Overview and Table of Contents

The CSTE/CDC Healthcare-Associated Infection (HAI) Data Analysis and Presentation Standardization (DAPS) Workgroup (hereafter referred to as “the workgroup”) is charged with identifying and recommending specific methods for analyzing and reporting HAI data when those data are publicly disclosed. The workgroup’s discussions and decisions are guided by a common understanding that publicly reported HAI data at a minimum should meet the needs of two key audiences: healthcare consumers (e.g., patients and their families) and healthcare/public health professionals. Further, as guiding principles, the same HAI data can serve multiple purposes, and differences in data uses and user groups should inform decisions about how best to analyze and present the data. Fundamental differences in user group expectations include the granularity of results, extent of technical information, and type of explanatory notes they seek from public reports of HAI data. In operational terms, the workgroup translated these guiding principles into an overarching recommendation: State HAI programs and other organizations publishing HAI measures and data analyses should produce distinct reports for healthcare consumers and healthcare/public health professionals. More specific recommendations for methods and data presentation styles tailored to each audience are outlined below:

(1) A consumer-friendly HAI report that presents data in a high-level summary form and uses plain language to reduce the cognitive burden of consuming HAI information that would otherwise poses challenges to individuals without a clinical or public health background. The healthcare consumer audience includes members of the general public, the media, legislators, and others with limited or no prior knowledge of HAI data. The purpose of this consumer report is to provide sufficient HAI information in an understandable way that will enable consumers to view facility-specific HAI performance and make informed decisions about selecting healthcare from the available options. Overall state HAI performance also will be of interest to legislators, policy researchers, media personnel, and others. Consumers who are more “data savvy” or wish to have more information should be directed to the technical HAI report.

(2) A technical report tailored to healthcare providers and those with HAI subject matter expertise and/or epidemiologic methods. This audience may also include clinicians, administrators, public health professionals, biostatisticians, and others. This report can include more advanced statistics and data presentation strategies as compared to the consumer-friendly report. The purpose of the technical report is to provide sufficient HAI information in an understandable way to enable healthcare providers and public health professionals to view facility-specific HAI performance, evaluate interventions to drive change within a facility, understand the entire state’s HAI performance as a whole, and/or to compare a facility’s HAI experience to that of the rest of the country.
The workgroup recognizes that some states have legal requirements for how they must analyze and/or present HAI data. This toolkit should serve as recommended best practices in the display and communication of HAI data analyses, for both consumers and providers, to be implemented by a state health department or other organizations that publicly report HAI data, to the extent possible. Establishing and maintaining standards across states and organizations that report these data will improve the consistency and usability of this information.

HAI report authors are encouraged to review each toolkit component listed below for specific examples of how (and why) to tailor the report to its intended audience, and to view sample templates of HAI data display for both a consumer and healthcare provider audience.

**Toolkit Table of Contents**

The following sections of this toolkit outline the recommendations of the CSTE/CDC HAI Data Analysis and Presentation Standardization Workgroup.

- **Toolkit Introduction:** Includes a history and a description of the process for creating this toolkit. Also includes a summary of relevant literature, prior research in the area of public reporting of hospital quality data, and examples of recent state efforts to address the needs of a consumer and technical audiences.

- **Methods for Composing HAI Reports:** Provides sample text and descriptive elements to include in a methods section of an HAI public report. Also provides guidance on the recommended methods for analyzing HAI data.

- **Template Report for Consumers:** Provides example explanatory text and educational materials for an HAI report tailored to healthcare consumers.

- **Template Report for Providers:** Provides example text and educational materials for an HAI report tailored to a technical audience (e.g., healthcare providers and other public health professionals).

- **Other Considerations:** Provides background on the toolkit workgroup’s decision-making processes, additional display and analytic considerations, and an overview of the Maryland focus groups that helped offer a consumer perspective during the toolkit creation process.

- **Data Tables:** Provides template tables for displaying HAI or healthcare worker influenza vaccination summary data as well as infection-specific HAI tables tailored to a consumer or technical audience.

The infection tables display HAI data from two device-associated HAIs (central line-associated bloodstream infections and catheter-associated urinary tract infections), one procedure-associated HAI (surgical site infections), and two
laboratory-identified (LabID) event measures (methicillin-resistant *Staphylococcus aureus* bacteremia and *Clostridium difficile*). These sample template reports will present HAI data using standardized infection ratios (SIRs), comparing the facility’s observed number of infections to the predicted number based on the NHSN national baselines (however, please note that guidance is provided in the “Methods for Composing HAI Reports” chapter of the toolkit for the analysis of HAI infection rates).

- **Infection Summary Table**
- **Infection Tables for Consumer Report**
- **Infection Tables for Technical Report**
- **Summary Data Table for Hospital Process Measures**
- **Healthcare Worker Influenza Vaccination Summary Table**

- **Technical Resources:** Includes example SAS code, image files, and other materials needed to implement the recommendations in the toolkit.
  - **SAS code**
    - Infection Summary Table
    - Consumer Report
    - Technical Report
    - Healthcare Worker Influenza Vaccination Summary Table and Summary Data Table for Hospital Process Measures
  - **Sample output from SAS code**
    - Infection Summary Table
    - Consumer Report
    - Technical Report
    - Summary Data Table for Hospital Process Measures
    - Healthcare Worker Influenza Vaccination Summary Table
  - **Image files**
    - Catheter-associated urinary tract infection ([PNG image](#)) ([PNG image with text](#)) ([scalable Adobe Illustrator file with text](#))
    - Central line-associated bloodstream infection ([PNG image](#)) ([PNG image with text](#)) ([scalable Adobe Illustrator file with text](#))
    - Surgical site infection ([PNG image](#))

- **Report Dissemination Strategies:** Includes suggestions on methods to publicize HAI reports and things to consider when working with the media on report releases.

- **Toolkit Conclusions:** Describes concluding thoughts on toolkit implementation and needs for future research in the field.

- **Toolkit Evaluation**

- **Workgroup Members and Acknowledgments**
• **CSTE Position Statement: Data Analysis and Presentation Standardization Toolkit (13-ID-02)**

• **References**