Eliminating CLABSI
A National Patient Safety Imperative

A Progress Report on the National On the CUSP: Stop BSI Project

A Project of:

Health Research & Educational Trust
Johns Hopkins University Quality and Safety Research Group
Michigan Health & Hospital Association Keystone Center for Patient Safety & Quality

Disclaimer: This report was developed with data collected and analyzed under contract with the Agency for Healthcare Research and Quality (AHRQ). The information and opinions expressed herein reflect solely the position of the authors. Nothing herein should be construed to indicate AHRQ support or endorsement of its contents.

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EXECUTIVE SUMMARY

Background

Healthcare-associated infections (HAIs) are infections that people acquire while they are receiving treatment for another condition in a health care setting. They are costly, deadly, and largely preventable. The U.S. Department of Health and Human Services’ Action Plan to Prevent Healthcare-Associated Infections is focusing attention on the need to dramatically reduce these infections; a recent CDC Report suggests that considerable progress is being made towards this goal. As part of this initiative, the Agency for Healthcare Research and Quality (AHRQ) is funding a national effort to prevent central line-associated bloodstream infections (CLABSIs) in U.S. hospitals. The On the CUSP: Stop BSI project is led by a unique partnership. This partnership consists of the Health Research & Educational Trust, the nonprofit research and educational affiliate of the American Hospital Association; the Johns Hopkins University Quality and Safety Research Group, which developed an innovative approach for improving patient safety; and the Michigan Health & Hospital Association’s Keystone Center for Patient Safety & Quality, which used this approach to dramatically reduce CLABSIs in Michigan. This report summarizes progress made in the first 2 years of the On the CUSP: Stop BSI project.

Progress Update

On the CUSP: Stop BSI requires that participating States have a lead organization that works with hospitals across their State to implement the clinical and cultural changes needed to reduce CLABSIs. Thus far, 45 State hospital associations and one other umbrella group have committed to leading the project in their States. Collectively, these groups have recruited more than 700 hospitals and 1,100 hospital teams to participate in the project. Twenty-two States began the project in 2009, 14 States and the District of Columbia began during 2010, and at least 8 States plus Puerto Rico will begin the effort in early 2011.

Project Impact

We examined the impact of the project on patients from the adult ICUs that began participating in the project during 2009. We focused on ICUs because data from these areas are the most valid. Compared to a baseline CLABSI rate of 1.8 infections per 1,000 central line days in these units, after 12–15 months of participation in the project, CLABSI rates have decreased to 1.17 infections per 1,000 central line days, a relative reduction of 35 percent. Progress for more recent participants is also being carefully evaluated.

Conclusions

Preliminary progress toward achieving the project’s stated goals is encouraging, but substantial work remains. Key conclusions thus far include:

- Adult ICUs included in this report, drawn from 22 States and more than 350 hospitals, have reduced their CLABSI rates by an average of 35 percent.
- At baseline, many of these ICUs had CLABSI rates below the national mean and were still able to reduce their rates.
• While 20 percent of hospitals in the United States are participating in the project, many more hospitals and hospital units that insert or maintain central lines would benefit from involvement in the project.
• The project demonstrates that even among hospitals that have already achieved low CLABSI rates, further improvement is possible and achievable.

INTRODUCTION AND OBJECTIVE

Healthcare-associated infections (HAIs) are largely preventable, and their occurrence can be dramatically reduced, to save lives and excess costs. The Department of Health and Human Services (HHS) launched an Action Plan to Prevent Healthcare-Associated Infections to improve patient safety and health care quality by providing a roadmap for preventing HAIs. A recent CDC report suggests that considerable progress is being made in preventing central line associated blood stream infections, but that further improvement is still needed.\(^1\) To further the effort to prevent HAIs, two large-scale initiatives have been funded and launched by the Agency for Healthcare Research and Quality (AHRQ). The goal of these initiatives is to prevent both central line-associated bloodstream infections (CLABSI) and catheter-associated urinary tract infections (CAUTI). Both initiatives use a combination of evidence-based best practices to reduce the risk of infections and the Comprehensive Unit-Based Safety Program (CUSP) to improve the culture of patient safety. Researchers at the Johns Hopkins University Quality and Safety Research Group (QSRG) initially developed CUSP. CUSP was subsequently implemented in collaboration with the Michigan Health & Hospital Association’s Keystone Center for Patient Safety & Quality (MHA Keystone Center) and hospitals across Michigan. This implementation resulted in a dramatic and sustained decrease in CLABSI rates in that State.\(^2\)

AHRQ has awarded contracts totaling $18 million to the Health Research & Educational Trust (HRET), the nonprofit research and educational affiliate of the American Hospital Association (AHA), to lead the national initiative to reduce CLABSI rates. HRET is partnering with the QSRG at Johns Hopkins University and the MHA Keystone Center to lead this effort. A recent expansion of HRET’s contract now provides limited resources to the State hospital associations and other organizations leading this effort at the State level. Prior to this, these organizations funded their support of this project with their own resources or funds from other sources. The national On the CUSP: Stop BSI project represents the first federally funded national effort with a clearly stated outcome goal: the reduction of CLABSI rates to less than 1 per 1,000 central line...

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days across all U.S. hospitals participating in the project. If this goal is achieved, the project will substantially reduce deaths and unnecessary costs associated with CLABSIs.

Since the project’s inception in October 2008, lead organizations (primarily State hospital associations) have been recruited in 44 States. As of November 2010, 38 of these States have commenced participation in the On the CUSP: Stop BSI initiative; 22 of those States have hospitals that have been participating in the project and submitting data for over one year. Given the significance of AHRQ’s investment in this project and the role that it plays in achieving HHS’s HAI reduction goals, there is value in assessing the project to this point, with three specific goals in mind. A first goal is to examine progress made in recruiting U.S. hospitals to participate in the project. A second goal is to evaluate the impact of the project on CLABSI rates in these participating hospitals. Finally, this report seeks to identify areas where improvement must continue to occur for the project to achieve its stated goals.

METHODS

Data Source
This report uses data stored in the On the CUSP: Stop BSI National Database created and maintained by the MHA Keystone Center in Lansing, Michigan. Each month, the number of central line days and the number of CLABSIs observed in the participating hospital units are submitted into the national database. Some hospitals submit infection rate data directly into this database, and others contribute data through the Centers for Disease Control and Prevention’s (CDC) National Healthcare Safety Network (NHSN). All hospitals use CDC definitions to count central line days and determine the number of CLABSIs observed in participating units.

All analyses except the list of participating hospitals in Appendix A are based on data drawn from the National Database on October 7, 2010. Data from participating hospitals in Tennessee were added to the National Database in November 2010, so results from these hospitals will be included in the next project update. Because we want to recognize as many of the hospitals that have chosen to participate as possible, the hospital list in Appendix A reflects all participants confirmed as of January 2011.

For our assessments of project impact, data were limited to teams representing adult ICUs that began participating in the project in 2009. These teams were drawn from eight States that began the project in May 2009 (cohort 1) and an additional 14 States that began the project in September 2009 (cohort 2). We limited our results to adult ICUs because of challenges in counting central line days outside the ICU setting. As such, CLABSI data for ICUs are more valid than CLABSI rates outside the ICU. Results are currently limited to the first two cohorts because
they have at least four quarters of data that can be used to assess CLABSI rate changes over time.

**Participation Measures**

Data from the On the CUSP: Stop BSI National Database were linked to information in the 2008 AHA Annual Survey of hospitals based on hospital name, location, and AHA hospital identifier (when available and accurate). All hospitals that could be linked were classified by size using the “total beds staffed” variable from the AHA Annual Survey. Hospitals were also classified based on whether they were critical access hospitals, rural referral hospitals, members of a health care system, located in one of the 100 largest cities in the United States, or members of the Council of Teaching Hospitals (COTH). Because hospitals in North Carolina and Ohio use blinded hospital identifiers, hospital characteristics were not available for those hospitals or for an additional nine hospitals that could not be matched to data in the AHA Annual Survey.

**CLABSI Rates**

CLABSI rates for the two cohorts were calculated for a baseline time period of up to 12 months and for each subsequent time period. At the time of the production of this report each cohort had at least four full quarters of data. The time periods are shown below:

<table>
<thead>
<tr>
<th>Time Period (Non-Calendar Quarters)</th>
<th>Cohort 1</th>
<th>Cohort 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td>May 1, 2008 to Apr. 30, 2009</td>
<td>Sept. 1, 2008 to Aug. 31, 2009</td>
</tr>
<tr>
<td><strong>Time period 1</strong></td>
<td>May 1, 2009 to July 31, 2009</td>
<td>Sept. 1, 2009 to Nov. 30, 2009</td>
</tr>
<tr>
<td><strong>Time period 4</strong></td>
<td>Feb. 1, 2010 to July 31, 2010</td>
<td>June 1, 2010 to Sept. 31, 2010</td>
</tr>
</tbody>
</table>

Central line days were calculated as the sum of all reported central line days during the reporting period, while the number of CLABSIIs equaled the sum total of all CLABSIIs reported during the period. The CLABSI rate equals the ratio of CLABSIIs to central line days multiplied by 1,000 (to create a rate per 1,000 central line days). If a team reported zero central line days, the CLABSI rate for that period was set to “missing.” However, the team still was classified as having reported CLABSI data for that period.
RESULTS

Project Participation

State Participation. Recruitment to the project is an ongoing process that began in fall 2008 and is continuing. Lead organizations in States were encouraged to recruit as many teams of participants as they could. The ongoing success of this program, awareness of impending CMS public reporting of CLABSI rates, and the 2011 requirement that hospitals submit CLABSI data into NHSN are encouraging additional hospitals to enroll. Once States agreed to participate, they were placed into a project group or “cohort” along with other States beginning the project at the same time. At present, five cohorts of States are participating in the project, and a sixth is scheduled to begin in January 2011. Many States are continuing to recruit additional hospital teams to participate. As a result, some lead organizations are supporting hospital participants in one or more of the project cohorts. Figure 1 illustrates the current status of State recruitment efforts.

Figure 1: Participation by State
Forty-four States plus the District of Columbia and Puerto Rico have committed to participating in one of the six cohorts. Although Michigan is not listed as a formal project participant, Michigan hospitals continue to work with the MHA Keystone Center on sustaining the exceptionally low CLABSI rates they achieved in the initial Keystone Project.\textsuperscript{3,4} The State of Washington has participated in some project activities but has not submitted any CLABSI data.

Levels of participation within States vary substantially. Table 1 provides a breakdown of the number of participating hospitals and teams by State. This table is limited to the first four project cohorts; cohorts 5 and 6 are still actively recruiting hospital participants. Because some States have a higher percentage of very small hospitals that do not have an ICU or insert central lines, some variation in the percentage of hospitals in each State that could benefit from project participation is to be expected. Alabama, Delaware, Hawaii, and Maryland all have more than 50 percent of their hospitals participating in the project.

<table>
<thead>
<tr>
<th>State</th>
<th>Participating Teams\textsuperscript{5}</th>
<th>Participating Hospitals</th>
<th>Community Hospitals in State\textsuperscript{6}</th>
<th>Hospital Recruitment Percentage</th>
<th>Hospitals in State with an ICU\textsuperscript{7}</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>91</td>
<td>77</td>
<td>115</td>
<td>67%</td>
<td>68</td>
</tr>
<tr>
<td>AR</td>
<td>54</td>
<td>28</td>
<td>95</td>
<td>29%</td>
<td>49</td>
</tr>
<tr>
<td>CO</td>
<td>8</td>
<td>6</td>
<td>84</td>
<td>7%</td>
<td>42</td>
</tr>
<tr>
<td>CT</td>
<td>18</td>
<td>15</td>
<td>35</td>
<td>43%</td>
<td>25</td>
</tr>
<tr>
<td>DE</td>
<td>14</td>
<td>8</td>
<td>7</td>
<td>114%</td>
<td>6</td>
</tr>
<tr>
<td>FL</td>
<td>73</td>
<td>35</td>
<td>215</td>
<td>16%</td>
<td>111</td>
</tr>
<tr>
<td>GA</td>
<td>36</td>
<td>23</td>
<td>154</td>
<td>15%</td>
<td>79</td>
</tr>
<tr>
<td>HI</td>
<td>38</td>
<td>16</td>
<td>25</td>
<td>64%</td>
<td>14</td>
</tr>
<tr>
<td>IA</td>
<td>17</td>
<td>9</td>
<td>118</td>
<td>8%</td>
<td>75</td>
</tr>
<tr>
<td>IL</td>
<td>71</td>
<td>35</td>
<td>189</td>
<td>19%</td>
<td>127</td>
</tr>
<tr>
<td>IN</td>
<td>20</td>
<td>15</td>
<td>134</td>
<td>11%</td>
<td>86</td>
</tr>
</tbody>
</table>


\textsuperscript{5} Teams normally represent a single unit, but some teams include personnel from multiple units.

\textsuperscript{6} The term “Community Hospitals in State” reflects those hospitals defined as “Community Hospitals” in the AHA Annual Survey and refers to all nonfederal, short-term and long-term general acute care hospitals. The recruitment percentage is calculated based on this number. There are instances where participating hospitals are not characterized as community hospitals, and these result in a recruitment percentage greater than 100.

\textsuperscript{7} This category denotes hospitals with some form of an ICU. The project is reporting this because this hospital designation accounts for the majority of project participants, as well as the majority of hospitals likely to insert central lines and to experience CLABSI's.
| State | KS | KY | MA | MD | MN | MO | NC | NE | NH | NJ | NV | NY | OH | OK | OR | PA | SC | TX | VA | WI | WV |
|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Beds  | 12 | 59 | 18 | 58 | 28 | 10 | 47 | 17 | 10 | 53 | 17 | 29 | 64 | 17 | 4  | 45 | 47 | 43 | 38 | 79 | 29 |
| ICU   | 9  | 33 | 12 | 37 | 10 | 10 | 29 | 8  | 9  | 37 | 8  | 22 | 57 | 13 | 4  | 26 | 22 | 26 | 23 | 40 | 20 |
| Cases | 146| 109| 80 | 49 | 133| 134| 117| 90 | 28 | 80 | 43 | 191| 195| 135| 59 | 197| 72 | 520| 91 | 132| 58 |
| %     | 6% | 30%| 15%| 76%| 8% | 7% | 25%| 9% | 32%| 46%| 19%| 12%| 29%| 10%| 7% | 13%| 31%| 5% | 25%| 30%| 34%|
|         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

Hospital Participation. Because CLABSI can occur in all sizes and types of hospitals in which central lines are used, this project has encouraged each State lead organization to enlist the participation of all hospitals that use central lines when recruiting. Figure 2 summarizes the participation of hospitals in this project based on their size (defined by the number of hospital beds). Percentages were based on the number of hospitals with an adult ICU of each size participating in the project divided by the total number of hospitals of each size with an adult medical or surgical ICU (based on data in the 2008 AHA Annual Survey).
Thus far, project recruitment has been strongest among hospitals with more than 400 beds, and weakest among hospitals with fewer than 100 beds. Although small hospitals insert central lines in their ICUs, the number of insertions is often very low, which perhaps has made CLABSI prevention a lower priority for these hospitals.

Figure 3 summarizes the recruitment levels for hospitals with a range of characteristics. More than 24 percent of teaching hospitals with ICUs are participating in the project. The involvement of rural referral hospitals, hospitals from the 100 largest cities, and hospitals that are part of hospital systems is slightly lower. Efforts to bolster recruitment in groups where involvement is lower are ongoing.
Appendix A provides a full list of all hospitals participating in the project as of January 2011. Ohio and Washington have not provided the names of participating hospitals, so those are not included. Because the number of participating hospitals continues to grow, the list of participating hospitals maintained on the project Web site at www.onthecusptophai.org provides the best source of current information on which hospitals have chosen to participate. While the list in Appendix A and on the Web site includes every hospital that has been enrolled in the national project database, some hospitals on this list may not be continuing to submit CLABSI data or participate in scheduled project activities on a regular basis.

Unit Team Participation. Because the vast majority of central lines are placed in patients in an ICU, recruiting ICU teams has been the project’s primary focus. However, some central lines are placed and maintained in non-ICU units. Thus, teams representing these units are also participating. At present, some pediatric or neonatal ICUs are participating in the project; HRET is working with other organizations that specialize in pediatric care to provide focused guidance to hospitals seeking to prevent CLABSIIs in pediatric and neonatal ICUs. Figure 4 illustrates the range of units participating in the first four cohorts of the On the CUSP: Stop BSI initiative.
More than 75 percent of units participating in the project thus far are ICUs, with a substantial majority of the ICUs consisting of adult medical/surgical ICUs.

**Project Impact**

While participation of hospitals is critical, the ultimate measure of success is the reduction of CLABSI rates. A second stated project goal is the improvement in safety culture in participating units. Significant and sustained improvement in a clinical outcome such as CLABSI requires a culture where all staff understand and can be held accountable for ensuring the safety of patients. To assess progress in culture change, participating units are asked to complete the AHRQ Safety Culture survey at the start and end of the project. Results of these administrations of the survey will be reported when they become available.
Table 2: Average CLABSI Rates
Cohorts 1 & 2 with units reporting during ANY of the five time periods
Information detailed reflective of data entered as of October 7, 2010.

<table>
<thead>
<tr>
<th></th>
<th>Baseline 12 months prior to intervention</th>
<th>Period 1 Months 1-3 post intervention</th>
<th>Period 2 Months 4-6 post intervention</th>
<th>Period 3 Months 7-9 post intervention</th>
<th>Period 4 Months 10-15 post intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of States</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Number of units reporting</td>
<td>384</td>
<td>436</td>
<td>435</td>
<td>434</td>
<td>402</td>
</tr>
<tr>
<td>Average CLABSIs/unit</td>
<td>3.12</td>
<td>0.93</td>
<td>0.72</td>
<td>0.65</td>
<td>0.64</td>
</tr>
<tr>
<td>Average CL days/unit</td>
<td>1680</td>
<td>510</td>
<td>508</td>
<td>507</td>
<td>556</td>
</tr>
<tr>
<td>Average BSI rate</td>
<td>1.80</td>
<td>1.64</td>
<td>1.31</td>
<td>1.14</td>
<td>1.17</td>
</tr>
<tr>
<td>95% confidence interval</td>
<td>(1.53, 2.08)</td>
<td>(1.39, 1.89)</td>
<td>(1.09, 1.53)</td>
<td>(0.94, 1.35)</td>
<td>(0.89, 1.44)</td>
</tr>
<tr>
<td>Change from baseline*</td>
<td>NA</td>
<td>-0.19</td>
<td>-0.53</td>
<td>-0.61</td>
<td>-0.59</td>
</tr>
<tr>
<td>95% confidence interval</td>
<td>(-0.58, 0.20)</td>
<td>(-0.89, -0.07)</td>
<td>(-0.97, -0.25)</td>
<td>(-1.01, -0.17)</td>
<td></td>
</tr>
</tbody>
</table>

* Based on unpaired comparison of unit rates between time periods

For all adult ICUs participating in the first two project cohorts, rates have dropped from an average of 1.8 infections per 1,000 central line days to 1.17 infections per 1,000 central line days, an overall relative reduction of 35 percent. Because mean CLABSI rates can be distorted by one or more units with very high rates, it is useful to examine both mean and median CLABSI rates. Figure 5 illustrates the changes in mean and median CLABSI rates across the data reporting periods. More than half of all participating units reported zero CLABSIs in each reporting period since they began participating in the project. Working to assist units that have not achieved this rate remains a top project priority.
Table 2 and Figure 5 include data from all units that reported data in each of the measurement periods. It is possible that the worst performing units at baseline simply failed to report data during later time periods, leading to an artificial drop in the rates. To rule out this possibility, the same analysis was performed using only units that reported data at baseline and in each subsequent reporting period. Table 3 presents these results, which are very similar.

**Table 3: Average CLABSI Rates**
*Cohorts 1 & 2 with units reporting during ALL of the five time periods*
*Information detailed reflective of data entered as of October 7, 2010.*

<table>
<thead>
<tr>
<th></th>
<th>Baseline 12 months prior to intervention</th>
<th>Period 1 Months 1-3 post intervention</th>
<th>Period 2 Months 4-6 post intervention</th>
<th>Period 3 Months 7-9 post intervention</th>
<th>Period 4 Months 10-15 post intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of States</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Number of units reporting</td>
<td>349</td>
<td>349</td>
<td>349</td>
<td>349</td>
<td>349</td>
</tr>
<tr>
<td>Average CLABSIs/unit</td>
<td>3.20</td>
<td>0.83</td>
<td>0.69</td>
<td>0.67</td>
<td>0.66</td>
</tr>
<tr>
<td>Average CL days/unit</td>
<td>1736</td>
<td>499</td>
<td>502</td>
<td>518</td>
<td>598</td>
</tr>
<tr>
<td>Average BSI rate</td>
<td>1.76</td>
<td>1.65</td>
<td>1.31</td>
<td>1.22</td>
<td>1.21</td>
</tr>
<tr>
<td>95% confidence interval</td>
<td>(1.51, 2.01)</td>
<td>(1.36, 1.93)</td>
<td>(1.07, 1.55)</td>
<td>(0.98, 1.45)</td>
<td>(0.90, 1.52)</td>
</tr>
<tr>
<td>Change from baseline*</td>
<td>NA</td>
<td>-0.11</td>
<td>-0.45</td>
<td>-0.54</td>
<td>-0.55</td>
</tr>
<tr>
<td>95% confidence interval</td>
<td>(-0.44, -0.77)</td>
<td>(-0.83, -0.93)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
* Based on paired comparison of unit rates between time periods

Overall, rates decreased in the units with complete data by 31 percent, from 1.76 to 1.21 CLABSIs per 1,000 central line days, indicating that the CLABSI rate reductions observed in project participants cannot be attributed to missing data. One of the more surprising findings in this data is the relatively low baseline CLABSI rates. Alternative explanations for these low rates are being examined. However, we do not believe that only hospitals with good rates are participating in the project.

The other data concern is the accuracy of self-reported CLABSI rates. Data validation is not included in the scope of the project at this point. However, data submitted directly into our national project database is subject to more screens for accuracy than is currently the case for data submitted into NHSN. The national project team is continuing to work with AHRQ and CDC to explore the issue of validation.

**AREAS FOR CONTINUED IMPROVEMENT**

Although the results described above indicate that the project is making substantial progress toward achieving its recruitment and CLABSI reduction goals, opportunities for improvement remain. The three most important areas for improvement are:

- **Recruitment:** With fewer than 20 percent of U.S. hospitals containing an ICU participating in this project, encouraging additional hospitals to be involved in this project remains a priority. Certainly some hospitals have participated in very successful local or regional efforts to reduce CLABSIs and have compelling data demonstrating the success of their efforts. However, most nonparticipating hospitals have not made the changes needed to produce sustainable CLABSI rates near zero. The leadership of the American Hospital Association and many State hospital associations are working with AHRQ, CDC, and the On the CUSP: Stop BSI national project team to encourage all hospitals to participate in the project.

- **Data submission:** As reflected in tables 2 and 3, only 80 percent of participating adult ICUs in the first two cohorts have submitted CLABSI rate data in each of the reporting periods. While data submission does not improve CLABSI rates, a failure to continuously monitor CLABSIs and to use each infection to identify processes that must be improved to prevent them in the future will not lead to sustained improvement. The national leadership of the project is working closely with the lead organizations in every participating State to encourage all participating hospitals to remain fully engaged in the project for its duration and in the monitoring and reporting of their CLABSI rates.
• Variability: Although CLABSI rates have dropped significantly in the first two cohorts, substantial variability remains between participating units in these cohorts. For the project to reach its stated goal, more than half the units participating in the project must have zero CLABSIs in any given quarter. At present, this standard has not been achieved, so working to reduce variability between units and States and across measurement periods remains a high priority.

CONCLUSION

Results reported above are aligned with a very encouraging CDC report on the decline in the number of CLABSIs between 2001 and 2009. That report found a decrease in the ICU CLABSI rate from 3.64 per thousand line days in 2001 to 1.65 per thousand line days in 2009. While differences in the methods used to calculate these rates mean that comparisons should be made quite cautiously, it does appear that the On the CUSP: Stop BSI project is both succeeding in recruiting units that have higher CLABSI rates than the national average and in helping these units decrease their rates well below the national average that CDC reports.

This report is not a comprehensive analysis of every important question related to the On the CUSP: Stop BSI national initiative. The national project team continues to conduct analyses to better understand which units are succeeding, which are struggling and why, so that changes may be made to the initiative to maximize its impact for every participating hospitals. Better understanding the root causes of CLABSIs that continue to occur sporadically in even high-performing units may also lead to important insights. Continuing to help hospitals correctly count central line days and identify CLABSIs is vital to efforts to prevent them and to increase public confidence that this risk to patient safety is being reduced or even eliminated. While much of the work on this national initiative still remains, the results in this report indicate that significant progress is being made toward achieving its goals.

APPENDIX A: PARTICIPATING HOSPITALS, BY STATE

Alabama
Andalusia Regional Hospital, Andalusia
Athens-Limestone Hospital, Athens
Atmore Community Hospital, Atmore
Baptist Medical Center East, Montgomery
Baptist Medical Center South, Montgomery
Bibb Medical Center, Centreville
Brookwood Medical Center, Birmingham
Cherokee Medical Center, Centre
Chilton Medical Center, Clanton
Clay County Hospital, Ashland
Community Hospital, Tallassee
Cooper Green Mercy Hospital, Birmingham
Coosa Valley Medical Center, Sylacauga
Crestwood Medical Center, Huntsville
Cullman Regional Medical Center, Cullman
D.W. McMillan Memorial Hospital, Brewton
Dale Medical Center, Ozark
DCH Regional Medical Center, Tuscaloosa
Decatur General Hospital, Decatur
DeKalb Regional Medical Center, Fort Payne
East Alabama Medical Center, Opelika
Elba General Hospital, Elba
Eliza Coffee Memorial Hospital, Florence
Evergreen Medical Center, Evergreen
Fayette Medical Center, Fayette
Flowers Hospital, Dothan
Florala Memorial Hospital, Florala
Gadsden Regional Medical Center, Gadsden
Georgiana Hospital, Georgiana
Grove Hill Memorial Hospital, Grove Hill
Hale County Hospital, Greensboro
Helen Keller Hospital, Sheffield
Highlands Medical Center, Scottsboro
Huntsville Hospital, Huntsville
Infirmary West, Mobile
J. Paul Jones Hospital, Camden
Jackson Hospital, Montgomery
Jackson Medical Center, Jackson
Jacksonville Medical Center, Jacksonville
L.V. Stabler Memorial Hospital, Greenville

Lanier Health Services, Valley
Marion Regional Medical Center, Hamilton
Marshall Medical Center North, Guntersville
Marshall Medical Center South, Boaz
Medical Center Barbour, Eufaula
Medical Center Enterprise, Enterprise
Medical West, an affiliate of University of Alabama-Birmingham Health System, Bessemer
Mizell Memorial Hospital, Opp
Mobile Infirmary Medical Center, Mobile
Monroe County Hospital, Monroe
North Baldwin Infirmary, Bay Minette
Northeast Alabama Regional Medical Center, Anniston
Northport Medical Center, Northport
Parkway Medical Center, Decatur
Pickens County Medical Center, Carrollton
Prattville Baptist Hospital, Prattville
Princeton Baptist Medical Center, Birmingham
Providence Hospital, Mobile
Randolph Medical Center, Roanoke
Red Bay Hospital, Red Bay
Riverview Regional Medical Center, Gadsden
Russell Medical Center, Alexander City
Russellville Hospital, Russellville
Shelby Baptist Medical Center, Alabaster
Shoals Hospital, Muscle Shoals
South Baldwin Regional Medical Center, Foley
Southeast Alabama Medical Center, Dothan
Springhill Medical Center, Mobile
St. Vincent's Birmingham, Birmingham
St. Vincent's Blount, Oneonta
St. Vincent's East, Birmingham
St. Vincent's St. Clair, Pell City
Thomas Hospital, Fairhope
Trinity Medical Center, Birmingham
Troy Regional Medical Center, Troy
University of Alabama-Birmingham Hospital
(Including UAB Highlands), Birmingham
University of South Alabama (USA) Medical
Center, Mobile
Vaughan Regional Medical Center, Selma
Wiregrass Medical Center, Geneva

Arkansas
Arkansas Heart Hospital, Little Rock
Baptist Health Extended Care Hospital, Little
Rock
Baptist Health Medical Center, Arkadelphia
Baptist Health Medical Center, Heber
Springs
Baptist Health Medical Center, Little Rock
Baptist Health Medical Center, North Little
Rock
Baxter Regional Medical Center, Mountain
Home
Bradley County Medical Center, Warren
Crittenden Regional Hospital, West
Memphis
CrossRidge Community Hospital, Wynne
Drew Memorial Hospital, Monticello
Five Rivers Medical Center, Pocahontas
Lawrence Memorial Hospital, Walnut Ridge
Mercy Medical Center, Rogers
NEA Baptist Memorial Hospital, Jonesboro
North Arkansas Regional Medical Center,
Harrison
Ouachita County Medical Center, Camden
Ozark Health Medical Center, Clinton
Saint Mary's Regional Medical Center,
Russellville
St. Edward Mercy Medical Center, Fort Smith
St. Joseph's Mercy Health Center, Hot
Springs
University Hospital of Arkansas, Little Rock
Washington Regional Medical Center,
Fayetteville
White County Medical Center, Searcy
White River Medical Center, Batesville

Colorado
Exempla Lutheran Medical Center, Wheat
Ridge
Exempla Saint Joseph Hospital, Denver
Poudre Valley Hospital, Fort Collins
Southwest Memorial Hospital, Southwest
St. Mary-Corwin Medical Center, Pueblo
University Hospital, Denver

Connecticut
Bridgeport Hospital, Bridgeport
Bristol Hospital, Bristol
Danbury Hospital, Danbury
Hospital of Saint Raphael, New Haven
John Dempsey Hospital, University of
Connecticut Health Center, Farmington
Lawrence and Memorial Hospital, New
London
Manchester Memorial Hospital, Manchester
Norwalk Hospital, Norwalk
Rockville General Hospital, Vernon
Saint Francis Hospital and Medical Center,
Hartford
Saint Mary's Hospital, Waterbury
St. Vincent's Medical Center, Bridgeport
Waterbury Hospital, Waterbury
The William W. Backus Hospital, Norwich
Yale-New Haven Hospital, New Haven

Delaware
Alfred I duPont Hospital for Children,
Wilmington
Beebe Medical Center, Lewes
Christiana Hospital, Newark
Kent General Hospital, Dover
Milford Memorial Hospital, Milford
Nanticoke Memorial Hospital, Seaford
St. Francis Hospital, Wilmington
Wilmington Hospital, Wilmington

District of Columbia
Washington Hospital Center, Washington
DC

National Rehabilitation Hospital, Washington DC
Georgetown University Hospital, Washington DC
George Washington University Hospital, Washington DC
Sibley Memorial Hospital, Washington DC
Howard University Hospital, Washington DC

Florida
Adventist Health System, Winter Park
Baptist Hospital, Pensacola
Baptist Hospital of Miami, Miami
Baptist Medical Center South, Jacksonville
Cape Canaveral Hospital, Cocoa Beach
Cape Coral Hospital, Cape Coral
Citrus Memorial Health System, Inverness
Doctors Hospital, Coral Gables
Gulf Coast Medical Center, Fort Myers
H. Lee Moffitt Cancer Center, Tampa
Health Central, Ocoee
HealthPark Medical Center, Fort Myers
Holmes Regional Medical Center, Melbourne
Holy Cross Hospital, Fort Lauderdale
Homestead Hospital, Homestead
Jupiter Medical Center, Jupiter
Lakeland Regional Medical Center, Lakeland
Lee Memorial Hospital, Fort Myers
Mariners Hospital, Tavernier
Mayo Clinic Hospital, Florida, Jacksonville
Memorial Hospital Miramar, Miramar
Memorial Hospital Pembroke, Pembroke Pines
Memorial Hospital West, Pembroke Pines
Memorial Regional Hospital, Hollywood
Memorial Regional Hospital South, Hollywood
Munroe Regional Medical Center, Ocala
NCH Healthcare System, Naples
North Broward Medical Center, Deerfield Beach
Orlando Regional Medical Center, Orlando
Palm Bay Hospital, Palm Bay
Sacred Heart Hospital of Pensacola, Pensacola
Sarasota Memorial Health Care System, Sarasota
Shands at the University of Florida, Gainesville
Shands Jacksonville Medical Center, Jacksonville
South Miami Hospital, South Miami
Tallahassee Memorial HealthCare, Tallahassee

Georgia
Atlanta Medical Center, Atlanta
Cartersville Medical Center, Cartersville
DeKalb Medical Hillandale, Lithonia
DeKalb Medical North Decatur, Decatur
Emory Eastside Medical Center, Snellville
Emory Johns Creek Hospital, Duluth
Emory University Hospital, Atlanta
Emory University Hospital Midtown, Atlanta
Emory University Hospital, Wesley Woods, Atlanta
Emory-Adventist Hospital, Smyrna
Floyd Medical Center, Rome
Gwinnett Medical Center Hospital, Lawrenceville
Habersham Medical Center, Demorest
Houston Healthcare Perry Hospital, Perry
Hutcheson Medical Center, Fort Ogelthorpe
Liberty Regional Medical Center, Hinesville
Memorial Hospital and Manor, Bainbridge
Newton Medical Center, Covington
Phoebe Putney Memorial Hospital, Albany
Piedmont Newman Hospital, Newnan
Redmond Regional Medical Center, Rome
St. Francis Hospital, Columbus
Tift Regional Medical Center, Tifton
Upson Regional Medical Center, Thomaston
WellStar Cobb Hospital, Austell
WellStar Kennestone Hospital, Marietta
West Georgia Health System, LaGrange
Hawaii
Castle Medical Center, Kailua
Hawaii Medical Center East, Honolulu
Hawaii Medical Center West, Ewa Beach
Hilo Medical Center, Hilo
Kaiser Permanente Hospital, Honolulu
Kapiolani Medical Center for Women and Children, Honolulu
Kona Community Hospital, Kealakekua
Kuakini Medical Center, Honolulu
KVMH-West Kauai Medical Center, Waimea
Maui Memorial Medical Center, Wailuku
North Hawaii Community Hospital, Kamuela
Pali Momi Medical Center, Aiea
Straub Hospital and Clinic, Honolulu
The Queens Medical Center, Honolulu
Tripler Army Medical Center, Honolulu
Wahiawa General Hospital, Wahiawa
Wilcox Memorial Hospital, Lihue

Illinois
Carle Foundation Hospital, Urbana
Centegra, McHenry
Centegra, Woodstock
CGH Medical Center, Sterling
Decatur Memorial Hospital, Decatur
Delnor Community Hospital, Geneva
Edward Hospital, Naperville
Fayette County Hospital, Vandalia
Ferrell Hospital, Eldorado
FHN Memorial Hospital, Freeport
Greenville Regional Hospital, Greenville
Hamilton Memorial Hospital District, Mcleansboro
Harrisburg Medical Center, Harrisburg
Iroquois Memorial Hospital, Watseka
Jerseyville Community Hospital, Jerseyville
Katherine Shaw Bethea Hospital, Dixon
Kewanee Hospital, Kewanee
Kindred Hospital Chicago, Northlake
Kishwaukee Community Hospital, DeKalb
Loretto Hospital, Chicago
Loyola Gottlieb Memorial Hospital, Melrose Park
MacNeal Hospital, Berwyn
Mason District Hospital, Havana
McDonough District Hospital, Macomb
Memorial Medical Center, Springfield
Mercy Hospital, Chicago
MetroSouth Medical Center, Blue Island
Morris Hospital and Healthcare System, Morris
Mount Sinai Hospital, Chicago
OSF Saint Anthony Medical Center, Rockford
OSF Saint Mary Medical Center, Galesburg
Ottawa Regional Hospital, Ottawa
Pekin Hospital, Pekin
Pickneyville Community Hospital, Pickneyville
Proctor Hospital, Peoria
Provena Saint Joseph Medical Center, Joliet
Provena Saint Mary's Hospital, Kankakee
Riverside Medical Center, Kankakee
Rockford Memorial Hospital, Rockford
Rush Copley Medical Center, Aurora
Rush Oak Park Hospital, Oak Park
Sacred Heart Hospital, Chicago
St. Anthony's Health System, Alton
St. Alexius Medical Center, Hoffman Estates
St. Mary's and Elizabeth's Medical Center, Chicago
Sparta Community Hospital, Sparta
Thomas H. Boyd Memorial Hospital, Carrollton
Valley West Community Hospital, Sandwich
Vista Health System, Waukegan

Indiana
Deaconess Hospital, Evansville
Munster Community, Munster
Saint Margaret Mercy, Dyer
Schneck Medical Center, Seymour
St. Vincent Heart Center of Indiana, Indianapolis
St. Francis Hospital, Beech Grove Campus, Beech Grove
St. Mary Medical Center, Hobart
St. Vincent Dunn Hospital, Bedford

**Iowa**

Broadlawns Medical Center, Des Moines
Covenant Medical Center, Waterloo
The Finley Hospital, Dubuque
Genesis Medical Center, Davenport
Mary Greeley Medical Center, Ames
Mercy Hospital Iowa City, Iowa City
Mercy Hospital, CB, Council Bluffs
Pella Regional Health Center, Pella
Ringgold County Hospital, Mount Ayr
Skiff Medical Center, Newton
St. Anthony Regional Hospital and Nursing Home, Carroll
Trinity Muscatine, Muscatine
Waverly Health Center, Waverly

**Kansas**

Cheyenne County Hospital, St. Francis
Community Memorial Healthcare, Marysville
Cushing Memorial Hospital, Leavenworth
FW Huston Medical Center, Winchester
Hays Medical Center, Hays
Holton Community Hospital, Holton
Kingman Community Hospital, Kingman
Lawrence Memorial Hospital, Lawrence
Menorah Medical Center, Overland Park
Mercy Regional Health Center, Manhattan
Mitchell County Health System, Beloit
Morris County Hospital, Council Grove
Neosho Memorial Regional Medical Center, Chanute
Newton Memorial Hospital, Newton
Pratt Regional Medical Center, Pratt
Ransom Memorial Hospital, Ottawa
Republic County Hospital, Belleville
Saint Lukes South, Overland Park
Salina Regional Health Center, Salina
Shawnee Mission Medical Center, Shawnee Mission
The University of Kansas Hospital, Kansas City
Wilson Medical Center, Neodesha

**Kentucky**

Baptist Hospital East, Louisville
Central Baptist Hospital, Lexington
Continuing Care Hospital, Lexington
Ephraim McDowell Regional Medical Center, Danville
Hardin Memorial Hospital, Elizabethtown
Harlan ARH, Harlan
Harrison Memorial Hospital, Cynthiana
Hazard ARH, Hazard
Highlands Regional Medical Center, Prestonsburg
Jennie Stuart Medical Center, Hopkinsville
Jewish Hospital, Louisville
Jewish Hospital Shelbyville, Shelbyville
Kindred Hospital of Louisville, Louisville
King's Daughters Medical Center, Ashland
Lake Cumberland Regional Hospital, Somerset
Meadowview Regional Medical Center, Maysville
Methodist Hospital, Henderson
Middlesboro ARH, Middlesboro
Norton Audubon, Louisville
Norton Brownsboro Hospital, Louisville
Norton Hospital, Louisville
Norton Suburban Hospital, Louisville
Our Lady of Bellefonte Hospital, Ashland
Owensboro Medical Health System, Owensboro
Pikeville Medical Center, Pikeville
Spring View Hospital, Lebanon
St. Joseph East, Lexington
St. Joseph Hospital, Lexington
St. Mary's and Elizabeth Hospital, Louisville
Taylor Regional Hospital, Campbellsville
TJ. Samson Community Hospital, Glasgow
Whitesburg ARH, Whitesburg
Williamson ARH, South Williamson

**Louisiana**

Heart Hospital of Lafayette, Lafayette
Interim LSU Public Hospital, New Orleans
Lane Regional Medical Center, Zachary
Louisiana State University Bogalusa Medical Center, Bogalusa
Louisiana State University Earl K. Long Medical Center, Baton Rouge
North Oaks Health System, Hammond
Ochsner Baptist Medical Center, New Orleans
Ochsner Medical Center, Baton Rouge
Ochsner Medical Center, Kenner
Ochsner Medical Center, New Orleans
Ochsner Medical Center, Northshore, Slidell
Ochsner Medical Center, West Bank, Gretna
Touro Infirmary, New Orleans

Maryland
Adventist Rehabilitation Hospital of Maryland, Rockville
Anne Arundel Medical Center, Annapolis
Atlantic General Hospital, Berlin
Baltimore Washington Medical Center, Glen Burnie
Calvert Memorial Hospital, Prince Frederick
Carroll Hospital Center, Westminster
Chester River Hospital Center, Chestertown
Civista Medical Center, La Plata
Doctors Community Hospital, Lanham
Dorchester General Hospital, Cambridge
Fort Washington Medical Center, Fort Washington
Franklin Square Hospital Center, Baltimore
Frederick Memorial Healthcare System, Frederick
Good Samaritan Hospital, Baltimore
Greater Baltimore Medical Center, Baltimore Harbor Hospital, Baltimore
Harford Memorial Hospital, Havre de Grace
Holy Cross Hospital, Silver Spring
Howard County General Hospital, Columbia
Johns Hopkins Bayview Medical Center, Baltimore
Kernan Orthopedics and Rehabilitation, Gwynn Oak
Maryland General Hospital, Baltimore
Memorial Hospital Easton, Easton
Mercy Medical Center, Baltimore
Meritus Medical Center, Hagerstown
Montgomery General Hospital, Olney
Northwest Hospital, Randallstown
Peninsula Regional Medical Center, Salisbury
Prince George's Hospital, Cheverly
Saint Agnes Hospital, Baltimore
Shady Grove Adventist Hospital, Rockville
Sinai Hospital, Baltimore
Southern Maryland Hospital Center, Clinton
St. Joseph Medical Center, Towson
St. Mary's Hospital, Leonardtown
Suburban Hospital, Bethesda
The Johns Hopkins Hospital, Baltimore
Union Hospital of Cecil County, Elkton
Union Memorial Hospital, Baltimore
University of Maryland Medical Center, Baltimore
University Specialty Hospital, Baltimore
Upper Chesapeake Medical Center, Bel Air
Washington Adventist Hospital, Takoma Park
Western Maryland Regional Medical Center, Cumberland

Massachusetts
Baystate Medical Center, Springfield
Berkshire Medical Center, Pittsfield
Fairview Hospital, Great Barrington
Jordan Hospital, Plymouth
Marlborough Hospital, Marlborough
Melrose Wakefield Hospital, Melrose
Morton Hospital, Taunton
Mount Auburn Hospital, Cambridge
Noble Hospital, Westfield
Tufts Medical Center, Boston

Minnesota
Cuyuna Regional Medical Center, Crosby
Essential Health East Region, Duluth
Kanabec Hospital, Mora
Lakeview Hospital, Stillwater
Lakewood Hospital, Staples
LifeCare Medical Center, Roseau
Mayo Clinic, Rochester
Regina Medical Center, Hastings
Riverview Health, Crookston
Sleepy Eye Medical Center, Sleepy Eye
St. Cloud Hospital, St. Cloud
St. Joseph's Medical Center, Brainerd
Swift County-Benson Hospital, Benson

Missouri
Cass Regional Medical Center, Harrisonville
Heartland Regional Medical Center, St. Joseph
Hedrick Medical Center, Chillicothe
North Kansas City Hospital, North Kansas City
St. Joseph Medical Center, Kansas City
St. Luke's East Hospital, Lee's Summit
St. Luke's Hospital of Kansas City, Kansas City
St. Luke's Northland Hospital, Kansas City
St. Mary's Medical Center, Blue Springs
Truman Lakewood Hospital, Kansas City
Truman Medical Center Hospital Hill, Kansas City

Nebraska
Alegent Health Bergan Mercy, Omaha
Alegent Health Immanuel, Omaha
Alegent Health Lakeside, Omaha
Alegent Health Midlands, Papillion
Alegent Mercy, Council Bluffs
Faith Regional Health Services, Norfolk
Mary Lanning Memorial Hospital, Hastings
Saint Elizabeth Regional Health Center, Lincoln
The Nebraska Medical Center, Omaha

Nevada
Centennial Hills Hospital Medical Center, Las Vegas
Desert Springs Hospital Medical Center, Las Vegas
Desert View Hospital, Pahrump
HealthSouth Tenaya, Las Vegas
Horizon Specialty, Las Vegas
North Vista Hospital, North Las Vegas
Northern Nevada Medical Center, Sparks
Nye Regional Medical Center, Tonopah
Renown Regional, Reno
Renown South Meadows, Reno
Saint Mary's Regional Medical Center, Reno
Southern Hills Hospital and Medical Center, Las Vegas
Spring Valley Hospital Medical Center, Las Vegas
Summerlin Hospital Medical Center, Las Vegas
Sunrise Hospital, Las Vegas
University Medical Center, Las Vegas
Valleyst Hospital Medical Center, Las Vegas

New Hampshire
Catholic Medical Center, Manchester
Concord Hospital, Concord
Dartmouth Hitchcock Medical Center, Lebanon
Elliot Hospital, Manchester
LRGHealthcare – Franklin, Franklin
LRGHealthcare – Lakes Region General Hospital, Laconia
Parkland Medical Center, Derry
Southern NH Medical Center, Nashua
St. Joseph Hospital, Nashua

New Jersey
AtlantiCare Regional Medical Center, Atlantic City
Atlanticare Regional Medical Center Mainland Division, Pomona
Bayonne Medical Center, Bayonne
Cape Regional Medical Center, Cape May Court House
CentraState Medical Center, Freehold
Clara Maass Medical Center, Belleville
Community Medical Center, Toms River
East Orange General Hospital, East Orange
Elmer Hospital, Elmer
Hackensack University Medical Center, Hackensack
Hoboken University Medical Center, Hoboken
Holy Name Hospital, Teaneck
Hunterdon Medical Center, Flemington
Jersey Shore University Medical Center, East Neptune
JFK Medical Center, Edison
Kimball Medical Center, Lakewood
Lourdes Medical Center Burlington County, Willingboro
Memorial Hospital of Salem County, Salem
Monmouth Medical Center, Long Beach
Morristown Memorial Hospital, Morristown
Mountainside Hospital, Montclair
Newark Beth Israel Medical Center, Newark
Ocean Medical Center, Brick
Our Lady of Lourdes Medical Center, Camden
Overlook Hospital, Summit
Palisades Medical Center, North Bergen
Riverview Medical Center, Red Bank
Robert Wood Johnson University Hospital, New Brunswick
Saint Barnabas Medical Center, Livingston
St. Clare’s Hospital, Denville, Denville
Shore Memorial Hospital, Somers Point
Somerset Medical Center, Somerville
South Jersey Regional Medical Center Facility, Vineland
St. Francis Medical Center, Trenton
The Valley Hospital, Ridgewood
Trinitas Regional Medical Center, Elizabeth
Underwood Memorial Hospital, Woodbury
University Medical Center, Princeton
Virtua Marlton, Marlton
Virtua Voorhees, Voorhees
Warren Hospital, Phillipsburg

New York

Beth Israel Medical Center Kings Highway Division, Brooklyn

Beth Israel Medical Center Milton and Carroll Petrie Division, New York
Oneida Healthcare Center, Oneida
Phelps Memorial Hospital, Sleepy Hollow
Seton Health St. Mary’s Hospital, Troy
St. Francis Hospital, The Heart Center, Roslyn
St. John’s Episcopal Hospital, Far Rockaway
St. Luke’s Roosevelt Hospital Center, Roosevelt, Dobbs Ferry
St. Luke’s Roosevelt Hospital Center, St. Luke’s, New York
St. Mary’s Hospital, Amsterdam

North Carolina

Annie Penn Hospital, Reidsville
Brunswick Community Hospital, Supply
Cape Fear Valley Medical Center, Fayetteville
Carteret County General Hospital, Morehead City
Catawba Valley Medical Center, Hickory
Duke Raleigh Hospital, Raleigh
Duke University Hospital, Durham
Durham Regional Hospital, Durham
FirstHealth Moore Regional Hospital, Pinehurst
Forsyth Medical Center, Winston-Salem
Gaston Memorial Hospital, Gastonia
Granville Medical Center, Oxford
Haywood Regional Medical Center, Clyde
Lake Norman Regional Medical Center, Mooresville
The Moses Cone Memorial Hospital, Greensboro
Onslow Memorial Hospital, Jacksonville
Pitt County Memorial Hospital, Greenville
Presbyterian Hospital, Charlotte
Presbyterian Hospital Huntersville, Huntersville
Presbyterian Hospital Matthews, Matthews
Rex Healthcare, Raleigh
Rowan Regional Medical Center, Salisbury
Sampson Regional Medical Center, Clinton
Thomasville Medical Center, Thomasville
Ohio has 57 hospitals participating in the Stop BSI project.

Oklahoma

Comanche County Memorial Hospital, Lawton
Duncan Regional Hospital, Duncan
Eastern Oklahoma Medical Center, Poteau
Great Plains Regional Medical Center, Elk City
Integris Grove Hospital, Grove
McCurtain System Hospital, Idabel
Memorial Hospital of Texas County, Guymon
Mercy Health Center, Oklahoma City
Mercy Memorial Health Center, Ardmore
St. Anthony, Oklahoma City
Tahlequah City Hospital, Tahlequah
Unity Health Center, Shawnee
Valley View Regional Hospital, Ada

Oregon

Bay Area Hospital, Coos Bay
Columbia Memorial Hospital, Astoria
Good Samaritan Regional Medical Center, Corvallis
Mountain View Hospital, Madras
Oregon Health and Sciences University, Portland
Providence Portland Medical Center, Portland
Sky Lakes Medical Center, Klamath Falls
St. Anthony Hospital, Pendleton

Pennsylvania

Albert Einstein, Philadelphia
Alfred I. DuPont Hospital for Children/Thomas Jefferson University, Philadelphia
Allegheny General Hospital, West Penn
Allegheny Health System, Pittsburgh
Altoona Regional Medical Center, Altoona
Aria Health, Philadelphia
Bradford Regional Medical Center, Bradford
Bryn Mawr Hospital, Bryn Mawr
Cancer Treatment Center of America, Philadelphia
Crozer Chester Medical Center, Upland
Delaware County Memorial, Drexel Hill
Geisinger Medical Center, Danville
Geisinger Wyoming Valley, Wilkes Barre
Hazelton General Hospital, Hazelton
Holy Spirit Hospital, Camp Hill
Lancaster General Hospital, Lancaster
Mercy Fitzgerald Hospital, Darby
Methodist Hosp-Thomas Jefferson, Philadelphia
Mid-Valley Hospital, Peckville
Monongahela Valley Hospital, Monongahela
Moses Taylor, Scranton
Mt. Nittany Medical Center, State College
Paoli Hospital, Paoli
Punxsutawney Area Hospital, Punxsutawney
Robert Packer Hospital, Guthrie Health System, Sayre
Saint Joseph’s Hospital, Philadelphia
Somerset Hospital, Somerset
The Children’s Institute, Pittsburgh
Thomas Jefferson University Hospital, Philadelphia
University of Pittsburgh Medical Center, Pittsburgh
Wayne Memorial Hospital, Honesdale
Westmoreland Hospital, Greensburg
Williamsport Regional Hospital, Williamsport

South Carolina

Beaufort Memorial Hospital, Beaufort
Bon Secours St. Francis Hospital, Charleston
Bon Secours St. Francis Hospital, Greenville  
Georgetown Memorial, Georgetown  
Greenville Memorial Hospital, Greenville  
Hilton Head Hospital, Hilton Head  
Kershaw Health, Camden  
Mary Black Health System, Spartanburg  
McLeod Regional Medical Center, Florence  
McLeod Regional Medical Center, Dillon  
Medical University of South Carolina Medical Center, Charleston  
Oconee Medical Center, Seneca  
Palmetto Health Baptist, Columbia  
Palmetto Health Richland, Columbia  
Piedmont Medical Center, Rockhill  
Providence Hospital, Columbia  
Roper Hospital, Charleston  
Spartanburg Hospital for Restorative Care, Spartanburg  
Spartanburg Regional Medical Center, Spartanburg  
The Regional Medical Center of Orangeburg and Calhoun Counties, Orangeburg  
Trident Health System, Charleston  
Tuomey Healthcare System, Sumter  
Upstate Carolina Medical Center, Gaffney  
Waccamaw Community Hospital, Murrells Inlet  

South Dakota  
Avera McKennan Hospital and University Health Center, Sioux Falls  
Avera Sacred Heart Health Services, Yankton  
Sanford USD Medical Center, Sioux Falls  
Sanford USD Medical Center, Sioux Falls  
Sanford Vermillion Medical Center, Vermillion  
St. Mary's Hospital, Pierre  

Tennessee  
Athens Regional Medical Center, Athens  
Baptist Hospital, Inc., Nashville  
Baptist Memorial Hospital, Collierville, Collierville  
Baptist Memorial Hospital, Huntingdon, Huntingdon  
Baptist Memorial Hospital, Memphis, Memphis  
Baptist Memorial Hospital for Women, Memphis  
Baptist Memorial Restorative Care Hosp, Memphis  
Blount Memorial Hospital, Maryville  
Centennial Medical Center, Nashville  
Cookeville Regional Medical Center, Cookeville  
Crockett Hospital, Lawrenceburg  
Cumberland Medical Center, Crossville  
Delta Medical Center, Memphis  
Dyersburg Regional Medical Center, Dyersburg  
East Tennessee Children's Hospital, Knoxville  
Erlanger Health System, Chattanooga  
Fort Sanders Regional Medical Center, Knoxville  
Hendersonville Medical Center, Hendersonville  
Henry County Medical Center, Paris  
Hillside Hospital, Pulaski  
Horizon Medical Center, Dickson  
Indian Path Medical Center, Kingsport  
Jackson-Madison County General Hospital, Jackson  
Johnson City Medical Center, Johnson City  
LeBonheur Children's Hospital, Memphis  
Maury Regional Medical Center, Columbia  
Memorial Healthcare System, Chattanooga  
Memorial North Park, Hixson  
Mercy Medical Center North, Powell  
Mercy Medical Center West, Knoxville  
Mercy Medical Center St. Mary's, Knoxville  
Methodist LeBonheur Children's Medical Center, Memphis  
Methodist LeBonheur Germantown Hospital, Germantown  
Methodist North Hospital, Memphis  
Methodist South Hospital, Memphis  
Methodist University Hospital, Memphis
Middle Tennessee Medical Center, Murfreesboro
Morristown-Hamblen Healthcare System, Morristown
Nashville General Hospital, Nashville
NorthCrest Medical Center, Springfield
Parkridge East Hospital, Chattanooga
Parkridge Medical Center, Chattanooga
Parkwest Medical Center
Regional Medical Center at Memphis, Memphis
River Park Hospital, McMinnville
Roane Medical Center, Harriman
Skyline Medical Center, Nashville
SkyRidge Medical Center, Cleveland
Southern Hills Medical Center, Nashville
St. Francis Hospital, Memphis
St. Francis Hospital, Bartlett, Bartlett
St. Mary's Jefferson Memorial Hospital, Jefferson City
St. Mary's Medical Center of Campbell County, La Follette
St. Thomas Hospital, Nashville
StoneCrest Medical Center, Smyrna
Summit Medical Center, Hermitage
Sumner Regional Medical Center, Gallatin
Sycamore Shoals Hospital, Elizabethton
Takoma Regional Medical Center, Greeneville
University Medical Center, Lebanon
University of Tennessee Medical Center, Knoxville
Vanderbilt University Hospital, Nashville
Wellmont Bristol Regional Medical Center, Bristol
Wellmont Holston Valley Medical Center, Kingsport
Williamson Medical Center, Franklin
Woods Memorial Hospital, Etowah

Texas
Baptist Hospitals of Southeast Texas, Beaumont
Baptist St. Anthony's, Amarillo

Ben Taub, Beaumont
Brownwood Regional Medical Center, Brownwood
CHRISTUS Santa Rosa Hospital, Westover Hills
CHRISTUS Santa Rosa Hospital, New Braunfels
CHRISTUS Santa Rosa Hospital, City Centre, San Antonio
Covenant Medical Center, Lubbock
Doctor's Hospital of Laredo, Laredo
Edinburg Regional Medical Center, Edinburg
Fort Duncan Regional Medical Center, Eagle Pass
Good Shepherd Medical Center, Longview
Hendrick Medical Center, Abilene
Hill Country Memorial, Fredericksburg
Hillcrest Baptist Medical Center, Waco
LBJ Hospital, Houston
McAllen Heart Hospital, McAllen
McAllen Medical Center, McAllen
Medical Center Hospital, Odessa
Methodist Specialty and Transplant Hospital, San Antonio
Metropolitan Methodist Hospital, San Antonio
Mother Frances Hospital Regional Health Care Center, Tyler
Parkland Health and Hospital System, Dallas
Peterson Regional Medical Center, Kerrville
Scott and White Children's Hospital, Temple
Texoma Medical Center, Denison
The Heart Hospital Baylor Plano, Plano
United Regional Health Care System, Wichita Falls
University Health System, San Antonio
University of Texas Southwestern University Hospital, St. Paul, Dallas
University of Texas Southwestern University Hospital-Zale Lipshy, Dallas

Virginia
Augusta Medical Center, Fishersville
Clinch Valley Medical Center, Richlands
Community Memorial Health Center, South Hill
Inova Alexandria Hospital, Alexandria
Inova Fairfax Hospital, Falls Church
Inova Loudoun Hospital, Leesburg
Inova Mount Vernon Hospital, Alexandria
Mary Washington Hospital, Fredericksburg
Medical College of Virginia Hospital of Virginia Commonwealth University Medical Center, Richmond
Prince William Hospital, Manassas
Roanoke Memorial Hospital, Roanoke
Sentara Bayside Hospital, Virginia Beach
Sentara Careplex Hospital, Hampton
Sentara Norfolk General Hospital, Norfolk
Sentara Obici Hospital, Suffolk
Sentara Potomac Hospital, Woodbridge
Sentara Virginia Beach Hospital, Virginia Beach
Shenandoah Memorial Hospital, Luray
The Fauquier Hospital, Warrenton
Twin County Regional Hospital, Galax
University of Virginia, Charlottesville
Virginia Hospital Center-Arlington, Arlington

Washington State

Washington State has 45 hospitals participating in the Stop BSI project.

West Virginia

Bluefield Regional Medical Center, Bluefield
Cabell Huntington Hospital, Huntington
Camden-Clark Memorial Hospital, Parkersburg
Charleston Area Medical Center, Charleston
Davis Memorial Hospital, Elkins
Fairmont General Hospital, Fairmont
Logan Regional Medical Center, Logan
Monongalia General Hospital, Morgantown
Ohio Valley Medical Center, Wheeling
Princeton Community Hospital, Princeton
Raleigh General Hospital, Beckley
Reynolds Memorial Hospital, Glen Dale
Saint Francis Hospital, Charleston
St. Joseph's Hospital, Parkersburg, Parkersburg
St. Mary's Medical Center, Huntington
Thomas Memorial Hospital, South Charleston
United Hospital Center, Bridgeport
West Virginia University Hospitals, Morgantown
Wetzel County Hospital, New Martinsville
Wheeling Hospital, Wheeling

Wisconsin

Aurora Bay Care Medical Center, Green Bay
Aurora Lakeland Medical Center, Elkhorn
Aurora Medical Center, Oshkosh, Oshkosh
Aurora Medical Center Kenosha, Kenosha
Aurora Medical Center Manitowoc County, Two Rivers
Aurora Medical Center Summit, Summit
Aurora Medical Center Washington County, Hartford
Aurora Memorial Hospital of Burlington, Burlington
Aurora Sheboygan Memorial Medical Center, Sheboygan
Aurora Sinai Medical Center, Milwaukee
Aurora St. Luke's Medical Center, Milwaukee
Aurora St. Luke's South Shore, Cudahy
Aurora West Allis Medical Center, West Allis
Beloit Memorial Hospital, Beloit
Grant Regional Health Center, Lancaster
Holy Family Memorial Medical Center, Manitowoc
Kindred Hospital Milwaukee, Greenfield
Mercy Medical Center, Oshkosh
Meriter Hospital, Madison
Ministry Saint Joseph's Hospital, Marshfield
Ministry Saint Michael's Hospital, Stevens Point
Ministry Saint Clare's Hospital, Weston
Monroe Clinic, Monroe
Oconomowoc Memorial Hospital, Oconomowoc
Sacred Heart Hospital, Eau Claire
Sauk Prairie Memorial Hospital, Prairie du Sac
St. Clare Hospital and Health Services, Baraboo
St. Elizabeth Hospital, Appleton
St. Joseph's Hospital, Chippewa Falls
St. Mary's Hospital Medical Center, Green Bay
St. Nicholas Hospital, Sheboygan
St. Vincent Hospital, Green Bay
Stoughton Hospital, Stoughton
University of Wisconsin Hospitals and Clinics, Madison
Upland Hills Health, Dodgeville
Vernon Memorial Healthcare, Viroqua
Waukesha Memorial Hospital, Waukesha
Wheaton Franciscan Healthcare, Franklin
Wheaton Franciscan Healthcare St. Francis, Milwaukee