2014 than the national average of 75.2%.

Figure 13: 2013-2014 Influenza Season, All Hospital Workers, General Acute Care Hospitals

WV Acute Care Hospitals  
Percentage of All Hospital Workers (Including Licensed Independent Practitioners, Employees, and Student Volunteers) Vaccinated for Seasonal Influenza Two Year Comparison

Facility Name

- Charleston Area Medical Center (CAMC)
- Princeton Community Hospital
- Summersville Regional Medical Center
- Saint Francis Hospital
- Logan Regional Medical Center
- Beckley Appalachian Regional Hospital
- United Hospital Center
- Raleigh General Hospital
- CAMC- Teays Valley Hospital
- Davis Memorial Hospital
- St. Joseph’s Hospital of Buckhannon
- Cabell Huntington Hospital
- Reynolds Memorial Hospital
- Ohio Valley Medical Center
- Fairmont General Hospital, Inc.
- Stonewall Jackson Memorial Hospital
- Greenbrier Valley Medical Center
- Wheeling Hospital
- Camden Clark Memorial Hospital
- West Virginia University Hospital (WVUH)
- Pleasant Valley Hospital
- CCMC- St. Joseph's Campus
- Wetzel County Hospital
- Weirton Medical Center
- City Hospital-WVUH-E
- Williamson Memorial Hospital
- Williamson Memorial Hospital

Percent Vaccinated

2012-2013 Season

- 45%
- 52%
- 52%
- 55%
- 59%
- 58%
- 58%
- 75%
- 75%
- 75%
- 76%

2013-2014 Season

- 47%
- 52%
- 52%
- 55%
- 59%
- 58%
- 75%
- 75%
- 75%
- 76%
FIGURE 14: 2013-2014 INFLUENZA SEASON, HOSPITAL EMPLOYEES, CRITICAL ACCESS HOSPITALS

WV Critical Access Hospitals
Percentage of Hospital Employees Vaccinated for Seasonal Influenza
Two Year Comparison

Facility Name
Boone Memorial Hospital
Boone Memorial Hospital
Potomac Valley Hospital
Potomac Valley Hospital
Grant Memorial Hospital
Grant Memorial Hospital
Braxton County Memorial Hospital
Braxton County Memorial Hospital
Hampshire Memorial Hospital
Hampshire Memorial Hospital
Montgomery General Hospital
Montgomery General Hospital
Plateau Medical Center
Plateau Medical Center
War Memorial Hospital
War Memorial Hospital
Summers County ARH
Summers County ARH
Preston Memorial Hospital
Preston Memorial Hospital
Broaddus Hospital
Broaddus Hospital
Jefferson Memorial Hospital
Jefferson Memorial Hospital
Roane General Hospital
Roane General Hospital
Jackson General Hospital
Jackson General Hospital
Pocahontas Memorial Hospital
Pocahontas Memorial Hospital
Sistersville General Hospital
Sistersville General Hospital
Webster County Memorial Hospital
Webster County Memorial Hospital
Minnie Hamilton Health System
Minnie Hamilton Health System
Grafton City Hospital
Grafton City Hospital

Percent Vaccinated

2013-2014 Season

2012-2013 Season
Figure 15: 2013-2014 Influenza Season, All Hospital Workers, Critical Access Hospitals

WV Critical Access Hospitals
Percentage of All Hospital Workers (Including Licensed Independent Practitioners, Employees, and Student Volunteers) Vaccinated for Seasonal Influenza
Two Year Comparison

Facility Name

- Boone Memorial Hospital
- Grant Memorial Hospital
- Braxton County Memorial Hospital
- Hampshire Memorial Hospital
- Potomac Valley Hospital
- Montgomery General Hospital
- Plateau Medical Center
- War Memorial Hospital
- Summers County ARH
- Jefferson Memorial Hospital
- Broaddus Hospital
- Preston Memorial Hospital
- Jackson General Hospital
- Roane General Hospital
- Pocahontas Memorial Hospital
- Sistersville General Hospital
- Webster County Memorial Hospital
- Minnie Hamilton Health System
- Grafton City Hospital

Percent Vaccinated

2013-2014 Season
- 99%
- 96%
- 97%
- 97%
- 97%
- 97%
- 97%
- 64%
- 84%
- 82%
- 71%
- 71%
- 71%
- 68%
- 58%
- 54%
- 45%
- 57%
- 54%
- 50%
- 32%

2012-2013 Season
- 97%
- 92%
- 80%
- 79%
- 81%
- 77%
- 76%
- 72%
- 73%
- 77%
- 74%
- 74%
- 80%
- 83%
- 67%
- 56%
- 54%
- 67%
- 57%
- 71%
- 50%
- 67%
- 81%
- 76%
- 74%
- 71%
- 71%
- 74%
- 74%
- 68%
- 51%
- 84%
- 92%
- 64%
- 92%
- 97%
- 97%
- 97%
- 97%
- 97%
- 97%
- 96%
- 99%
- 92%
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- 81%
- 77%
- 76%
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- 68%
- 51%
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- 74%
- 80%
- 83%
- 67%
- 56%
- 54%
- 67%
- 57%
- 71%
- 50%
- 67%
- 81%
- 76%
- 74%
- 71%
- 71%
- 74%
- 74%
- 68%
Figure 16: 2013-2014 Influenza Season, Hospital Employees, Inpatient Rehabilitation Hospitals

WV Inpatient Rehabilitation Hospitals
Percentage of Hospital Employees Vaccinated for Seasonal Influenza
Two Year Comparison

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>2012-2013 Season</th>
<th>2013-2014 Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peterson Rehabilitation Hospital</td>
<td>93%</td>
<td>90%</td>
</tr>
<tr>
<td>Healthsouth Southern Hills Rehabilitation Hospital</td>
<td>81%</td>
<td>78%</td>
</tr>
<tr>
<td>Healthsouth Rehabilitation Hospital of Huntington</td>
<td>71%</td>
<td>60%</td>
</tr>
<tr>
<td>Healthsouth Mountain View Regional Rehabilitation Hospital</td>
<td>67%</td>
<td>63%</td>
</tr>
<tr>
<td>Healthsouth Western Hills Regional Rehabilitation Hospital</td>
<td>63%</td>
<td>53%</td>
</tr>
</tbody>
</table>
**Figure 17: 2013-2014 Influenza Season, All Hospital Workers, Inpatient Rehabilitation Hospitals**

WV Inpatient Rehabilitation Hospitals
Percentage of All Hospital Workers (Including Licensed Independent Practitioners, Employees, and Student Volunteers) Vaccinated for Seasonal Influenza
Two Year Comparison

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>2012-2013 Season</th>
<th>2013-2014 Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peterson Rehabilitation Hospital</td>
<td>43%</td>
<td>61%</td>
</tr>
<tr>
<td>Peterson Rehabilitation Hospital</td>
<td>57%</td>
<td>83%</td>
</tr>
<tr>
<td>Healthsouth Southern Hills Rehabilitation Hospital</td>
<td>61%</td>
<td>81%</td>
</tr>
<tr>
<td>Healthsouth Southern Hills Rehabilitation Hospital</td>
<td>61%</td>
<td>81%</td>
</tr>
<tr>
<td>Healthsouth Rehabilitation Hospital of Huntington</td>
<td>43%</td>
<td>70%</td>
</tr>
<tr>
<td>Healthsouth Rehabilitation Hospital of Huntington</td>
<td>43%</td>
<td>70%</td>
</tr>
<tr>
<td>Healthsouth Mountain View Regional Rehabilitation Hospital</td>
<td>57%</td>
<td>63%</td>
</tr>
<tr>
<td>Healthsouth Mountain View Regional Rehabilitation Hospital</td>
<td>57%</td>
<td>63%</td>
</tr>
<tr>
<td>Healthsouth Western Hills Regional Rehabilitation Hospital</td>
<td>43%</td>
<td>61%</td>
</tr>
<tr>
<td>Healthsouth Western Hills Regional Rehabilitation Hospital</td>
<td>43%</td>
<td>61%</td>
</tr>
</tbody>
</table>
Figure 18: 2013-2014 Influenza Season, Hospital Employees, Psychiatric Hospitals

WV Psychiatric Hospitals
Percentage of Hospital Employees Vaccinated for Seasonal Influenza
Two Year Comparison

- Highland Hospital: 2012-2013 Season 58%, 2013-2014 Season 99%
- River Park Hospital: 2012-2013 Season 51%, 2013-2014 Season 99%

Figure 19: 2013-2014 Influenza Season, All Hospital Workers, Psychiatric Hospitals

WV Psychiatric Hospitals
Percentage of All Hospital Workers (Including Licensed Independent Practitioners, Employees, and Student Volunteers) Vaccinated for Seasonal Influenza
Two Year Comparison

- Highland Hospital: 2012-2013 Season 100%, 2013-2014 Season 99%
- River Park Hospital: 2012-2013 Season 52%, 2013-2014 Season 58%
**Figure 20: 2013-2014 Influenza Season, Hospital Employees, Long Term Acute Care Hospitals**

WV Long Term Acute Care Hospitals
Percentage of Hospital Employees Vaccinated for Seasonal Influenza
Two Year Comparison

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>2012-2013</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornerstone Hospital of Huntington</td>
<td>61%</td>
<td>67%</td>
</tr>
<tr>
<td>Select Specialty Hospital, Charleston</td>
<td>97%</td>
<td>93%</td>
</tr>
</tbody>
</table>

**Figure 21: 2013-2014 Influenza Season, All Hospital Workers, Long Term Acute Care Hospitals**

WV Long Term Acute Care Hospitals
Percentage of All Hospital Workers (Including Licensed Independent Practitioners, Employees, and Student Volunteers) Vaccinated for Seasonal Influenza
Two Year Comparison

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>2012-2013</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornerstone Hospital of Huntington</td>
<td>61%</td>
<td>67%</td>
</tr>
<tr>
<td>Select Specialty Hospital, Charleston</td>
<td>77%</td>
<td>77%</td>
</tr>
</tbody>
</table>
Advisory Panel Accomplishments and Future Directions

The HAI Control Advisory Panel has made some changes to published hospital reporting by redesigning and simplifying the HAI reports, including the addition of color-coded SIR and rate graphs.

In order to assist hospitals in meeting reporting requirements, the HAI Control Advisory Panel developed the HAI Data Submission Quality Review Schedule and Procedure, which provided hospitals with data submission deadlines that may assist in avoiding state penalties, and potentially, federal penalties.

In order to further interagency partnerships, the West Virginia Bureau of Public Health (BPH) was provided access to the NHSN system as well as training per the recommendation of the HAI Control Advisory Panel. This was implemented to help further the BPH’s role in hospital oversight, epidemiology, and disease surveillance programs.

Continued surveillance and reporting of HAIs is imperative for implementing control and prevention strategies to ensure the safety of patients in healthcare facilities. As such, the HAI Control Advisory Panel and the WVHCA are committed to continually improving reporting strategies, interagency communication, and data quality reviews. In the 2013 HAI Report, a set of future HAI initiatives were proposed; in 2014, each goal was met. Below is a description of the goals and how they were met:

<table>
<thead>
<tr>
<th>2013 HAI Report Goals</th>
<th>2014 HAI Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue the collection and quality review of HAI data</td>
<td>Continued to collect and review HAI data, as well as created a data quality review schedule and procedure to help healthcare facilities with timely submission of data and to avoid state penalties</td>
</tr>
<tr>
<td>Develop guidelines for the public release of data</td>
<td>Revised the annual report to include more detailed HAI data as well as develop simplified reports for public use</td>
</tr>
<tr>
<td>Revise reporting requirements as necessary to align with state and national priorities</td>
<td>Reporting requirements were reviewed and the HAI Control Advisory Panel advised to continue following CMS reporting requirements into the next data year. In addition, a reporting guide was developed to outline reporting requirements</td>
</tr>
<tr>
<td>Collaborate with the Bureau for Public Health (BPH), Office of Epidemiology and Prevention Service’s HAI Program by providing data for consideration in hospital oversight, epidemiology, and surveillance programs</td>
<td>Bureau of Public Health (BPH) was provided access to the NHSN system as well as training per the recommendation of the HAI Control Advisory Panel to further interagency cooperation and communication and assist with hospital oversight, epidemiology, and surveillance programs</td>
</tr>
</tbody>
</table>
While these goals were met, the HAI Control Advisory Panel continues to work on improving procedures and lowering the rates of HAIs in West Virginia hospitals. As hospitals move into a new data collection year, the goals for 2015 have been updated as follows:

- Continue to revise and update the data quality review schedule and procedure to ensure timely data submission
- Continue to assist healthcare facilities regarding data submission and technical concerns regarding NHSN
- Revise reporting requirements and update reporting guide as needed to align with state and national priorities as directed by the HAI Control Advisory Panel and WVHCA Board of Directors

In our efforts to keep West Virginia hospitals up to date, there are some upcoming changes to reporting for the next few years that are important to note. As of September 2014, updates have been noted but may not be finalized or complete.

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Reporting Event</th>
<th>Requirement Change</th>
<th>Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Acute Care Facilities</td>
<td>CLABS, CAUTI</td>
<td>New reporting locations: adult and pediatric medical, surgical, and medical/surgical ward</td>
<td>January 1(^{st}), 2015</td>
</tr>
<tr>
<td></td>
<td>MRSA, CDI</td>
<td>Reporting locations expanded to include Emergency Department and 24 hour Observation units</td>
<td>January 1(^{st}), 2015</td>
</tr>
<tr>
<td>General Acute Care &amp; Critical Access Hospitals</td>
<td>Healthcare Personnel Influenza Vaccination</td>
<td>Inpatient psychiatric wards can be mapped in NHSN (similar to IRF wards within hospitals) and are required to report summary data</td>
<td>October 1(^{st}), 2015</td>
</tr>
<tr>
<td>Inpatient Rehabilitation Facilities (IRF)</td>
<td>MRSA, CDI</td>
<td>Reporting at Facility Wide, Inpatient Level; as well as for IRF units within a hospital</td>
<td>January 1(^{st}), 2015</td>
</tr>
<tr>
<td>Inpatient Psychiatric Facilities (IPF) Units within an Acute care facility</td>
<td>MRSA, CDI</td>
<td>IPF units will be mapped in NHSN and will be EXCLUDED from CMS reported data regarding MRSA and CDI for the whole facility</td>
<td>January 1(^{st}), 2015</td>
</tr>
<tr>
<td>Long Term Acute Care Facilities</td>
<td>MSRA, CDI</td>
<td>Reporting at Facility Wide, Inpatient Level</td>
<td>January 1(^{st}), 2015</td>
</tr>
</tbody>
</table>

*Table is adapted from the NHSN e-News Letter, Volume 9, Issue 3 (September 2014)
Additionally, national baselines are being updated for both long term acute care facilities and inpatient rehabilitation facilities in 2015, and reporting will move from pooled mean rate to SIR.

There were no changes to critical access hospital reporting for next year, and they will continue to report CAUTI events and healthcare personnel influenza vaccinations; however, CMS is reviewing critical access hospital mandatory reporting for future years. Psychiatric hospitals, excluding state-run facilities, are still only required to report healthcare personnel vaccinations as well.

**Technical Notes**

**Standardized Infection Ratio (SIR)**

There are various statistics that can be used to summarize and report HAI data at a national, state, or local level. The standardized infection ratio (SIR) is a commonly reported summary measure because it adjusts for patients of varying risk within each facility, which allows for valid comparisons between facilities. The SIR compares the actual number of infections reported by the hospital to the national baseline (from the National Healthcare Safety Network (NHSN) aggregate data), adjusting for several risk factors that have been significantly associated with differences in infection incidence. A SIR greater than 1.0 indicates that more infections occurred in the hospital than were expected based on national averages for hospitals of that type and size. Conversely, a SIR less than 1.0 indicates that fewer infections occur than expected.\(^{17}\) For example, a SIR of 1.20 indicates that the hospital had 20% more infections than expected; a SIR of 0.80 indicates that the hospital had 20% fewer infections than expected. When the number of expected infections are <1, the number of procedures performed is too low to calculate a precise SIR and comparative statistics.

**Rate and Pooled Mean Rate**

Another summary measure that is used to report HAI data is the rate. The rate is the measure of the number of events that occurred in a certain population in a specified time period. When reporting for large populations and/or rare events, the rate is often reported as a function of units of populations, chosen to present the rate in a simpler numeric form. For example, if an event occurs in 1 out of every 1000 patients, the rate is 0.001. However, if the rate is defined as being out of 1000 patients, the rate becomes 1. In this report, the rate and pooled mean rate is defined as being out of 1000 patients. The pooled mean rate is how NHSN defines data from hospitals across the country of similar type and size and pools the rates to develop the mean. This process of developing a pooled mean rate is completed every year by NHSN, which becomes the baseline for next year’s data. Therefore, the pooled mean rates in this report are from national 2012 data collected by NHSN.

\(^{17}\) Centers for Disease Control and Prevention. NHSN e-News: SIRs Special Edition. October 2010 (updated December 2010);1.