HOSPITAL SURVEY ON PATIENT SAFETY CULTURE

2016 User Comparative Database Report

AHRQ
Agency for Healthcare Research and Quality
PATIENT SAFETY

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Hospital Survey on Patient Safety Culture: 2016 User Comparative Database Report

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Executive Summary

In response to requests from hospitals interested in comparing their results with those of other hospitals on the *Hospital Survey on Patient Safety Culture*, the Agency for Healthcare Research and Quality (AHRQ) established the Hospital Survey on Patient Safety Culture comparative database. The first user comparative database report, released in 2007, included data from 382 U.S. hospitals.

The 2016 user comparative database report displays results from 680 hospitals and 447,584 hospital staff respondents. This report also includes a chapter on trending that presents results showing change over time for 326 hospitals that administered the survey and submitted data more than once.

From 2007 to 2012, data were collected annually. Data from past databases were retained until more recent data were submitted and as long as the data were no more than 4.5 years old. Starting with the 2014 database, survey data are collected every 2 years and may only be up to 2 years old. Hospitals must submit their survey data to consecutive databases in order to trend their results over time. Only hospitals that successively submit survey data will be included in trending analysis.

This user comparative database report was developed as a tool for the following purposes:

- ***Comparison***—To allow hospitals to compare their patient safety culture survey results with those of other hospitals.
- ***Assessment and Learning***—To provide data to hospitals to facilitate internal assessment and learning in the patient safety improvement process.
- ***Supplemental Information***—To provide supplemental information to help hospitals identify their strengths and areas with potential for improvement in patient safety culture.
- ***Trending***—To provide data that describe changes in patient safety culture over time.

Survey Content

The hospital survey, released in November 2004, was designed to assess hospital staff opinions about patient safety issues, medical errors, and event reporting. The survey includes 42 items that measure 12 areas, or composites, of patient safety culture:

1. Communication openness.
2. Feedback and communication about error.
3. Frequency of events reported.
4. Handoffs and transitions.
5. Management support for patient safety.
6. Nonpunitive response to error.
7. Organizational learning—continuous improvement.
8. Overall perceptions of patient safety.
9. Staffing.
10. Supervisor/manager expectations and actions promoting safety.
11. Teamwork across units.
12. Teamwork within units.

The survey also includes two questions that ask respondents to provide an overall grade on patient safety for their work area/unit and to indicate the number of events they reported over the past 12 months.

2016 Survey Administration Statistics

- A total of 680 hospitals submitted data for the 2016 report.
- The average hospital response rate was 55 percent, with an average of 658 completed surveys per hospital.
- Most hospitals (78 percent) administered Web surveys, which resulted in lower response rates (54 percent) compared with response rates from paper (71 percent); hospitals that administered surveys by mixed mode had response rates similar to Web-only administration (55 percent).

Hospital Characteristics

- Most of the database hospitals (64 percent) have at least 100 beds.
- Database hospitals represented all geographic regions in the United States.
- Most database hospitals are nonteaching (62 percent) and are nongovernment not for profit (79 percent).
- Children's hospitals represent 7 percent of database hospitals.
- Characteristics of database hospitals are fairly consistent with the distribution of hospitals registered with the American Hospital Association.

Respondent Characteristics

- There were 447,584 hospital staff respondents.
- The top three respondent work areas were:
    - Other (29 percent).[i]
    - Medicine (12 percent).
    - Surgery (10 percent).
- The top three respondent staff positions were:
    - Registered nurse or licensed vocational nurse/licensed practical nurse (36 percent).
    - Other (21 percent).[ii]
    - Technician (e.g., EKG, Lab, Radiology) (11 percent).
- Most respondents (77 percent) indicated they had direct interaction with patients.
- More than half of the respondents (56 percent) indicated they had worked with their current hospital at least 6 years. Similarly, almost half of the respondents (47 percent) indicated they had worked in their current work area/unit at least 6 years.
- Most respondents worked either less than 40 hours a week (46 percent) or 40 to 59 hours per week (47 percent).

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[i] Many respondents chose "Other," which allowed them to note their specific work area or unit. However, this information was not collected from the hospitals.

[ii] Many respondents chose "Other," which allowed them to note their staff position. However, this information was not collected from the hospitals.

Areas of Strength for Most Hospitals

The three areas of strength or composites with the highest average percent positive responses were[iii]:

1. ***Teamwork Within Units (82 percent positive)***—Staff support each other, treat each other with respect, and work together as a team.
2. ***Supervisor/Manager Expectations and Actions Promoting Patient Safety (78 percent positive)***—Supervisors/managers consider staff suggestions for improving patient safety, praise staff for following patient safety procedures, and do not overlook patient safety problems.
3. ***Organizational Learning—Continuous Improvement (73 percent positive)***—Mistakes have led to positive changes and changes are evaluated for effectiveness.

Areas With Potential for Improvement for Most Hospitals

The three areas that showed potential for improvement or with the lowest average percent positive responses were:

1. ***Nonpunitive Response to Error (45 percent positive)***—Staff feel that their mistakes and event reports are not held against them and that mistakes are not kept in their personnel file.
2. ***Handoffs and Transitions (48 percent positive)***—Important patient care information is transferred across hospital units and during shift changes.
3. ***Staffing (54 percent positive)***—There are enough staff to handle the workload and work hours are appropriate to provide the best care for patients.

Results by Hospital Characteristics

Bed Size

- Smaller hospitals (*6–24 beds* and *25–49 beds*) had the highest percent positive for the average across all composites (69 percent); larger hospitals (*300–399 beds*) had the lowest (61 percent).
- Hospitals with *25–49* beds had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (83 percent); hospitals with *300–399* beds and *400–499* beds had the lowest (70 percent).

Teaching Status and Ownership

- *Nonteaching* hospitals, on average, scored higher than *teaching* hospitals by 5 percentage points or more on Overall Perceptions of Patient Safety, Staffing, and Handoffs and Transitions.
- *Nonteaching* hospitals had a higher percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (78 percent) than *teaching* hospitals (73 percent).

[iii] Percent positive is the percentage of positive responses (e.g., Agree, Strongly agree) to positively worded items (e.g., "People support one another in this unit") or negative responses (e.g., Disagree, Strongly disagree) to negatively worded items (e.g., "We have safety problems in this unit").

- Overall, hospitals did not have large differences across ownership categories on the 12 composites, patient safety grade, or number of events reported.

Geographic Region

- *East South Central*[iv] hospitals had the highest percent positive for the average across all composites (68 percent); *New England* and *Mid-Atlantic* hospitals had the lowest (61 percent).
- *West North Central* hospitals had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (79 percent); *Mid-Atlantic* hospitals had the lowest (70 percent).
- *Pacific* hospitals had the highest percentage of respondents who reported one or more events in the past year (50 percent); *West South Central* hospitals had the lowest (39 percent).

Children's Hospitals

- Children's hospitals and non-children's hospitals did not have large differences on the 12 composites, patient safety grade, or number of events reported.

Results by Respondent Characteristics

Work Area/Unit

- Respondents in *Rehabilitation* had the highest percent positive response for the average across the composites (71 percent positive); *Emergency* had the lowest (59 percent positive).
- *Rehabilitation* had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (86 percent); *Emergency* had the lowest (65 percent).
- *ICU (Any Type)* had the highest percentage of respondents reporting one or more events in the past year (62 percent); *Rehabilitation* had the lowest (39 percent).

Staff Position

- Respondents in *Administration/Management* had the highest percent positive response for the average across the composites (76 percent positive); *RN/LVN/LPN* had the lowest (63 percent positive).

[iv] States and territories are categorized into American Hospital Association (AHA)-defined regions as follows:

- New England: CT, MA, ME, NH, RI, VT
- Mid-Atlantic: NJ, NY, PA
- South Atlantic/Associated Territories: DC, DE, FL, GA, MD, NC, SC, VA, WV, Puerto Rico, Virgin Islands
- East North Central: IL, IN, MI, OH, WI
- East South Central: AL, KY, MS, TN
- West North Central: IA, KS, MN, MO, ND, NE, SD
- West South Central: AR, LA, OK, TX
- Mountain: AZ, CO, ID, MT, NM, NV, UT, WY
- Pacific/Associated Territories: AK, CA, HI, OR, WA, American Samoa, Guam, Marshall Islands, Northern Mariana Islands

- *Administration/Management* had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (89 percent); *RN/LVN/LPN* had the lowest (71 percent).
- *Pharmacists* had the highest percentage of respondents reporting one or more events in the past year (77 percent); *Unit Assistants/Clerks/Secretaries* had the lowest (17 percent).

Interaction With Patients

- Respondents *with* direct patient interaction were more positive than those *without* direct interaction on *Handoffs and Transitions* (49 percent compared with 43 percent) but less positive on *Management Support for Patient Safety* (71 percent compared with 79 percent) and *Feedback and Communication About Error* (67 percent compared with 72 percent).
- Respondents *without* direct patient interaction had a higher percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (81 percent) than respondents *with* direct patient interaction (75 percent).
- More respondents *with* direct patient interaction reported one or more events in the past year (49 percent) than respondents *without* direct patient interaction (31 percent).

Tenure in Current Work Area/Unit

- Respondents with *less than 1 year* in their current work area/unit had the highest percent positive response for the average across the composites (69 percent); respondents with *6 to 10 years* had the lowest (63 percent).
- Respondents with *less than 1 year* in their current work area/unit had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (82 percent); respondents with *6 to 10 years* had the lowest (74 percent).
- Respondents with *6 to 10 years*, *11 to 15 years*, and *21 years or more* in their current work area/unit had the highest percentage of respondents reporting one or more events in the past year (48 percent each); respondents with less than 1 year had the lowest (31 percent).

Trending: Comparing Results Over Time

Results below describe changes over time on the patient safety culture composites, patient safety grade, and number of events reported for the 326 hospitals (of the 680 total database hospitals) that administered the survey and submitted data to both the 2014 and 2016 databases.

Trending Hospitals

- Across the 326 trending hospitals, the average percent positive scores across the 12 patient safety culture composites increased by 1 percentage point (ranging across the composites from a change of -2 to a change of 3 percentage points).
- Of those hospitals that increased on Patient Safety Grade, scores for "Excellent" or "Very Good" increased on average 6 percent.
- For hospitals with increases in the number of respondents who reported at least one event in the past 12 months, the average increase was 5 percent.

Additional Trending Statistics

The charts in Chapter 7 provide results for two additional ways of summarizing changes in patient safety composite scores over time. The first series of charts displays the number of hospitals that increased, decreased, or did not change by 5 percentage points or more for each composite, patient safety grade, and number of events reported. The second set of charts displays the distribution of trending hospitals by number of composites that increased, decreased, or changed less than 5 percentage points.

Trending Results by Hospital Characteristics

Bed Size

- Hospitals with *6–24* beds increased on all 12 of the patient safety culture composites; increases ranged from 4 to 11 percentage points.
- Hospitals with *6–24* beds had the greatest increase in the percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (a 5 percentage point increase, from 81 percent to 86 percent).

Teaching Status and Ownership

- Both *teaching* and *nonteaching* hospitals showed the largest increase (3 percentage points) on *Supervisor/Manager Expectations and Actions Promoting Patient Safety*.
- *Nongovernment-owned* hospitals showed the largest increase (3 percentage points) on *Supervisor/Manager Expectations and Actions Promoting Patient Safety*. *Government-owned* hospitals' largest increase was 2 percentage points on the same composite.

Geographic Region

- *West Central* region hospitals increased 8 percentage points on *Nonpunitive Response to Error* and 5 percentage points on *Overall Perceptions of Safety*.
- *West Central* region hospitals had the greatest increase of respondents who gave their work area/unit a patient safety grade of "Excellent" (a 3 percentage point increase, from 76 percent to 79 percent).

Trending Results by Respondent Characteristics

Work Area/Unit

- *Surgery* increased 4 percentage points on *Supervi*sor/*Manager Expectations and Actions Promoting Patient Safety*.
- *Anesthesiology* increased 3 percentage points in the percentage of respondents reporting one or more events in the past year.

Staff Position

- Attending/staff physician, resident physician/physician in training, or physician assistant/nurse practitioner increased 6 percentage points on *Supervisor/Manager Expectations and Actions Promoting Patient Safety*.
- *Dietitians* increased 5 percentage points on the percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good."

Interaction With Patients

- Respondents *with* direct interaction and *without* direct interaction with patients increased 3 percentage points on *Supervi*sor/*Manager Expectations and Actions Promoting Patient Safety*.

Tenure in Work Area/Unit

- Respondents with *1 to 5 years* in their work area/unit increased 3 percentage points on *Nonpunitive Response to Error* and *Supervi*sor/*Manager Expectations and Actions Promoting Patient Safety*.
- Respondents with *11 to 15 years* in their work area/unit also increased 3 percentage points on *Supervi*sor/*Manager Expectations and Actions Promoting Patient Safety*.

Action Planning for Improvement

The delivery of survey results is not the *end point* in the survey process; it is just the *beginning*. Often, the perceived failure of surveys to create lasting change is actually due to faulty or nonexistent action planning or survey followup. The Action Planning Tool for the AHRQ Surveys on Patient Safety Culture can help in the improvement process and is available at http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/planningtool.html.

Seven steps of action planning are provided to give hospitals guidance on next steps to take to turn their survey results into actual patient safety culture improvement:

1. Understand your survey results.
2. Communicate and discuss the survey results.
3. Develop focused action plans.
4. Communicate action plans and deliverables.
5. Implement action plans.
6. Track progress and evaluate impact.
7. Share what works.

Purpose and Use of This Report

In response to requests from hospitals interested in comparing their results with those of other hospitals on the *Hospital Survey on Patient Safety Culture,* the Agency for Healthcare Research and Quality (AHRQ) established the *Hospital Survey on Patient Safety Culture* comparative database. Since the first comparative database report, which was released in 2007 and included data from 382 U.S. hospitals, the number of hospitals and respondents contributing to the database report has grown.

The *Hospital Survey on Patient Safety Culture 2016 User Comparative Database Report* consists of data from 680 hospitals and 447,584 hospital staff respondents.

This user comparative database report was developed as a tool for the following purposes:

- ***Comparison***—To allow hospitals to compare their patient safety culture survey results with those of other hospitals.
- ***Assessment and Learning***—To provide data to hospitals to facilitate internal assessment and learning in the patient safety improvement process.
- ***Supplemental Information***—To provide supplemental information to help hospitals identify their strengths and areas with potential for improvement in patient safety culture.
- ***Trending***—To provide data that describe changes in patient safety culture over time.

The report presents statistics (averages, standard deviations, minimum and maximum scores, and percentiles) on the patient safety culture composites and items from the survey. This report also includes a trending chapter that describes patient safety culture change over time for 326 hospitals that submitted data to both the 2014 and 2016 databases.

This report also includes four appendixes:

- Appendix A presents overall results by *hospital characteristics* (bed size, teaching status, ownership, geographic region, and children's hospitals).
- Appendix B presents overall results by *respondent characteristics* (hospital work area/unit, staff position, interaction with patients, and tenure in work area/unit).
- Appendix C presents results for the 326 trending hospitals by *hospital characteristics* (bed size, teaching status, ownership, and geographic region).
- Appendix D presents results for the 326 trending hospitals by *respondent characteristics* (hospital work area/unit, staff position, interaction with patients, and tenure in work area/unit).

Chapter 1. Introduction

Patient safety is a critical component of health care quality. As health care organizations continually strive to improve, there is growing recognition of the importance of establishing a culture of patient safety. Achieving a culture of patient safety requires an understanding of the values, beliefs, and norms about what is important in an organization and what attitudes and behaviors related to patient safety are supported, rewarded, and expected.

Survey Content

The Agency for Healthcare Research and Quality (AHRQ) funded and supervised development of the *Hospital Survey on Patient Safety Culture*. Developers reviewed research pertaining to safety, patient safety, error and accidents, and error reporting. They also examined existing published and unpublished safety culture assessment tools. In addition, hospital employees and administrators were interviewed to identify key patient safety and error-reporting issues.

The *Hospital Survey on Patient Safety Culture*, released in November 2004, was designed to assess hospital staff opinions about patient safety issues, medical errors, and event reporting. The survey includes 42 items that measure 12 areas, or composites, of patient safety culture. Each of the 12 patient safety culture composites is listed and defined in Table 1-1.

Table 1-1. Patient Safety Culture Composites and Definitions

Patient Safety Culture Composite	Definition: *The extent to which…*
1. Communication openness	Staff freely speak up if they see something that may negatively affect a patient and feel free to question those with more authority.
2. Feedback and communication about error	Staff are informed about errors that happen, are given feedback about changes implemented, and discuss ways to prevent errors.
3. Frequency of events reported	Mistakes of the following types are reported: (1) mistakes caught and corrected before affecting the patient, (2) mistakes with no potential to harm the patient, and (3) mistakes that could harm the patient but do not.
4. Handoffs and transitions	Important patient care information is transferred across hospital units and during shift changes.
5. Management support for patient safety	Hospital management provides a work climate that promotes patient safety and shows that patient safety is a top priority.
6. Nonpunitive response to error	Staff feel that their mistakes and event reports are not held against them and that mistakes are not kept in their personnel file.
7. Organizational learning—Continuous improvement	Mistakes have led to positive changes and changes are evaluated for effectiveness.
8. Overall perceptions of patient safety	Procedures and systems are good at preventing errors and there is a lack of patient safety problems.
9. Staffing	There are enough staff to handle the workload and work hours are appropriate to provide the best care for patients.

Table 1-1. Patient Safety Culture Composites and Definitions (continued)

Patient Safety Culture Composite	Definition: *The extent to which…*
10. Supervisor/manager expectations and actions promoting patient safety	Supervisors/managers consider staff suggestions for improving patient safety, praise staff for following patient safety procedures, and do not overlook patient safety problems.
11. Teamwork across units	Hospital units cooperate and coordinate with one another to provide the best care for patients.
12. Teamwork within units	Staff support each other, treat each other with respect, and work together as a team.

The survey also includes two questions that ask respondents to provide an overall grade on patient safety for their work area/unit and to indicate the number of events they reported over the past 12 months. In addition, respondents are asked to provide limited background demographic information about themselves (their work area/unit, staff position, whether they have direct interaction with patients, tenure in their work area/unit, etc.).

The survey's toolkit materials are available at the AHRQ Web site (http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/index.html) and include the survey, survey items and dimensions, user's guide, information about the Microsoft Excel™ Data Entry and Analysis Tool, the Hospital Patient Safety Improvement Resource List, and the Action Planning Tool for the AHRQ Surveys on Patient Safety Culture. The toolkit provides hospitals with the basic knowledge and tools needed to conduct a patient safety culture assessment and ideas regarding how to use the data.

The Hospital Survey on Patient Safety Culture is available in Spanish on the AHRQ Web site. The Spanish translation is designed for U.S. Spanish-speaking respondents from different countries. A number of translations in other languages have already been developed by international users who have agreed to share their translations. Information for translators and translation guidelines are available for download at the AHRQ Web site (http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/pscintusers.html#guidelines).

Data Limitations

The survey results presented in this report represent the leading compilation of hospital survey data currently available and therefore provide a useful reference for comparison. However, several limitations to these data should be kept in mind.

First, the hospitals that submitted data to the database are not a statistically selected sample of all U.S. hospitals, since only hospitals that administered the survey on their own and were willing to submit their data for inclusion in the database are represented. However, the characteristics of the database hospitals are fairly consistent with the distribution of hospitals registered with the American Hospital Association (AHA) and are described further in Chapter 3.

Second, hospitals that administered the survey were not required to undergo any training and administered it in different ways. Some hospitals used a paper-only survey, others used Web-only surveys, and others used a combination of these two methods to collect the data. It is

possible that these different modes could lead to differences in survey responses; further research is needed to determine whether and how different modes affect the results.

In addition, some hospitals conducted a census, surveying all hospital staff, while others administered the survey to a sample of staff. When a sample was drawn, no data were obtained to determine the methodology used to draw the sample. Survey administration statistics that were obtained about the database hospitals, such as survey administration modes and response rates, are provided in Chapter 2.

Finally, the data hospitals submitted have been cleaned for blank records (where responses to all survey items were missing except for demographic items) and straight-lining (where responses to all items within or across sections A, B, C, and F of the survey were the same). Otherwise, data are presented as submitted. No additional attempts were made to verify or audit the accuracy of the data submitted.

Chapter 2. Survey Administration Statistics

This chapter presents descriptive information regarding how the 2016 database hospitals conducted their survey administration.

Highlights

- The 2016 database consists of data from 447,584 hospital staff respondents across 680 hospitals.
- The average hospital response rate was 55 percent, with an average of 658 completed surveys per hospital.
- Most hospitals (78 percent) administered Web surveys, which resulted in lower response rates (54 percent) compared with response rates from paper (71 percent).

The 2016 database consists of survey data from 680 hospitals with a total of 447,584 hospital staff respondents. Participating hospitals administered the hospital survey to their staff between July 2013 and June 2015 and voluntarily submitted their data for inclusion in the database.

Overall Hospital Statistics

As shown in Table 2-1, the 680 database hospitals include 209 hospitals that submitted to the database for the first time, 145 hospitals that submitted data in 2016 and previously submitted data in one or more of the databases from 2007 to 2012 but not in 2014, and 326 trending hospitals that submitted data to both the 2014 and 2016 databases. Only hospitals that submitted data for the 2016 database and previously submitted data in 2014 were included for trending analysis.

Table 2-1. Trending and Nontrending Overall Statistics—2016 Database Hospitals[v]

Overall Statistic	Nontrending Hospitals		Trending Hospitals	Total Database
	2016 1st Time Submitters	2016 Hospitals Submitting Before 2014	Trending 2014-2016	
Number of hospitals	209	145	326	680
Number of survey respondents	126,758	80,109	240,717	447,584

[v] The number of trending hospitals and respondents shown as trending in Table 2-1 represent hospitals that participated consecutively in the 2014 and 2016 databases.

Table 2-2 presents data on the number of surveys completed and administered, as well as response rate information. The average response rate across participating hospitals is 55 percent.

Table 2-2. Response Rate Statistics—2016 Database Hospitals

Summary Statistic	Average	Minimum	Maximum
Number of completed surveys per hospital	658	23	7,711
Number of surveys administered per hospital	1,401	37	12,682
Hospital response rate	55%	7%	100%

Table 2-3 presents data on the type of survey administration mode (paper, Web, or mixed mode). Most hospitals (78 percent) administered the survey by Web only.

Table 2-3. Survey Administration Statistics—2016 Database Hospitals

Survey Administration Mode	Database Hospitals		Database Respondents	
	Number	Percent	Number	Percent
Paper only	45	7%	13,855	3%
Web only	528	78%	360,851	81%
Both paper and Web	107	16%	72,878	16%
TOTAL	680	100%	447,584	100%

Note: Percentages may not add to 100 due to rounding.

Table 2-4 shows average response rate by survey administration mode. Paper survey administration had a higher average response rate than Web or mixed mode.

Table 2-4. Average Response Rate by Survey Administration Mode—2016 Database Hospitals

Survey Administration Mode	Average Hospital Response Rate
Paper only	71%
Web only	54%
Both paper and Web	55%

Chapter 3. Hospital Characteristics

This chapter presents information about the distribution of database hospitals by bed size, teaching status, ownership, and geographic region. Although the hospitals that voluntarily submitted data to the database do not constitute a statistically selected sample, the characteristics of these hospitals are fairly consistent with the distribution of hospitals registered with the American Hospital Association (AHA).

The characteristics of database hospitals by bed size, teaching status, ownership, and geographic region are presented in the following tables and are compared with the distribution of AHA-registered hospitals included in the 2013 AHA Annual Survey of Hospitals.[vi]

Highlights

- Most of the database hospitals (64 percent) have at least 100 beds.
- Database hospitals represented all geographic regions in the United States.
- Most database hospitals are nonteaching (62 percent) and are nongovernment not for profit (79 percent).
- Children's hospitals represent 7 percent of database hospitals.
- Characteristics of database hospitals are fairly consistent with the distribution of hospitals registered with the American Hospital Association.

Bed Size

Table 3-1 shows the distribution of database hospitals and respondents by hospital bed size. Overall, the distribution of database hospitals by bed size is similar to the distribution of AHA-registered U.S. hospitals. Most of the database hospitals (64 percent) have at least 100 beds, which is higher than the percentage of AHA-registered U.S. hospitals (45 percent).

[vi] Data for U.S. and U.S. territory AHA-registered hospitals were obtained from 2013 AHA Annual Survey of Hospitals Database, © 2013 Health Forum, LLC, an affiliate of the American Hospital Association. Hospitals not registered with AHA were asked to provide information on their hospital's characteristics, such as bed size, teaching status, and ownership.

Table 3-1. Bed Size: Distribution of 2016 Database Hospitals and Respondents Compared With AHA-Registered Hospitals

Bed Size	AHA-Registered Hospitals		Database Hospitals		Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
6-24 beds	729	12%	35	5%	3,176	1%
25-49 beds	1,467	23%	90	13%	14,034	3%
50-99 beds	1,256	20%	119	18%	30,600	7%
100-199 beds	1,268	20%	147	22%	71,570	16%
200-299 beds	679	11%	106	16%	79,566	18%
300-399 beds	379	6%	69	10%	66,995	15%
400-499 beds	201	3%	43	6%	53,164	12%
500 or more beds	316	5%	71	10%	128,479	29%
TOTAL	6,295	100%	680	100%	447,584	100%

Note: Percentages may not add to 100 due to rounding.

Teaching Status

As shown in Table 3-2, similar to the distribution of AHA-registered hospitals, most database hospitals were non-teaching. However, there was a smaller percentage of non-teaching hospitals in the database (62 percent) compared with AHA-registered hospitals (74 percent).

Table 3-2. Teaching Status: Distribution of 2016 Database Hospitals and Respondents Compared With AHA-Registered Hospitals

Teaching Status	AHA-Registered Hospitals		Database Hospitals		Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Teaching	1,617	26%	259	38%	273,545	61%
Non-teaching	4,678	74%	421	62%	174,039	39%
TOTAL	6,295	100%	680	100%	447,584	100%

Note: Percentages may not add to 100 due to rounding.

Ownership

As shown in Table 3-3, more database hospitals were nongovernment not for profit (79 percent) compared with AHA-registered hospitals (50 percent).

Table 3-3. Ownership: Distribution of 2016 Database Hospitals and Respondents Compared With AHA-Registered Hospitals

Ownership	AHA-Registered Hospitals		Database Hospitals		Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Government (Federal and non-Federal)	1,508	24%	103	15%	61,758	14%
Nongovernment not for profit	3,146	50%	537	79%	365,588	82%
Investor owned (for profit)	1,641	26%	40	6%	20,238	5%
TOTAL	6,295	100%	680	100%	447,584	100%

Note: Percentages may not add to 100 due to rounding.

Geographic Region

Table 3-4 shows the distribution of database hospitals by AHA-defined geographic regions.[vii] The largest percentages of database hospitals are from the South Atlantic/Associated Territories region (25 percent) and the East North Central region (21 percent).

Table 3-4. Geographic Region: Distribution of 2016 Database Hospitals and Respondents Compared With AHA-Registered Hospitals

Region	AHA-Registered Hospitals		Database Hospitals		Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
New England	255	4%	33	5%	35,485	8%
Mid-Atlantic	564	9%	67	10%	75,840	17%
South Atlantic/Associated Territories	1,002	16%	171	25%	114,462	26%
East North Central	921	15%	145	21%	79,117	18%
East South Central	515	8%	41	6%	19,270	4%
West North Central	791	13%	40	6%	19,523	4%
West South Central	1,076	17%	72	11%	38,648	9%
Mountain	520	8%	24	4%	12,089	3%
Pacific/Associated Territories	651	10%	87	13%	53,150	12%
TOTAL	6,295	100%	680	100%	447,584	100%

Note: Percentages may not add to 100 due to rounding.

[vii] States and territories are categorized into AHA-defined regions as follows:

- New England: CT, MA, ME, NH, RI, VT
- Mid-Atlantic: NJ, NY, PA
- South Atlantic/Associated Territories: DC, DE, FL, GA, MD, NC, SC, VA, WV, Puerto Rico, Virgin Islands
- East North Central: IL, IN, MI, OH, WI
- East South Central: AL, KY, MS, TN
- West North Central: IA, KS, MN, MO, ND, NE, SD
- West South Central: AR, LA, OK, TX
- Mountain: AZ, CO, ID, MT, NM, NV, UT, WY
- Pacific/Associated Territories: AK, CA, HI, OR, WA, American Samoa, Guam, Marshall Islands, Northern Mariana Islands

Children's Hospitals

Table 3-5 presents the number and percentage of children's database hospitals and respondents compared with the number and percentage of AHA-registered children's hospitals. Database hospitals contained 7 percent of children's hospitals compared with 1 percent of AHA-registered children's hospitals.

Table 3-5. Children's Hospitals: Distribution of 2016 Database Hospitals and Respondents Compared With AHA-Registered Hospitals

Children's Hospitals	AHA-Registered Hospitals		Database Hospitals		Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Yes – Children's Hospital	102	2%	49	7%	31,509	7%
No – Not Children's Hospital	4,692	98%	631	93%	416,075	93%
TOTAL	4,794	100%	680	100%	447,584	100%
Missing	1,501					
Overall total	6,295					

Note: Percentages may not add to 100 due to rounding. Missing AHA-registered hospitals do not identify whether they restrict admissions primarily to children.

Chapter 4. Respondent Characteristics

This chapter describes the self-reported characteristics of database hospital staff respondents.

Highlights

- There were 447,584 hospital staff respondents from 680 hospitals.
- The top three respondent work areas were:
  - Other (29 percent).
  - Medicine (12 percent).
  - Surgery (10 percent).
- The top three respondent staff positions were:
  - Registered nurse or licensed vocational nurse/licensed practical nurse (36 percent).
  - Other (21 percent).
  - Technician (e.g., EKG, Lab, Radiology) (11 percent).
- Most respondents (77 percent) indicated they had direct interaction with patients.
- More than half of the respondents (56 percent) indicated they had worked with their current hospital at least 6 years. Similarly, almost half of the respondents (47 percent) indicated they had worked in their current work area/unit at least 6 years.
- Most respondents worked either less than 40 hours a week (46 percent) or 40 to 59 hours per week (47 percent).

Work Area/Unit

Table 4-1 shows more than one-quarter of respondents (29 percent) selected "Other" as their work area, followed by "Medicine" (12 percent) and "Surgery" (10 percent). Most of the work area units had between 3 and 7 percent of respondents. The *Hospital Survey on Patient Safety Culture* uses generic categories for hospital work areas and units. Therefore, a large percentage of respondents chose the "Other" response option, which allowed them to note their specific work area or unit. Participating hospitals were not asked to submit written or "other-specify" responses for any questions, so no data are available to further describe the respondents in the "Other" work area category.

Table 4-1. Work Area/Unit: Distribution of 2016 Database Respondents

Work Area/Unit	Database Respondents	
	Number	Percent
Other	118,881	29%
Medicine (nonsurgical)	50,292	12%
Surgery	42,514	10%
Many different hospital units/no specific unit	32,469	8%
Intensive care unit (any type)	29,224	7%
Emergency department	24,851	6%
Radiology	22,344	5%
Laboratory	18,873	5%
Obstetrics	17,580	4%
Rehabilitation	16,191	4%
Pharmacy	13,115	3%
Psychiatry/mental health	12,211	3%
Pediatrics	10,676	3%
Anesthesiology	3,231	1%
TOTAL	412,452	100%
Missing: Did not answer or were not asked the question	35,132	
Overall total	447,584	

Note: Percentages may not add to 100 due to rounding.

Staff Position

More than one-third of respondents (36 percent) selected "Registered Nurse (RN)" or "Licensed Vocational Nurse(LVN)/Licensed Practical Nurse (LPN)" as their staff position, followed by "Other" (21 percent) and "Technician" (11 percent), as shown in Table 4-2.

Table 4-2. Staff Position: Distribution of 2016 Database Respondents

Staff Position	Database Respondents	
	Number	Percent
Registered nurse (RN) or licensed vocational nurse (LVN)/licensed practical nurse (LPN)	148,832	36%
Other	87,681	21%
Technician (EKG, Lab, Radiology)	44,815	11%
Administration/management	29,525	7%
Patient care assistant/hospital aide/care partner	24,998	6%
Attending/staff physician, resident physician/physician in training, or physician assistant (PA)/nurse practitioner (NP)	23,611	6%
Unit assistant/clerk/secretary	22,184	5%
Therapist (respiratory, physical, occupational, or speech)	20,000	5%
Pharmacist	7,694	2%
Dietitian	2,838	1%
TOTAL	412,178	100%
Missing: Did not answer or were not asked the question	35,406	
Overall total	447,584	

Note: Percentages may not add to 100 due to rounding.

Interaction With Patients

As shown in Table 4-3, most respondents (77 percent) indicated they had direct interaction with patients.

Table 4-3. Interaction With Patients: Distribution of 2016 Database Respondents

Interaction With Patients	Database Respondents	
	Number	Percent
YES, have direct patient interaction	326,640	77%
NO, do NOT have direct patient interaction	95,013	23%
TOTAL	421,653	100%
Missing: Did not answer or were not asked the question	25,931	
Overall total	447,584	

Note: Percentages may not add to 100 due to rounding.

Tenure With Current Hospital

As shown in Table 4-4, more than half of the respondents (56 percent) indicated they had worked with their current hospital at least 6 years.

Table 4-4. Tenure With Current Hospital: Distribution of 2016 Database Respondents

Tenure With Current Hospital	Database Respondents	
	Number	Percent
Less than 1 year	48,751	12%
1 to 5 years	129,992	32%
6 to 10 years	88,337	21%
11 to 15 years	55,413	13%
16 to 20 years	31,578	8%
21 years or more	57,531	14%
TOTAL	411,602	100%
Missing: Did not answer or were not asked the question	35,982	
Overall total	447,584	

Note: Percentages may not add to 100 due to rounding.

Tenure in Current Work Area/Unit

As shown in Table 4-5, almost half of the respondents (47 percent) indicated they had worked in their current work area/unit at least 6 years.

Table 4-5. Tenure in Current Work Area/Unit: Distribution of 2016 Database Respondents

Tenure In Current Work Area/Unit	Database Respondents	
	Number	Percent
Less than 1 year	62,824	15%
1 to 5 years	155,372	37%
6 to 10 years	88,765	21%
11 to 15 years	48,880	12%
16 to 20 years	25,152	6%
21 years or more	34,010	8%
TOTAL	415,003	100%
Missing: Did not answer or were not asked the question	32,581	
Overall total	447,584	

Note: Percentages may not add to 100 due to rounding.

Tenure in Current Specialty or Profession

As shown in Table 4-6, respondents varied in tenure of current specialty or profession. The highest percentage of respondents had worked in their profession 1 to 5 years (25 percent), and the second highest percentage of respondents had worked 21 years or more (24 percent).

Table 4-6. Tenure in Current Specialty or Profession: Distribution of 2016 Database Respondents

Tenure in Current Specialty or Profession	Database Respondents	
	Number	Percent
Less than 1 year	27,012	7%
1 to 5 years	102,954	25%
6 to 10 years	78,513	19%
11 to 15 years	55,962	14%
16 to 20 years	44,014	11%
21 years or more	99,669	24%
TOTAL	408,124	100%
Missing: Did not answer or were not asked the question	39,460	
Overall total	447,584	

Note: Percentages may not add to 100 due to rounding.

Hours Worked Per Week

As shown in Table 4-7, most respondents (88 percent) indicated they worked between 20 and 59 hours per week.

Table 4-7. Hours Worked Per Week: Distribution of 2016 Database Respondents

Hours Worked Per Week	Database Respondents	
	Number	Percent
Less than 20 hours per week	19,442	5%
20 to 39 hours per week	166,761	41%
40 to 59 hours per week	193,398	47%
60 to 79 hours per week	18,807	5%
80 to 99 hours per week	9,099	2%
100 hours per week or more	423	0%
TOTAL	407,930	100%
Missing: Did not answer or were not asked the question	39,654	
Overall total	447,584	

Note: Percentages may not add to 100 due to rounding.

Chapter 5. Overall Results

This chapter presents the overall survey results for the database, showing the average percentage of positive responses across the database hospitals on each of the survey's items and composites. Reporting the average across hospitals ensures that each hospital receives an equal weight that contributes to the overall average. Reporting the data at the hospital level in this way is important because culture is considered to be a group characteristic and is not considered to be a solely individual characteristic.

An alternative method would be to report a straight percentage of positive responses across all respondents, but this method would give greater weight to respondents from larger hospitals (i.e., 300 beds or more). More than half of respondents (56 percent) are from hospitals with 300 beds or more.

Highlights

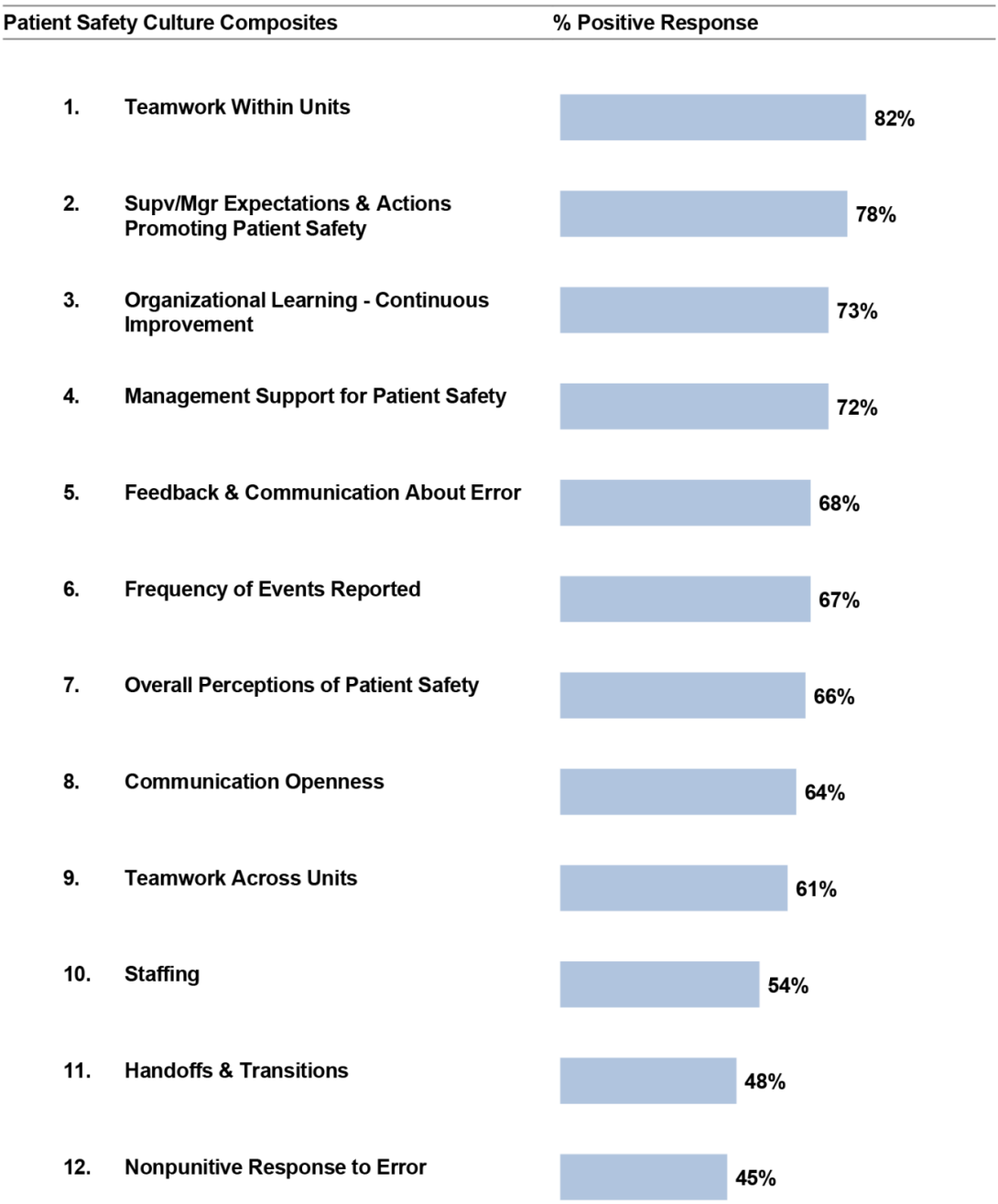
- The areas of strength or the composites with the highest average percent positive responses were:
  - *Teamwork Within Units* (82 percent positive).
  - *Supervisor/Manager Expectations and Actions Promoting Patient Safety* (78 percent positive).
  - *Organizational Learning—Continuous Improvement* (73 percent positive).
- The areas with potential for improvement or the composites with the lowest average percent positive responses were:
  - *Nonpunitive Response to Error* (45 percent positive).
  - *Handoffs and Transitions* (48 percent positive).
  - *Staffing* (54 percent positive).
- On average, most respondents within hospitals (76 percent) gave their work area or unit a grade of "Excellent" (34 percent) or "Very Good" (42 percent) on patient safety.
- On average, less than half of respondents within hospitals (45 percent) reported at least one event in their hospital over the past 12 months. It is likely that this represents underreporting of events.

This section provides the overall item and composite-level results. The method for calculating the percent positive scores at the item and composite level is described in the Notes section of this report.

Composite-Level Results

Chart 5-1 shows the average percent positive response for each of the 12 patient safety culture composites across hospitals in the database.[viii] The patient safety culture composites are shown in order from the highest average percent positive response to the lowest.

Chart 5-1. Composite-Level Average Percent Positive Response – 2016 Database Hospitals



[viii] Some hospitals excluded one or more survey items and are therefore excluded from composite-level calculations when the omitted items pertain to a particular composite. For the 2016 report, four hospitals were excluded from one or more composite-level calculations for this reason.

Areas of Strength

- ***Teamwork Within Units (82 percent positive)***—Staff support each other, treat each other with respect, and work together as a team.
- ***Supervisor/Manager Expectations and Actions Promoting Patient Safety (78 percent positive)***—Supervisors/managers consider staff suggestions for improving patient safety, praise staff for following patient safety procedures, and do not overlook patient safety problems.
- ***Organizational Learning—Continuous Improvement (73 percent positive)***—Mistakes have led to positive changes and changes are evaluated for effectiveness.

Areas With Potential for Improvement

- ***Nonpunitive Response to Error (45 percent positive)***—Staff feel that their mistakes and event reports are not held against them and that mistakes are not kept in their personnel file.
- ***Handoffs and Transitions (48 percent positive)***—Important patient care information is transferred across hospital units and during shift changes.
- ***Staffing (54 percent positive)***—There are enough staff to handle the workload and work hours are appropriate to provide the best care for patients.

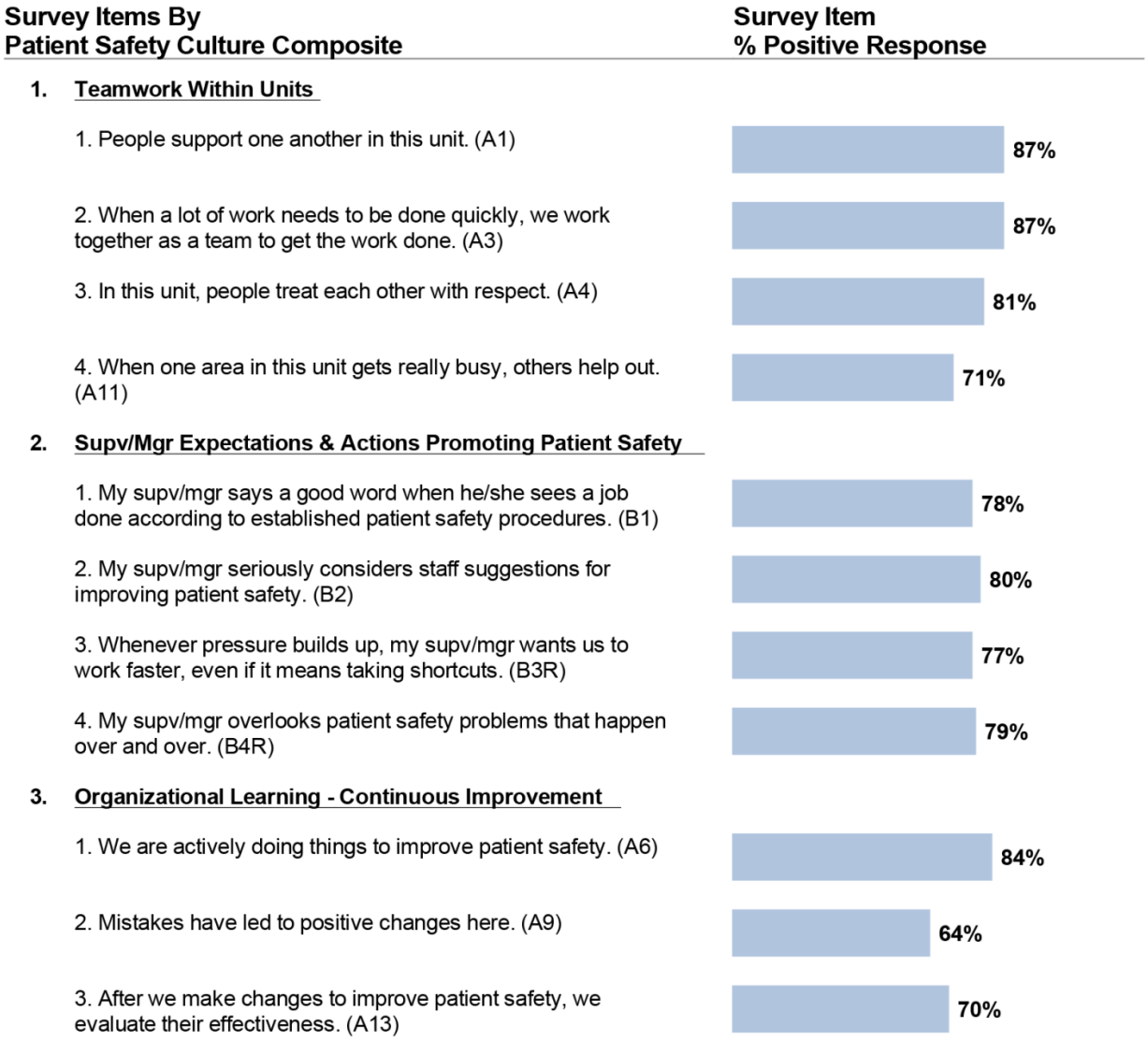
Item-Level Results

Chart 5-2 shows the average percent positive response for each of the 42 survey items. The survey items are grouped by the patient safety culture composite they are intended to measure. Within each composite, the items are presented in the order in which they appear in the survey.

Areas of Strength for the Patient Safety Culture Composite Items

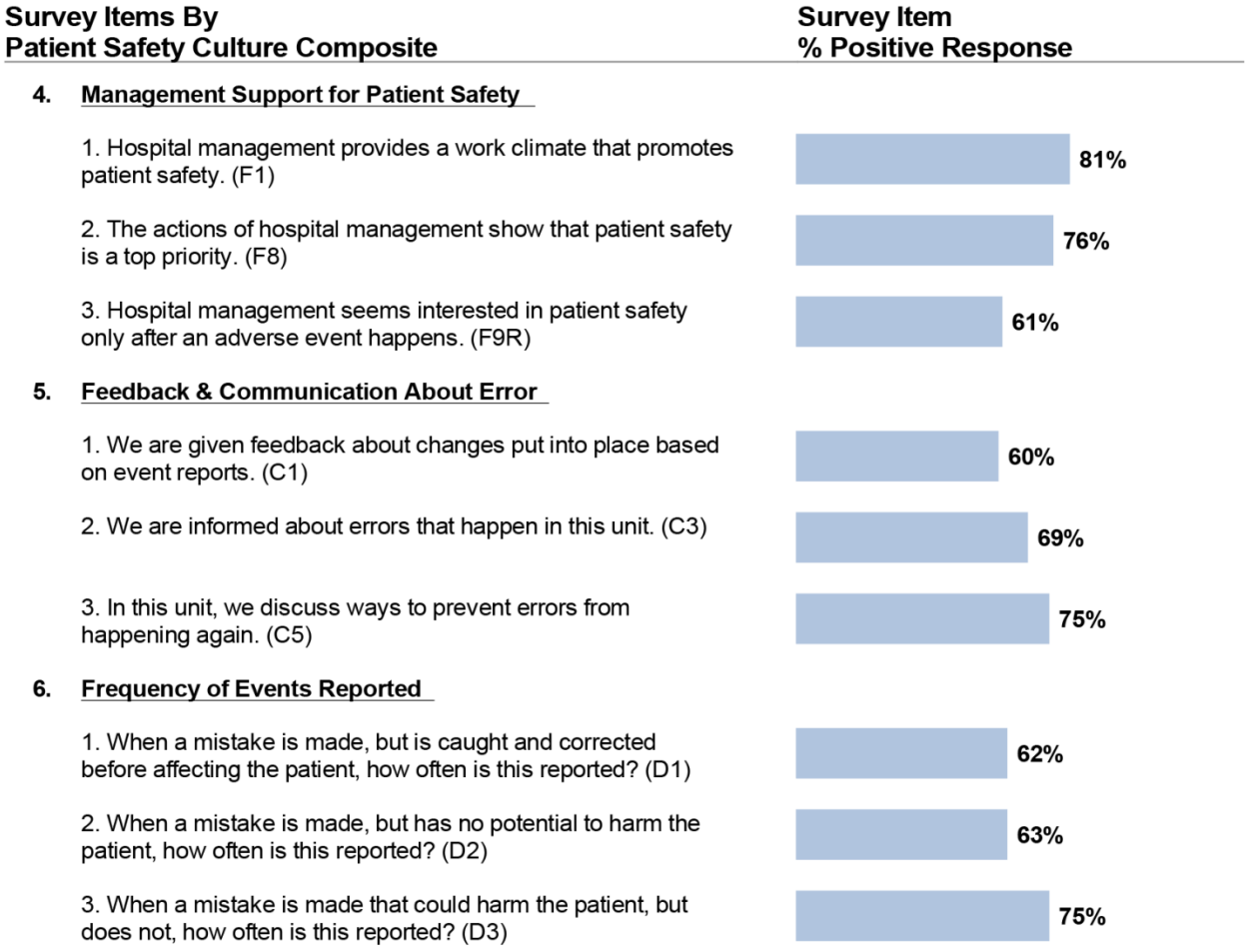
- The composite items with the highest average percent positive responses **(87 percent positive)** were from the patient safety composite *Teamwork Within Units*: (A1) "People support one another in this unit" and (A3) "When a lot of work needs to be done quickly, we work together as a team to get the work done."

Chart 5-2. Item-Level Average Percent Positive Response – 2016 Database Hospitals (Page 1 of 4)



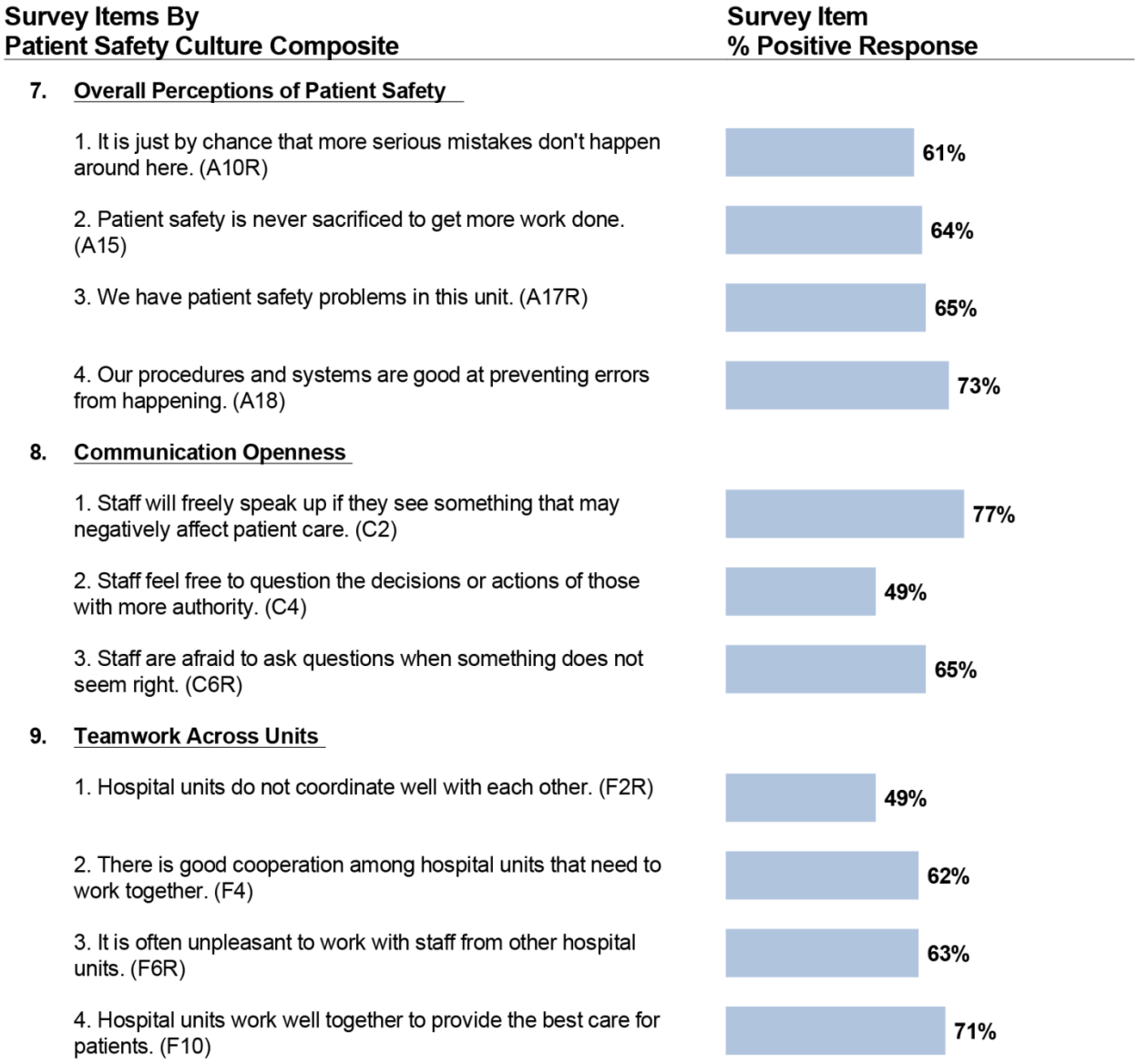
Note: The item's survey location is shown to the right in parentheses. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Chart 5-2. Item-Level Average Percent Positive Response – 2016 Database Hospitals (Page 2 of 4) (continued)



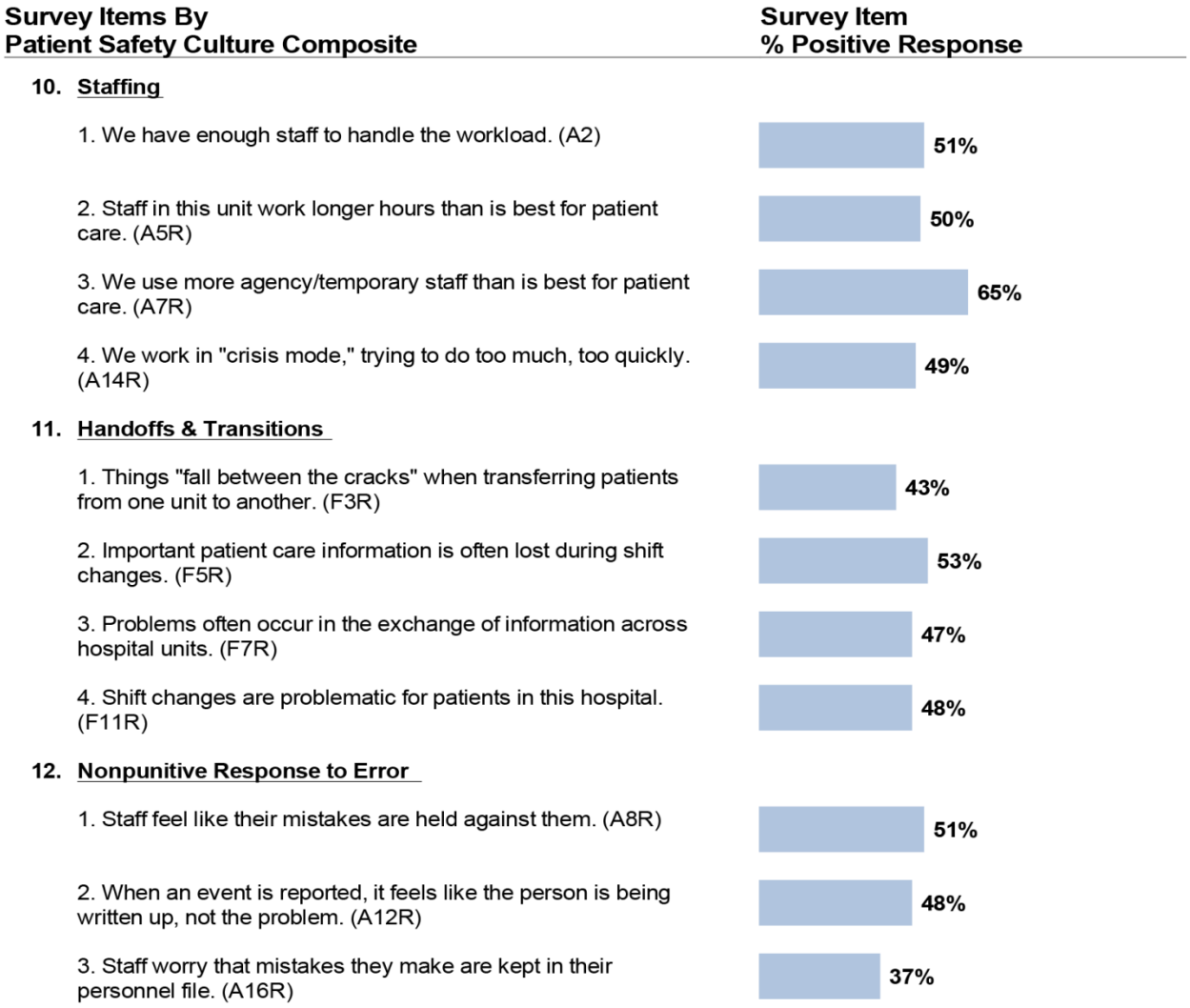
Note: The item's survey location is shown to the right in parentheses. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Chart 5-2. Item-Level Average Percent Positive Response – 2016 Database Hospitals (Page 3 of 4) (continued)



Note: The item's survey location is shown to the right in parentheses. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Chart 5-2. Item-Level Average Percent Positive Response – 2016 Database Hospitals (Page 4 of 4) (continued)



Note: The item's survey location is shown to the right in parentheses. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

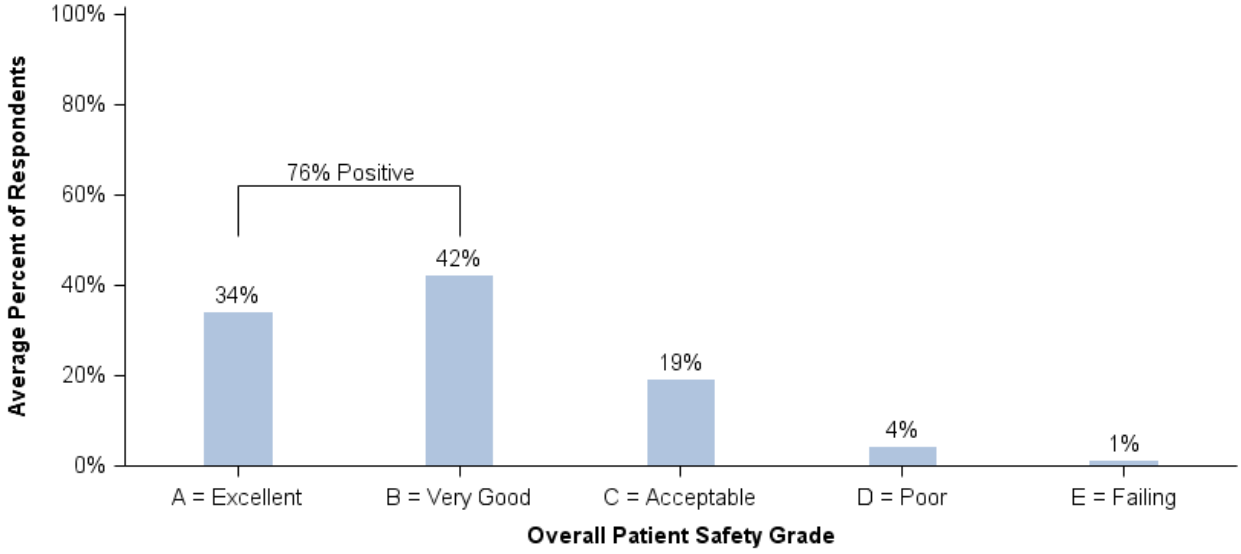
Areas With Potential for Improvement for the Patient Safety Culture Composite Items

- The composite item with the lowest average percent positive response (**37 percent positive**) was from the patient safety composite *Nonpunitive Response to Error*: (A16) "Staff worry that mistakes they make are kept in their personnel file."

Patient Safety Grade—Chart 5-3 shows that on average across hospitals, most respondents were positive, with 76 percent giving their work area or unit a patient safety grade of "Excellent" (34 percent) or "Very Good" (42 percent).

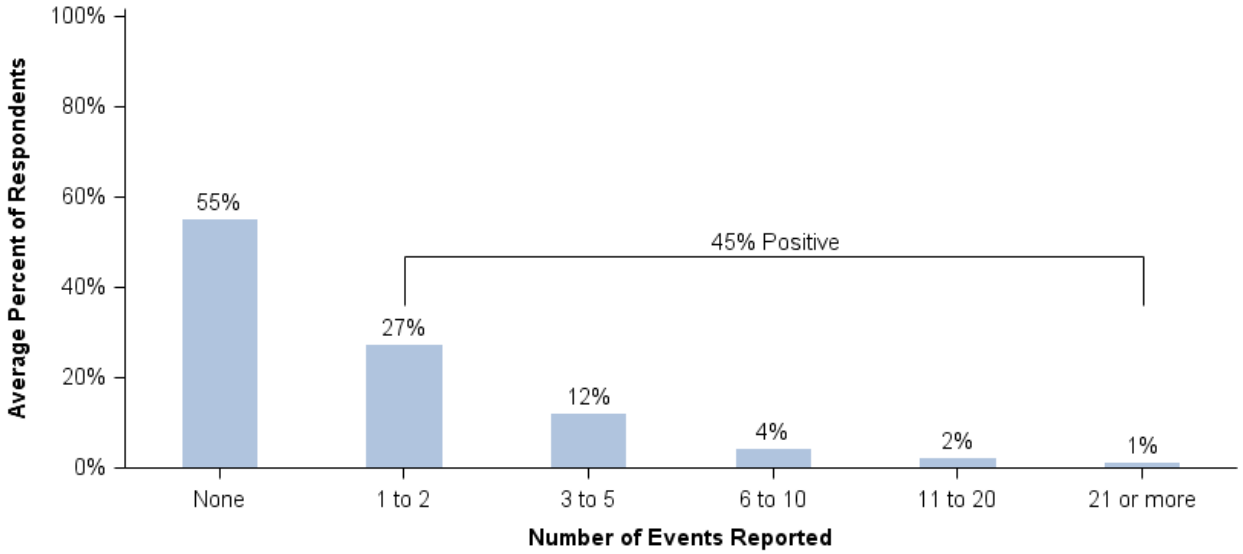
Number of Events Reported—Chart 5-4 shows that on average across hospitals, less than half of respondents (45 percent) reported at least one event in their hospital over the past 12 months. Event reporting was identified as an area for improvement for most hospitals because underreporting of events means potential patient safety problems may not be recognized or identified and therefore may not be addressed.

Chart 5-3. Average Percentage of 2016 Database Respondents Giving Their Work Area/Unit a Patient Safety Grade



Note: Percentages may not add to 100 due to rounding.

Chart 5-4. Average Percentage of 2016 Database Respondents Reporting Events in the Past 12 Months



Note: Percentages may not add to 100 due to rounding. Response categories that make up the percent positive score may not sum to the total percent positive due to rounding.

Chapter 6. Comparing Your Results

This chapter presents how to compare your results with the results from the database. To compare your hospital's survey results with the results from the database, you will need to calculate your hospital's percent positive response on the survey's 42 items and 12 composites, patient safety grade, and number of events reported. Refer to the Notes section at the end of this report for a description of how to calculate these percent positive scores. You will then be able to compare your hospital's results with the database averages and examine the percentile scores to place your hospital's results relative to the distribution of database hospitals.

When comparing your hospital's results with results from the database, keep in mind that the database provides only *relative* comparisons. Even though your hospital's survey results may be better than the database statistics, you may still believe there is room for improvement in a particular area within your hospital in an *absolute* sense. As you will notice from the database results, there are some patient safety composites that even the highest scoring hospitals could improve on. Therefore, the comparative data provided in this report should be used to supplement your hospital's own efforts toward identifying areas of strength and areas on which to focus patient safety culture improvement efforts.

Highlights

- There was considerable variability in the range of hospital scores (lowest to highest) across the 12 patient safety culture composites and individual items:
    - *Supervisor/Manager Expectations & Actions Promoting Patient Safety is the* composite that showed the most variability in scores, with at least one hospital scoring 17 percent positive and at least one other hospital scoring 96 percent positive.
    - *Patient safety grade*. In at least one hospital, only 4 percent of the respondents provided their unit with a patient safety grade of "Excellent" or "Very Good," but at another hospital 98 percent provided their unit with a patient safety grade of "Excellent" or "Very Good."
    - *Number of events reported*. In at least one hospital, 15 percent of respondents reported at least one event over the past 12 months, but at another hospital 81percent of respondents reported at least one event.

Description of Comparative Statistics

This section provides a brief description of the results shown in the remainder of this chapter.

Average Percent Positive

The average percent positive scores for each of the 12 patient safety culture composites and for the survey's 42 items (plus the two questions on patient safety grade and number of events

reported) are provided in the comparative results tables in this chapter. These average percent positive scores were calculated by averaging composite-level percent positive scores across all hospitals in the database, as well as averaging item-level percent positive scores across hospitals. Since the percent positive is displayed as an overall average, scores from each hospital are weighted equally in their contribution to the calculation of the average.[ix]

Standard Deviation

The standard deviation (s.d.), a measure of the spread or variability of hospital scores around the average, is also displayed. The standard deviation tells you the extent to which hospitals' scores differ from the average:

- If scores from all hospitals were exactly the same, then the average would represent all their scores perfectly and the standard deviation would be zero.
- If scores from all hospitals were very close to the average, then the standard deviation would be small and close to zero.
- If scores from many hospitals were very different from the average, then the standard deviation would be a large number.

When the distribution of hospital scores follows a normal bell-shaped curve (where most of the scores fall in the middle of the distribution, with fewer scores at the lower and higher ends of the distribution), the average, plus or minus the standard deviation, will include about 68 percent of all hospital scores. For example, if an average percent positive score across the database hospitals were 70 percent with a standard deviation of 10 percent and scores were normally distributed, then about 68 percent of all the database hospitals would have scores between 60 and 80 percent.

Statistically "Significant" Differences Between Scores

You may be interested in determining the statistical significance of differences between your scores and the averages in the database, or between scores in various breakout categories (hospital bed size, teaching status, etc.). Statistical significance is greatly influenced by sample size, so as the number of observations in comparison groups gets larger, small differences in scores will be statistically significant. While a 1 percent difference between percent positive scores might be "statistically" significant (that is, not due to chance), the difference is not likely to be meaningful or "practically" significant.

Keep in mind that statistically significant differences are not always important, and nonsignificant differences are not always trivial. Therefore, we recommend the following guideline:

- **Use a 5 percentage point difference as a rule of thumb when comparing your hospital's results with the database averages.** Your hospital's percent positive score should be at least 5 percentage points greater than the database average to be considered

[ix] An alternative method would be to report a straight percentage of positive response across all respondents. However, this method would give greater weight to respondents from larger hospitals (i.e., greater than 300 beds) since they account for 56 percent of responses.

"better" and should be at least 5 percentage points less to be considered "lower" than the database average. A 5 percentage point difference is likely to be statistically significant for most hospitals given the number of responses per hospital and is also a meaningful difference to consider.

Minimum and Maximum Scores

The minimum (lowest) and maximum (highest) percent positive scores are presented for each composite and item. These scores provide information about the range of percent positive scores obtained by database hospitals and are actual scores from the lowest and highest scoring hospitals. When comparing with the minimum and maximum scores, keep in mind that these scores may represent hospitals that are extreme outliers (indicated by large differences between the minimum score and the 10th percentile score, or between the 90th percentile score and the maximum score).

Percentiles

The 10th, 25th, 50th (or median), 75th, and 90th percentile scores are displayed for the survey composites and items. Percentiles provide information about the distribution of hospital scores. To calculate percentile scores, all hospital percent positive scores were ranked in order from low to high. *A specific percentile score shows the percentage of hospitals that scored at or below a particular score.* For example, the 50th percentile, or median, is the percent positive score where 50 percent of the hospitals scored the same or lower and 50 percent of the hospitals scored higher.

When the distribution of hospital scores follows a normal bell-shaped curve (where most of the scores fall in the middle of the distribution, with fewer scores at the lower and higher ends of the distribution), the 50th percentile, or median, will be very similar to the average score. Interpret the percentile scores as shown in Table 6-1.

Table 6-1. Interpretation of Percentile Scores

Percentile Score	Interpretation
10th percentile Represents the lowest scoring hospitals.	10% of the hospitals scored the same or lower. 90% of the hospitals scored higher.
25th percentile Represents lower scoring hospitals.	25% of the hospitals scored the same or lower. 75% of the hospitals scored higher.
50th percentile (or median) Represents the middle of the distribution of hospitals.	50% of the hospitals scored the same or lower. 50% of the hospitals scored higher.
75th percentile Represents higher scoring hospitals.	75% of the hospitals scored the same or lower. 25% of the hospitals scored higher.
90th percentile Represents the highest scoring hospitals.	90% of the hospitals scored the same or lower. 10% of the hospitals scored higher.

To compare with the database percentiles, compare your hospital's percent positive scores with the percentile scores for each composite and item. Look for the highest percentile where your hospital's score is *higher* than that percentile.

For example: On survey item 1 in Table 6-2, the 75th percentile score is 49 percent positive, and the 90th percentile score is 62 percent positive.

Table 6-2. Sample Percentile Statistics

Survey Item	Survey Item % Positive Response						
	Min	10th %ile	25th %ile	Median/50th %ile	75th %ile	90th %ile	Max
Item 1	8%	10%	25%	35%	49%	62%	96%

If your hospital's score is 55%, your score falls here:

If your hospital's score is 65%, your score falls here:

- If your hospital's score is 55 percent positive, it falls above the 75th percentile (but below the 90th), meaning that your hospital scored higher than at least 75 percent of the hospitals in the database.
- If your hospital's score is 65 percent positive, it falls above the 90th percentile, meaning your hospital scored higher than at least 90 percent of the hospitals in the database.

Composite and Item-Level Comparative Tables

Table 6-3 presents comparative statistics (average percent positive and standard deviation, minimum and maximum scores, and percentiles) for each of the 12 patient safety culture composites. The patient safety culture composites are shown in order from the highest average percent positive response to the lowest.

Supervisor/Manager Expectations & Actions Promoting Patient Safety is the composite that showed the most variability in scores, with at least one hospital scoring 17 percent positive and at least one other hospital scoring 96 percent positive.

Table 6-4 presents comparative statistics for each of the 42 survey items. The survey items are grouped by the patient safety culture composite they are intended to measure. Within each composite, the items are presented in the order in which they appear in the survey.

Patient safety grades of "Excellent" or "Very Good", shown in Table 6-5, had a wide range of responses, from at least one hospital where only 4 percent of respondents provided their unit with a patient safety grade of "Excellent" or "Very Good" to a hospital where 98 percent did.

Percentage of respondents who reported one or more events also had a wide range of response, as shown in Table 6-6, from at least one hospital where only 15 percent of respondents reported a single event over the past 12 months to a hospital where 81 percent of respondents reported at least one event.

Table 6-3. Composite-Level Comparative Results—2016 Database Hospitals

Patient Safety Culture Composites	Average % Positive	s.d.	Composite % Positive Response Percentiles						
			Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
1. Teamwork Within Units	82%	5.91%	26%	75%	79%	82%	85%	88%	96%
2. Supervisor/Manager Expectations & Actions Promoting Patient Safety	78%	6.66%	17%	71%	75%	79%	83%	86%	96%
3. Organizational Learning—Continuous Improvement	73%	7.44%	15%	63%	68%	73%	77%	81%	93%
4. Management Support for Patient Safety	72%	9.14%	39%	60%	67%	73%	79%	83%	96%
5. Feedback & Communication About Error	68%	8.05%	17%	58%	63%	68%	74%	78%	89%
6. Frequency of Events Reported	67%	7.37%	43%	57%	61%	67%	71%	76%	94%
7. Overall Perceptions of Patient Safety	66%	8.50%	36%	55%	60%	66%	72%	77%	90%
8. Communication Openness	64%	6.70%	35%	55%	59%	64%	68%	72%	84%
9. Teamwork Across Units	61%	9.32%	34%	50%	56%	61%	67%	73%	91%
10. Staffing	54%	9.34%	20%	42%	48%	53%	60%	66%	86%
11. Handoffs & Transitions	48%	10.37%	22%	35%	41%	46%	54%	62%	80%
12. Nonpunitive Response to Error	45%	8.75%	20%	35%	39%	44%	51%	56%	75%

Table 6-4. Item-Level Comparative Results—2016 Database Hospitals (Page 1 of 4)

Item	Survey Items by Composite	Average % Positive	s.d.	Survey Item % Positive Response Percentiles: Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
1.	**Teamwork Within Units**									
A1	1. People support one another in this unit.	87%	6.21%	28%	81%	85%	88%	91%	93%	100%
A3	2. When a lot of work needs to be done quickly, we work together as a team to get the work done.	87%	5.51%	33%	81%	85%	87%	90%	93%	100%
A4	3. In this unit, people treat each other with respect.	81%	6.87%	28%	73%	77%	81%	85%	88%	97%
A11	4. When one area in this unit gets really busy, others help out.	71%	7.01%	14%	64%	67%	72%	75%	79%	96%
2.	**Supervisor/Manager Expectations & Actions Promoting Patient Safety**									
B1	1. My supv/mgr says a good word when he/she sees a job done according to established patient safety procedures.	78%	7.36%	19%	70%	74%	78%	83%	87%	97%
B2	2. My supv/mgr seriously considers staff suggestions for improving patient safety.	80%	7.38%	19%	71%	76%	80%	84%	88%	96%
B3R	3. Whenever pressure builds up, my supv/mgr wants us to work faster, even if it means taking shortcuts.	77%	7.72%	13%	68%	73%	77%	82%	87%	100%
B4R	4. My supv/mgr overlooks patient safety problems that happen over and over.	79%	7.53%	11%	71%	75%	79%	83%	87%	95%
3.	**Organizational Learning—Continuous Improvement**									
A6	1. We are actively doing things to improve patient safety.	84%	6.77%	28%	76%	80%	84%	88%	92%	98%
A9	2. Mistakes have led to positive changes here.	64%	8.20%	8%	54%	59%	63%	69%	73%	93%
A13	3. After we make changes to improve patient safety, we evaluate their effectiveness.	70%	9.16%	8%	59%	64%	70%	76%	81%	92%

Note: The item's survey location is shown to the left. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Table 6-4. Item-Level Comparative Results—2016 Database Hospitals (Page 2 of 4) (continued)

Item	Survey Items by Composite	Average % Positive	s.d.	Survey Item % Positive Response Percentiles: Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
4.	**Management Support for Patient Safety**									
F1	1. Hospital mgmt provides a work climate that promotes patient safety.	81%	9.16%	19%	69%	76%	82%	87%	91%	100%
F8	2. The actions of hospital mgmt show that patient safety is a top priority.	76%	9.58%	17%	64%	70%	76%	82%	87%	97%
F9R	3. Hospital mgmt seems interested in patient safety only after an adverse event happens.	61%	10.23%	23%	48%	54%	60%	68%	74%	92%
5.	**Feedback & Communication About Error**									
C1	1. We are given feedback about changes put into place based on event reports.	60%	9.85%	6%	48%	54%	61%	67%	73%	85%
C3	2. We are informed about errors that happen in this unit.	69%	8.19%	22%	58%	64%	69%	74%	78%	93%
C5	3. In this unit, we discuss ways to prevent errors from happening again.	75%	7.65%	22%	66%	70%	76%	80%	84%	92%
6.	**Frequency of Events Reported**									
D1	1. When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?	62%	8.53%	35%	51%	56%	62%	68%	73%	94%
D2	2. When a mistake is made, but has no potential to harm the patient, how often is this reported?	63%	8.22%	35%	52%	57%	63%	68%	74%	87%
D3	3. When a mistake is made that could harm the patient, but does not, how often is this reported?	75%	6.69%	50%	67%	71%	75%	80%	83%	100%

Note: The item's survey location is shown to the left. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Table 6-4. Item-Level Comparative Results—2016 Database Hospitals (Page 3 of 4) (continued)

Item	Survey Items by Composite	Average % Positive	s.d.	Survey Item % Positive Response Percentiles: Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
7.	**Overall Perceptions of Patient Safety**									
A10R	1. It is just by chance that more serious mistakes don't happen around here.	61%	10.18%	18%	50%	55%	62%	68%	75%	92%
A15	2. Patient safety is never sacrificed to get more work done.	64%	8.97%	19%	53%	58%	64%	70%	76%	91%
A17R	3. We have patient safety problems in this unit.	65%	10.31%	11%	52%	59%	65%	72%	79%	95%
A18	4. Our procedures and systems are good at preventing errors from happening.	73%	8.78%	14%	63%	68%	74%	79%	84%	96%
8.	**Communication Openness**									
C2	1. Staff will freely speak up if they see something that may negatively affect patient care.	77%	6.88%	19%	70%	74%	78%	82%	86%	97%
C4	2. Staff feel free to question the decisions or actions of those with more authority.	49%	7.83%	14%	39%	43%	48%	54%	59%	74%
C6R	3. Staff are afraid to ask questions when something does not seem right.	65%	7.69%	14%	56%	61%	66%	70%	74%	86%
9.	**Teamwork Across Units**									
F2R	1. Hospital units do not coordinate well with each other.	49%	11.36%	9%	35%	41%	48%	56%	63%	91%
F4	2. There is good cooperation among hospital units that need to work together.	62%	10.05%	6%	50%	56%	62%	68%	75%	93%
F6R	3. It is often unpleasant to work with staff from other hospital units.	63%	8.72%	16%	52%	58%	63%	68%	74%	91%
F10	4. Hospital units work well together to provide the best care for patients.	71%	9.75%	9%	60%	66%	72%	77%	84%	96%

Note: The item's survey location is shown to the left. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Table 6-4. Item-Level Comparative Results—2016 Database Hospitals (Page 4 of 4) (continued)

Item	Survey Items by Composite	Average % Positive	s.d.	Survey Item % Positive Response Percentiles: Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
10.	**Staffing**									
A2	1. We have enough staff to handle the workload.	51%	11.99%	11%	36%	44%	51%	59%	67%	88%
A5R	2. Staff in this unit work longer hours than is best for patient care.	50%	9.74%	16%	37%	44%	50%	56%	63%	87%
A7R	3. We use more agency/temporary staff than is best for patient care.	65%	10.88%	15%	51%	59%	65%	72%	77%	95%
A14R	4. We work in “crisis mode” trying to do too much, too quickly.	49%	10.79%	19%	36%	42%	48%	56%	64%	85%
11.	**Handoffs & Transitions**									
F3R	1. Things “fall between the cracks” when transferring patients from one unit to another.	43%	11.53%	16%	29%	35%	41%	49%	58%	82%
F5R	2. Important patient care information is often lost during shift changes.	53%	9.95%	18%	41%	47%	53%	59%	67%	84%
F7R	3. Problems often occur in the exchange of information across hospital units.	47%	10.69%	22%	33%	40%	45%	53%	61%	80%
F11R	4. Shift changes are problematic for patients in this hospital.	48%	11.17%	16%	35%	40%	46%	54%	64%	89%
12.	**Nonpunitive Response to Error**									
A8R	1. Staff feel like their mistakes are held against them.	51%	9.39%	19%	39%	45%	51%	56%	63%	80%
A12R	2. When an event is reported, it feels like the person is being written up, not the problem.	48%	8.79%	19%	38%	42%	48%	53%	59%	76%
A16R	3. Staff worry that mistakes they make are kept in their personnel file.	37%	9.26%	7%	26%	30%	36%	42%	48%	71%

Note: The item’s survey location is shown to the left. An “R” indicates a negatively worded item, where the percent positive response is based on those who responded “Strongly disagree” or “Disagree,” or “Never” or “Rarely” (depending on the response category used for the item).

Table 6-5. Percentage of Respondents Giving Their Work Area/Unit Patient Safety Grade Comparative Results—2016 Database Hospitals

				Survey Item % Response Percentiles						
Item	Work Area/Unit Patient Safety Grade	Average %	s.d.	Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
E1	Excellent or Very Good	76%	10.43%	4%	63%	70%	77%	83%	88%	98%

Note: For the full average distribution of results, see Chart 5-3.

Table 6-6. Percentage of Respondents Reporting One or More Events in the Past 12 Months Comparative Results—2016 Database Hospitals

				Survey Item % Response Percentiles						
Item	Events Reported in the Past 12 Months	Average %	s.d.	Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
G1	1 or more events	45%	9.62%	15%	33%	39%	44%	51%	57%	81%

Note: For the full average distribution of results, see Chart 5-4.

Appendixes A and B: Overall Results by Hospital and Respondent Characteristics

In addition to the overall results on the database hospitals presented, Part II of the report presents data tables showing average percent positive scores on the survey composites and items across database hospitals, broken down by the following hospital and respondent characteristics:

Appendix A: Results by Hospital Characteristics

- Bed size
- Teaching status
- Ownership
- Geographic region
- Children's hospitals

Appendix B: Results by Respondent Characteristics

- Work area/unit
- Staff position
- Interaction with patients
- Tenure in current work area/unit

The breakout tables are included as appendixes because there are a large number of them. Highlights of the findings from the breakout tables in these appendixes are provided on the following pages. The appendixes are available on the Web at: www.ahrq.gov/qual/hospsurvey16/.

Highlights From Appendix A: Overall Results by Hospital Characteristics

Bed Size (Tables A-1, A-3)

- Smaller hospitals (*6–24 beds* and *25–49 beds*) had the highest percent positive for the average across all composites (69 percent); larger hospitals (*300–399 beds*) had the lowest (61 percent).
- Hospitals with *25–49* licensed beds had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (83 percent); hospitals with *300–399* beds and *400–499* beds had the lowest (70 percent).

Teaching Status and Ownership (Tables A-5, A-7, A-8)

- *Nonteaching* hospitals, on average, scored higher than *teaching* hospitals by 5 percentage points or more on Overall Perceptions of Patient Safety, Staffing, and Handoffs and Transitions.
- *Nonteaching* hospitals had a higher percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (78 percent) than *teaching* hospitals (73 percent).
- Overall, hospitals did not have large differences across ownership categories on the 12 composites, patient safety grade, or number of events reported.

Geographic Region (Tables A-9, A-11, A-12)

- *East South Central* hospitals had the highest percent positive for the average across all composites (68 percent); *New England* and *Mid-Atlantic* hospitals had the lowest (61 percent).
- *West North Central* hospitals had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (79 percent); *Mid-Atlantic* hospitals had the lowest (70 percent).
- *Pacific* hospitals had the highest percentage of respondents who reported one or more events in the past year (50 percent); *West South Central* hospitals had the lowest (39 percent).

Children's Hospitals (Tables A-13, A-15, A-16)

- Children's hospitals and non-children's hospitals did not have large differences on the 12 composites, patient safety grade, or number of events reported.

Highlights From Appendix B: Overall Results by Respondent Characteristics

Work Area/Unit (Tables B-1, B-3, B-4)

- Respondents in *Rehabilitation* had the highest percent positive response for the average across the composites (71 percent positive); *Emergency* had the lowest (59 percent positive).
- *Rehabilitation* had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (86 percent); *Emergency* had the lowest (65 percent).
- *ICU (Any Type)* had the highest percentage of respondents reporting one or more events in the past year (62 percent); *Rehabilitation* had the lowest (39 percent).

Staff Position (Tables B-5, B-7, B-8)

- Respondents in *Administration/Management* had the highest percent positive response for the average across the composites (76 percent positive); *RN/LVN/LPN* had the lowest (63 percent positive).
- *Administration/Management* had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (89 percent); *RN/LVN/LPN* had the lowest (71 percent).
- *Pharmacists* had the highest percentage of respondents reporting one or more events in the past year (77 percent); *Unit Assistants/Clerks/Secretaries* had the lowest (17 percent).

Interaction With Patients (Tables B-9, B-11, B-12)

- Respondents *with* direct patient interaction were more positive than those *without* direct interaction on *Handoffs and Transitions* (49 percent compared with 43 percent) but less positive on *Management Support for Patient Safety* (71 percent compared with 79 percent) and *Feedback and Communication About Error* (67 percent compared with 72 percent).
- Respondents *without* direct patient interaction had a higher percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (81 percent) than respondents *with* direct patient interaction (75 percent).

- More respondents *with* direct patient interaction reported one or more events in the past year (49 percent) than respondents *without* direct patient interaction (31 percent).

Tenure in Current Work Area/Unit (Tables B-13, B-15, B-16)

- Respondents with *less than 1 year* in their current work area/unit had the highest percent positive response for the average across the composites (69 percent); respondents with *6 to 10 years* had the lowest (63 percent).
- Respondents with *less than 1 year* in their current work area/unit had the highest percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (82 percent); respondents with *6 to 10 years* had the lowest (74 percent).
- Respondents with *6 to 10 years*, *11 to 15 years*, and *21 years or more* in their current work area/unit had the highest percentage of respondents reporting one or more events in the past year (48 percent each); respondents with less than 1 year had the lowest (31 percent).

Chapter 7. Trending: Comparing Results Over Time

Many hospitals that administer the hospital survey have indicated that they intend to continue to administer the survey on a regular basis and to track changes in patient safety culture over time. While the overall results presented earlier in this report reflect only the most recent survey data from all 680 participating hospitals, we have data from two administrations of the survey for 326 hospitals that submitted to both the 2014 and 2016 databases, allowing us to examine trends over time for these hospitals. Hospitals that submitted to databases prior to 2014 were not included in the trending database. This chapter presents trending results from these 326 hospitals.

Highlights

- Across the 326 trending hospitals, the average percent positive scores across the 12 patient safety culture composites increased by 1 percentage point (ranging across the composites from a change of -2 to a change of 3 percentage points).
- Of those hospitals that increased on Patient Safety Grade, scores for "Excellent" or "Very Good" increased on average 6 percent.
- For hospitals that increased on the number of respondents who reported at least one event in the past 12 months, the average increase was 5 percent.

When reviewing the results in this chapter, keep in mind that survey scores might change, or not change, over time for a number of complex reasons. Important factors to consider are whether the hospital implemented patient safety initiatives or took actions between survey administrations and the length of time between administrations.

Survey methodology issues can also play a big role in score changes. Low survey response rates for the previous or most recent administration, changes in the number of staff asked to complete the survey, or changes in the types of staff asked to complete the survey will make it difficult to interpret changes in scores over time.

Table 7-1 displays summary statistics from the previous and most recent survey administrations for the 326 trending hospitals.

Table 7-1. Trending: Response Rate Statistics—2016 Database Hospitals

Summary Statistic	Most Recent Submission (2016)	Previous Submission (2014)
Total number of respondents	240,717	216,719
Number of completed surveys per hospital	Average: 738 Range: 23 – 7,711	Average: 665 Range: 10 – 7,162
Hospital response rate	Average: 57% Range: 7% – 100%	Average: 56% Range: 3% – 100%

Note: Trending hospitals include hospitals that submitted in both the 2014 and 2016 comparative databases.

Tables 7-2 to 7-5 provide descriptive statistics on the 326 trending hospitals by bed size, teaching status, ownership, and region compared with nontrending hospitals.

Table 7-2. Bed Size—Distribution of 2016 Trending and Nontrending Hospitals

Bed Size	Trending Hospitals		Nontrending Hospitals				AHA-Registered U.S. Hospitals	
	Trending 2014-2016		2016 Hospitals Submitting Before 2014		2016 Hospitals 1st Time Submitters			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
6-24 beds	11	3%	12	8%	12	6%	729	12%
25-49 beds	41	13%	29	20%	20	10%	1,467	23%
50-99 beds	55	17%	23	16%	41	20%	1,256	20%
100-199 beds	73	22%	24	17%	50	24%	1,268	20%
200-299 beds	44	14%	16	11%	46	22%	679	11%
300-399 beds	33	10%	18	12%	18	9%	379	6%
400-499 beds	25	8%	11	8%	7	3%	201	3%
500 or more beds	44	14%	12	8%	15	7%	316	5%
TOTAL	326	100%	145	100%	209	100%	6,295	100%

Note: Percentages may not add to 100 due to rounding.

Table 7-3. Teaching Status—Distribution of 2016 Trending and Nontrending Hospitals

Teaching Status	Trending Hospitals		Nontrending Hospitals				AHA-Registered U.S. Hospitals	
	Trending 2014-2016		2016 Hospitals Submitting Before 2014		2016 Hospitals 1st Time Submitters			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Teaching	126	39%	63	43%	70	33%	1,617	26%
Nonteaching	200	61%	82	57%	139	67%	4,678	74%
TOTAL	326	100%	145	100%	209	100%	6,295	100%

Table 7-4. Ownership—Distribution of 2016 Trending and Nontrending Hospitals

Ownership	Trending Hospitals		Nontrending Hospitals				AHA-Registered U.S. Hospitals	
	Trending 2014-2016		2016 Hospitals Submitting Before 2014		2016 Hospitals 1st Time Submitters			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Government (Federal or non-Federal)	50	15%	19	13%	34	16%	1,508	14%
Nongovernment (voluntary/nonprofit or proprietary/investor owned)	276	85%	126	87%	175	84%	4,787	76%
TOTAL	326	100%	145	100%	209	100%	6,295	100%

Table 7-5. Geographic Region—Distribution of 2016 Trending and Nontrending Hospitals

Region	Trending Hospitals		Nontrending Hospitals				AHA-Registered U.S. Hospitals	
	Trending 2014-2016		2016 Hospitals Submitting Before 2014		2016 Hospitals 1st Time Submitters			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New England	10	3%	5	3%	18	9%	255	4%
Mid-Atlantic	33	10%	12	8%	22	11%	564	9%
South Atlantic/ Associated Territories	83	25%	27	19%	61	29%	1,002	16%
East North Central	81	25%	36	25%	28	13%	921	15%
East South Central	22	7%	9	6%	10	5%	515	8%
West Central	46	15%	35	25%	31	15%	1,867	30%
Mountain/Pacific/Associated Territories	51	16%	21	14%	39	19%	1,171	19%
TOTAL	326	100%	145	100%	209	100%	6,295	100%

Note: Percentages may not add to 100 due to rounding. States and territories are categorized into AHA-defined regions as follows:

- New England: CT, MA, ME, NH, RI, VT
- Mid-Atlantic: NJ, NY, PA
- South Atlantic/Associated Territories: DC, DE, FL, GA, MD, NC, SC, VA, WV, Puerto Rico, Virgin Islands
- East North Central: IL, IN, MI, OH, WI
- East South Central: AL, KY, MS, TN
- West Central: AR, IA, KS, LA, MN, MO, ND, NE, OK, SD, TX
- Mountain/Pacific/Associated Territories: AK, AZ, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY, American Samoa, Guam, Marshall Islands, Northern Mariana Islands

Description of Trending Statistics

Table 7-6 shows examples of the types of statistics provided in this chapter. The tables show the average percentage of respondents who answered positively in the most recent survey administration (left column) and the previous administration (middle column) for the trending hospitals only. The change over time (Most Recent score minus Previous score) is shown in the right column. The change is a negative number if the most recent administration showed a decline and a positive number if the most recent administration showed an increase.

Table 7-6. Example of Trending Statistics

Survey Item	Most Recent	Previous	Change
Item 1	80%	84%	-4%
Item 2	80%	78%	2%

Table 7-7 shows additional types of trending statistics that are provided. The maximum increase shows the score from the hospital or hospitals with the largest percent positive score increase on a particular composite or item. Similarly, the maximum decrease shows the score from the hospital or hospitals with the largest percent positive score decrease.

The average increase was calculated by including only hospitals that had any increase in their most recent score; hospitals that showed no change or decreased were *not* included when calculating the average increase. Similarly, the average decrease was calculated by including only hospitals that had a decrease in their most recent score; hospitals that showed no change or increased were *not* included when calculating the average decrease.

Table 7-7. Example of Other Trending Statistics

Survey Item	Maximum Increase	Maximum Decrease	Average Increase	Average Decrease
Item 1	18%	-45%	3%	-5%
Item 2	21%	-19%	5%	-6%

Composite and Item-Level Trending Results

Table 7-8 presents trending results on each of the 12 patient safety culture composites.

Table 7-9 presents similar trending results for the 42 survey items. Table 7-10 and Table 7-11 present the trending results for patient safety grade and number of events reported over the past 12 months, respectively.

Table 7-8. Trending: Composite-Level Results—2016 Database Hospitals

		Composite % Positive Response						
	Patient Safety Culture Composites	**Most Recent**	**Previous**	**Change**	**Maximum Increase**	**Maximum Decrease**	**Average Increase**	**Average Decrease**
1.	**Teamwork Within Units**	82%	82%	0%	21%	-14%	4%	-3%
2.	**Supervisor/Manager Expectations & Actions Promoting Patient Safety**	80%	77%	3%	28%	-30%	5%	-3%
3.	**Organizational Learning—Continuous Improvement**	75%	74%	1%	21%	-18%	5%	-4%
4.	**Management Support for Patient Safety**	74%	74%	0%	27%	-22%	5%	-5%
5.	**Feedback & Communication About Error**	70%	69%	1%	27%	-15%	5%	-4%
6.	**Frequency of Events Reported**	68%	68%	0%	23%	-24%	4%	-4%
7.	**Overall Perceptions of Patient Safety**	68%	67%	1%	30%	-24%	5%	-4%
8.	**Communication Openness**	65%	63%	2%	31%	-15%	5%	-4%
9.	**Teamwork Across Units**	64%	62%	2%	21%	-16%	5%	-4%
10.	**Staffing**	55%	57%	-2%	29%	-23%	5%	-5%
11.	**Handoffs & Transitions**	50%	48%	2%	32%	-26%	5%	-4%
12.	**Nonpunitive Response to Error**	47%	45%	2%	31%	-24%	6%	-4%

Note: Based on data from 326 trending hospitals that had composite-level scores; the number of respondents was 240,717 for the most recent results and 216,719 for the previous results.

Table 7-9. Trending: Item-Level Results—2016 Database Hospitals (Page 1 of 4)

		Item % Positive Response						
Item	**Survey Items by Composite**	**Most Recent**	**Previous**	**Change**	**Maximum Increase**	**Maximum Decrease**	**Average Increase**	**Average Decrease**
1.	**Teamwork Within Units**							
A1	1. People support one another in this unit.	88%	87%	1%	25%	-25%	4%	-3%
A3	2. When a lot of work needs to be done quickly, we work together as a team to get the work done.	87%	87%	0%	26%	-18%	3%	-3%
A4	3. In this unit, people treat each other with respect.	81%	80%	1%	27%	-22%	4%	-3%
A11	4. When one area in this unit gets really busy, others help out.	73%	72%	1%	26%	-18%	5%	-4%
2.	**Supervisor/Manager Expectations & Actions Promoting Patient Safety**							
B1	1. My supv/mgr says a good word when he/she sees a job done according to established patient safety procedures.	80%	76%	4%	29%	-16%	6%	-3%
B2	2. My supv/mgr seriously considers staff suggestions for improving patient safety.	81%	78%	3%	26%	-23%	6%	-3%
B3R	3. Whenever pressure builds up, my supv/mgr wants us to work faster, even if it means taking shortcuts.	78%	75%	3%	40%	-58%	6%	-4%
B4R	4. My supv/mgr overlooks patient safety problems that happen over and over.	80%	77%	3%	31%	-59%	5%	-4%
3.	**Organizational Learning—Continuous Improvement**							
A6	1. We are actively doing things to improve patient safety.	85%	85%	0%	21%	-14%	4%	-4%
A9	2. Mistakes have led to positive changes here.	66%	66%	0%	31%	-22%	5%	-5%
A13	3. After we make changes to improve patient safety, we evaluate their effectiveness.	72%	72%	0%	33%	-19%	6%	-5%

Note: Based on data from 326 trending hospitals. The number of respondents was 240,717 for the most recent results and 216,719 for the previous results, but the exact number of respondents will vary from item to item. The item's survey location is shown to the left. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Table 7-9. Trending: Item-Level Results—2016 Database Hospitals (Page 2 of 4) (continued)

		Item % Positive Response						
Item	**Survey Items by Composite**	**Most Recent**	**Previous**	**Change**	**Maximum Increase**	**Maximum Decrease**	**Average Increase**	**Average Decrease**
4.	**Management Support for Patient Safety**							
F1	1. Hospital mgmt provides a work climate that promotes patient safety.	83%	82%	1%	24%	-24%	5%	-5%
F8	2. The actions of hospital mgmt show that patient safety is a top priority.	78%	77%	1%	23%	-23%	6%	-5%
F9R	3. Hospital mgmt seems interested in patient safety only after an adverse event happens.	62%	62%	0%	40%	-31%	6%	-6%
5.	**Feedback and Communication About Error**							
C1	1. We are given feedback about changes put into place based on event reports.	63%	62%	1%	33%	-25%	6%	-5%
C3	2. We are informed about errors that happen in this unit.	70%	69%	1%	33%	-17%	5%	-4%
C5	3. In this unit, we discuss ways to prevent errors from happening again.	77%	75%	2%	27%	-21%	5%	-4%
6.	**Frequency of Events Reported**							
D1	1. When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?	63%	62%	1%	24%	-25%	5%	-4%
D2	2. When a mistake is made, but has no potential to harm the patient, how often is this reported?	64%	64%	0%	25%	-24%	5%	-4%
D3	3. When a mistake is made that could harm the patient, but does not, how often is this reported?	76%	77%	-1%	25%	-23%	4%	-4%

Note: Based on data from 326 trending hospitals. The number of respondents was 240,717 for the most recent results and 216,719 for the previous results, but the exact number of respondents will vary from item to item. The item's survey location is shown to the left. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Table 7-9. Trending: Item-Level Results—2016 Database Hospitals (Page 3 of 4) (continued)

		Item % Positive Response						
Item	**Survey Items by Composite**	**Most Recent**	**Previous**	**Change**	**Maximum Increase**	**Maximum Decrease**	**Average Increase**	**Average Decrease**
7.	**Overall Perceptions of Patient Safety**							
A10R	1. It is just by chance that more serious mistakes don't happen around here.	63%	63%	0%	29%	-44%	5%	-5%
A15	2. Patient safety is never sacrificed to get more work done.	66%	64%	2%	63%	-20%	8%	-5%
A17R	3. We have patient safety problems in this unit.	66%	66%	0%	43%	-58%	6%	-5%
A18	4. Our procedures and systems are good at preventing errors from happening.	76%	75%	1%	29%	-14%	5%	-4%
8.	**Communication Openness**							
C2	1. Staff will freely speak up if they see something that may negatively affect patient care.	78%	77%	1%	27%	-22%	5%	-3%
C4	2. Staff feel free to question the decisions or actions of those with more authority.	50%	49%	1%	43%	-19%	5%	-5%
C6R	3. Staff are afraid to ask questions when something does not seem right.	66%	63%	3%	44%	-43%	6%	-5%
9.	**Teamwork Across Units**							
F2R	1. Hospital units do not coordinate well with each other.	52%	50%	2%	27%	-21%	6%	-5%
F4	2. There is good cooperation among hospital units that need to work together.	64%	63%	1%	36%	-19%	6%	-5%
F6R	3. It is often unpleasant to work with staff from other hospital units.	65%	63%	2%	22%	-36%	5%	-4%
F10	4. Hospital units work well together to provide the best care for patients.	74%	72%	2%	26%	-29%	6%	-4%

Note: Based on data from 326 trending hospitals. The number of respondents was 240,717 for the most recent results and 216,719 for the previous results, but the exact number of respondents will vary from item to item. The item's survey location is shown to the left. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Table 7-9. Trending: Item-Level Results—2016 Database Hospitals (Page 4 of 4) (continued)

		Item % Positive Response						
Item	**Survey Items by Composite**	**Most Recent**	**Previous**	**Change**	**Maximum Increase**	**Maximum Decrease**	**Average Increase**	**Average Decrease**
10.	**Staffing**							
A2	1. We have enough staff to handle the workload.	53%	55%	-2%	37%	-29%	8%	-8%
A5R	2. Staff in this unit work longer hours than is best for patient care.	51%	53%	-2%	47%	-33%	5%	-6%
A7R	3. We use more agency/temporary staff than is best for patient care.	66%	67%	-1%	53%	-51%	6%	-7%
A14R	4. We work in “crisis mode” trying to do too much, too quickly.	51%	51%	0%	33%	-27%	6%	-6%
11.	**Handoffs & Transitions**							
F3R	1. Things “fall between the cracks” when transferring patients from one unit to another.	45%	44%	1%	31%	-22%	6%	-5%
F5R	2. Important patient care information is often lost during shift changes.	56%	54%	2%	40%	-44%	6%	-5%
F7R	3. Problems often occur in the exchange of information across hospital units.	49%	47%	2%	29%	-25%	6%	-4%
F11R	4. Shift changes are problematic for patients in this hospital.	50%	49%	1%	53%	-40%	6%	-5%
12.	**Nonpunitive Response to Error**							
A8R	1. Staff feel like their mistakes are held against them.	52%	51%	1%	35%	-27%	6%	-5%
A12R	2. When an event is reported, it feels like the person is being written up, not the problem.	50%	49%	1%	26%	-26%	6%	-5%
A16R	3. Staff worry that mistakes they make are kept in their personnel file.	38%	35%	3%	53%	-27%	7%	-4%

Note: Based on data from 326 trending hospitals. The number of respondents was 240,717 for the most recent results and 216,719 for the previous results, but the exact number of respondents will vary from item to item. The item’s survey location is shown to the left. An “R” indicates a negatively worded item, where the percent positive response is based on those who responded “Strongly disagree” or “Disagree,” or “Never” or “Rarely” (depending on the response category used for the item).

Table 7-10. Trending: Distribution of Work Area/Unit Patient Safety Grades—2016 Database Hospitals

		Percentage of Respondents Within Hospitals						
Item	Work Area/Unit Patient Safety Grade	Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase	Average Decrease
E1	Excellent or Very Good	77%	77%	0%	44%	-69%	6%	-6%

Note: Based on data from 326 trending hospitals that had data for this item. The number of respondents was 240,717 for the most recent results and 216,719 for the previous results. Most recent, previous, and change columns display average percent positive scores across the trending hospitals.

Table 7-11. Trending: Distribution of Number of Events Reported in the Past 12 Months—2016 Database Hospitals

		Percentage of Respondents Within Hospitals						
Item	Events Reported in the Past 12 Months	Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase	Average Decrease
G1	1 or more events	45%	45%	0%	30%	-51%	5%	-5%

Note: Based on data from 326 trending hospitals that had data for this item. The number of respondents was 240,717 for the most recent results and 216,719 for the previous results. Most recent, previous, and change columns display average percent positive scores across the trending hospitals.

Bar Charts of Trending Results

Chart 7-1 shows the percentages of trending hospitals that increased, decreased, or did not change for each of the 12 patient safety culture composites. The chart shows that:

- *Supervisor/Manager Expectations and Actions Promoting Patient Safety* had the largest percentage of hospitals that increased 5 percentage points or more; 33 percent of hospitals increased by at least 5 percentage points.
- *Staffing* had the largest percentage of hospitals that decreased 5 percentage points or more; 32 percent of hospitals decreased by at least 5 percentage points.

Chart 7-2 displays results for the percentages of trending hospitals that increased, decreased, or did not change on work area/unit patient safety grades (percent providing grades of "Excellent" or "Very Good") and shows that:

- 23 percent of hospitals *increased* by 5 percentage points or more.
- 57 percent of hospitals changed less than 5 percentage points.
- 20 percent of hospitals *decreased* by 5 percentage points or more.

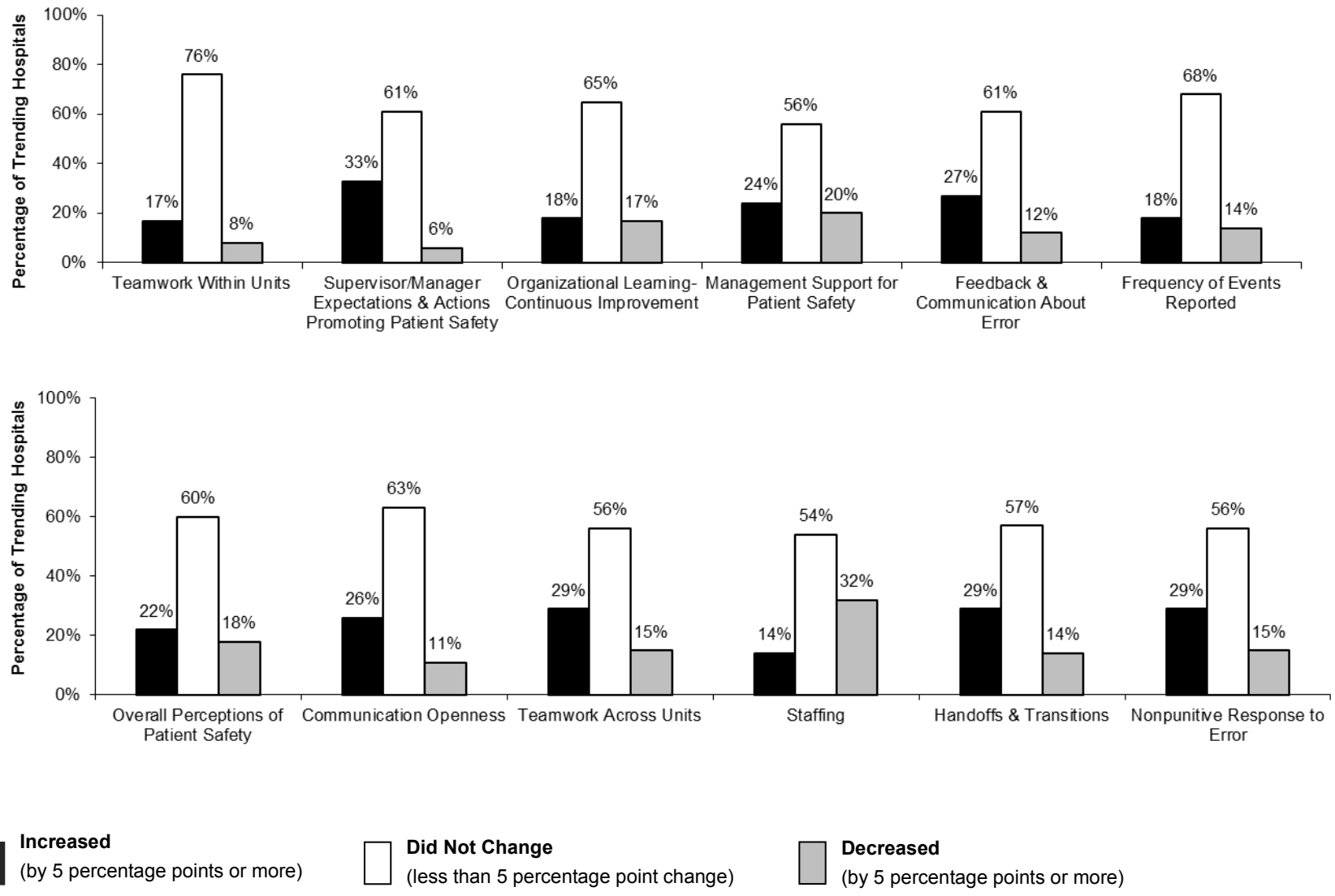
Chart 7-3 displays results for the percentages of trending hospitals that increased, decreased, or did not change in the percentage of respondents reporting one or more events (percentages may not add to 100 due to rounding) and shows that:

- 26 percent of hospitals *increased* by 5 percentage points or more.
- 53 percent of hospitals changed less than 5 percentage points.
- 22 percent of hospitals *decreased* by 5 percentage points or more.

Charts 7-4, 7-5, and 7-6 display the overall number of composites for which trending hospitals increased, decreased, or did not change:

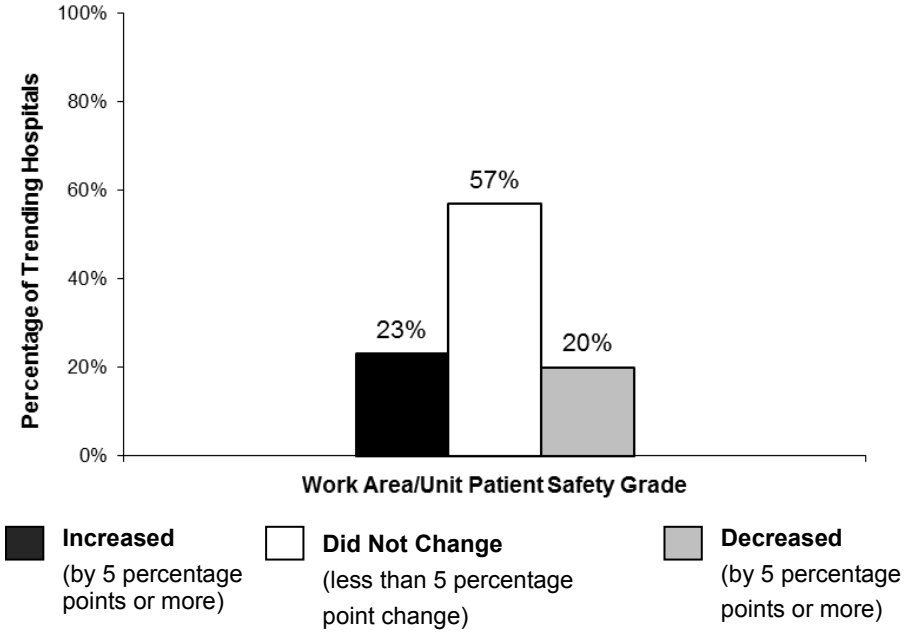
- Most hospitals (63 percent) *increased* by 5 percentage points or more on at least one composite.
- Nearly two-thirds (62 percent) of hospitals changed less than 5 percentage points on seven or more composites.
- Slightly more than half of hospitals (52 percent) *decreased* by 5 percentage points or more on at least one composite.

Chart 7-1. Trending: Percentage of 2016 Hospitals That Increased, Decreased, or Did Not Change on Each Composite



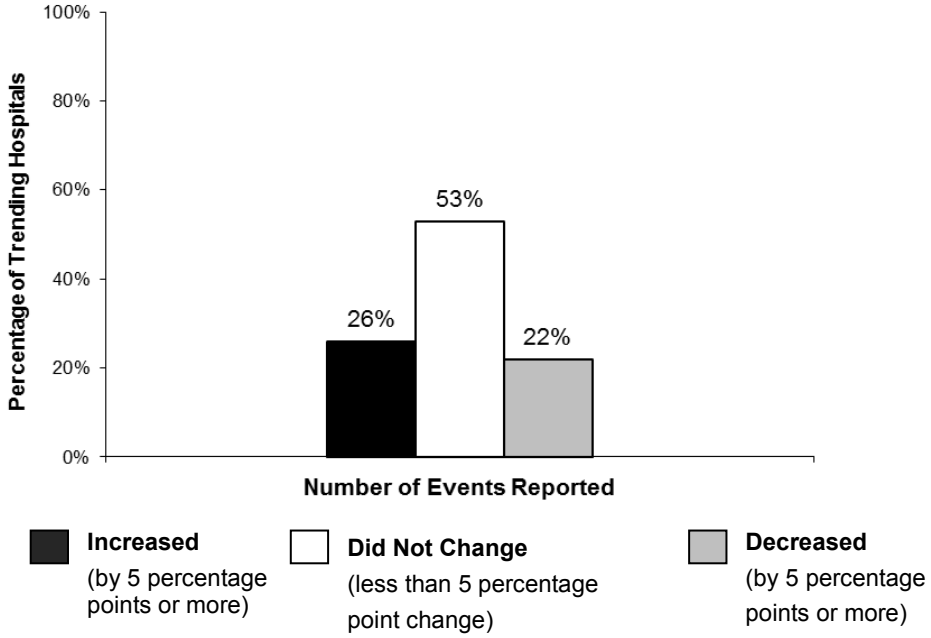
Note: Based on data from 326 trending hospitals. Percentages may not add to 100 due to rounding.

Chart 7-2. Trending: Percentage of 2016 Hospitals That Increased, Decreased, or Did Not Change on Work Area/Unit Patient Safety Grade as "Excellent" or "Very Good"



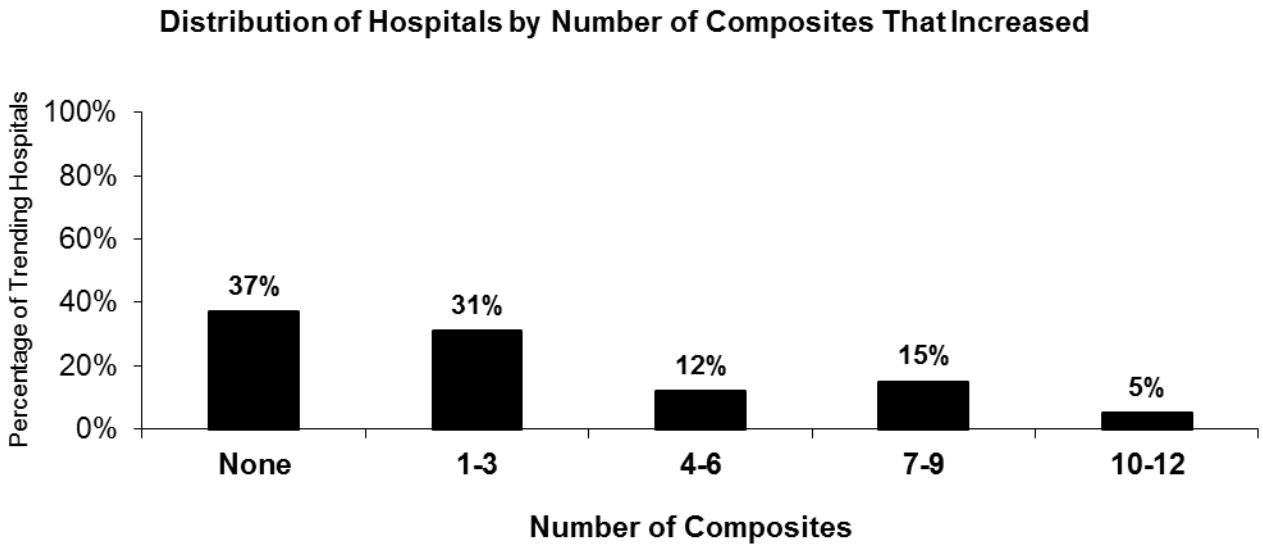
Note: Based on data from 326 trending hospitals that responded to this item.

Chart 7-3. Trending: Percentage of 2016 Hospitals That Increased, Decreased, or Did Not Change on Number of Events Reported as Equal to One or More Events Reported



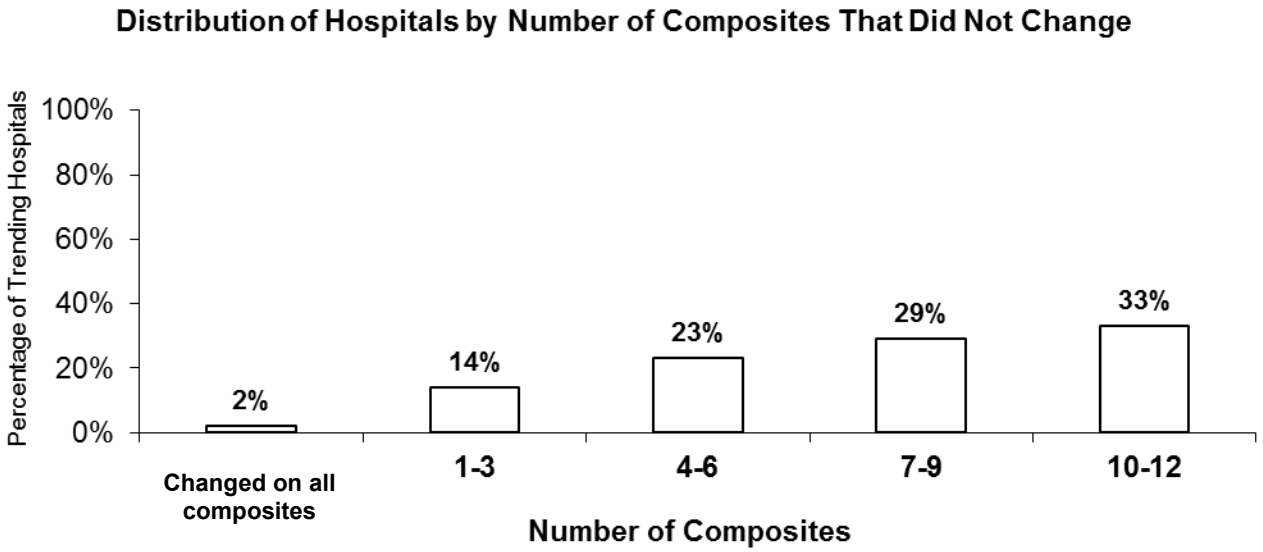
Note: Based on data from 326 trending hospitals that responded to this item.

Chart 7-4. Trending: Distribution of 2016 Hospitals by Number of Composites That Increased by 5 Percentage Points or More



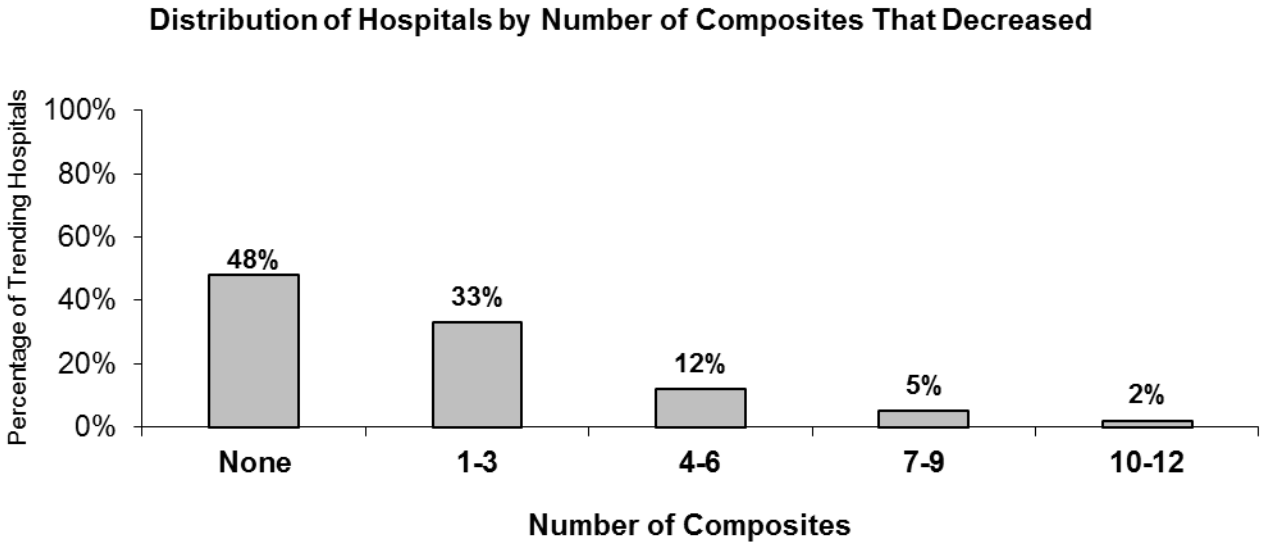
Note: Based on data from 326 trending hospitals that measured all 12 survey dimensions. Percentages may not add to 100 due to rounding.

Chart 7-5. Trending: Distribution of 2016 Hospitals by Number of Composites That Did Not Change by 5 Percentage Points or More



Note: Based on data from 326 trending hospitals that measured all 12 survey dimensions. Percentages may not add to 100 due to rounding.

Chart 7-6. Trending: Distribution of 2016 Hospitals by Number of Composites That Decreased by 5 Percentage Points or More



Note: Based on data from 326 trending hospitals that measured all 12 survey dimensions. Percentages may not add to 100 due to rounding.

Appendixes C and D: Trending Results by Hospital and Respondent Characteristics

Part III of the report contains Appendixes C and D, which show trends over time for the 326 hospitals that administered the survey and submitted data more than once. Average percent positive scores from the most recent and previous administrations are shown on the survey composites and items, broken down by the following hospital and respondent characteristics:

Appendix C: Trending Results by Hospital Characteristics

- Bed size
- Teaching status
- Ownership
- Geographic region

Appendix D: Trending Results by Respondent Characteristics

- Work area/unit
- Staff position
- Interaction with patients
- Tenure in current work area/unit

Because there are many breakout tables, they are included in Appendixes C and D. Highlights of the findings from the breakout tables in these appendixes are provided on the following pages. The appendixes are available on the Web at: www.ahrq.gov/qual/hospsurvey16/.

Highlights From Appendix C: Trending Results by Hospital Characteristics

Bed Size (Tables C-1, C-3)

- Hospitals with *6–24* beds increased on all 12 of the patient safety culture composites; increases ranged from 4 to 11 percentage points.
- Hospitals with *6–24* beds had the greatest increase in the percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (a 5 percentage point increase, from 81 percent to 86 percent).

Teaching Status and Ownership (Table C-5)

- Both *teaching* and *nonteaching* hospitals showed the largest increase of 3 percentage points on *Supervisor/Manager Expectations and Actions Promoting Patient Safety*.
- *Nongovernment-owned* hospitals showed the largest increase of 3 percentage points on *Supervisor/Manager Expectations and Actions Promoting Patient Safety*. *Government-owned* hospitals' largest increase was 2 percentage points on the same composite.

Geographic Region (Tables C-9, C-11)

- *West Central* region hospitals increased 8 percentage points on *Nonpunitive Response to Error* and 5 percentage points on *Overall Perceptions of Safety*.

- *West Central* region hospitals had the greatest increase of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (a 3 percentage point increase, from 76 percent to 79 percent.

Highlights From Appendix D: Trending Results by Respondent Characteristics

Work Area/Unit (Table D-1)

- *Surgery* increased 4 percentage points on *Supervi*sor/*Manager Expectations and Actions Promoting Patient Safety*.
- *Anesthesiology* increased 3 percentage points on the percentage of respondents reporting one or more events in the past year.

Staff Position (Table D-5, D-7)

- *Attending/staff physician, resident physician/physician in training, or physician assistant/nurse practitioner* increased 6 percentage points on *Supervisor/Manager Expectations and Actions Promoting Patient Safety*.
- *Dietitians* increased 5 percentage points on the percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good."

Interaction With Patients (Table D-9)

- Respondents *with* direct interaction and *without* direct interaction with patients increased 3 percentage points on *Supervi*sor/*Manager Expectations and Actions Promoting Patient Safety*.

Tenure in Current Work Area/Unit (Table D-13)

- Respondents with *1 to 5 years* in their work area/unit increased 3 percentage points on *Nonpunitive Response to Error* and *Supervi*sor/*Manager Expectations and Actions Promoting Patient Safety*; respondents with *11 to 15 years* in their work area/unit also increased 3 percentage points on *Supervi*sor/*Manager Expectations and Actions Promoting Patient Safety*.

Chapter 8. What's Next? Action Planning for Improvement

The seven steps of action planning outlined in this chapter are primarily based on the book *Designing and Using Organizational Surveys: A Seven-Step Process* (Church and Waclawski, 1998).

Highlights

- The delivery of survey results is not the *end point* in the survey process; it is just the *beginning.*
- Often, the perceived failure of surveys to create lasting change is actually due to faulty or nonexistent action planning or survey followup.
- Seven steps of action planning are provided to give hospitals guidance on next steps to take to turn their survey results into actual patient safety culture improvement.

Seven Steps of Action Planning

Administering the hospital survey can be considered an "intervention," a means of educating hospital staff and building awareness about issues of concern related to patient safety. But it should not be the only goal of conducting the survey. Administering the survey is not enough.

Keep in mind that the delivery of survey results is not the *end point* in the survey process; it is actually just the *beginning*. Often, the perceived failure of surveys as a means for creating lasting change is actually due to faulty or nonexistent action planning or survey followup.

Seven steps of action planning are provided to help your hospital go beyond simply conducting a survey to realizing patient safety culture change. The progression is getting survey results, developing an action plan, implementing the plan, and tracking progress.

The seven steps of action planning are:

1. Understand your survey results.
2. Communicate and discuss survey results.
3. Develop focused action plans.
4. Communicate action plans and deliverables.
5. Implement action plans.
6. Track progress and evaluate impact.
7. Share what works.

Step 1: Understand Your Survey Results

It is important to review the survey results and interpret them before you develop action plans. Develop an understanding of your hospital's key strengths and areas for improvement. Examine your hospital's overall percent positive scores on the patient safety culture composites and items.

- Which areas were most and least positive?
- How do your hospital's results compare with the results from the database hospitals?

Next, consider examining your survey data broken down by work area/unit or staff position.

- Are there different areas for improvement for different hospital units?
- Are there different areas for improvement for different hospital staff?
- Do any patterns emerge?
- How do your hospital's results for these breakouts compare with the results from the database hospitals?

Finally, if your hospital administered the survey more than once, compare your most recent results with your previous results to examine change over time.

- Did your hospital have an increase in its scores on any of the survey composites or items?
- Did your hospital have a decrease in its scores?
- When you consider the types of patient safety actions that your hospital implemented between each survey administration, do you notice improvements in those areas?

After reviewing the survey results carefully, identify two or three areas for improvement to avoid focusing on too many issues at one time.

Step 2: Communicate and Discuss Survey Results

Common complaints among survey respondents are that they never get any feedback about survey results and have no idea whether anything ever happens as a result of a survey. It is therefore important to thank your staff for taking the time to complete the survey and let them know that you value their input. Sharing results from the survey throughout the hospital shows your commitment to the survey and improvement process.

Use survey feedback as an impetus for change. Feedback can be provided at the hospital level and at the department or unit level. However, to ensure respondent anonymity and confidentiality, it is important to report data only if there are enough respondents in a particular category or group. Common rules of thumb recommend not reporting data if a category has fewer than 5 or 10 respondents. For example, if a department has only four respondents, that department's data should not be reported separately because there are too few respondents to provide complete assurance of anonymity and confidentiality.

Distribute summaries of the survey results throughout the hospital in a top-down manner, beginning with senior management, administrators, medical and senior leaders, and committees, followed by department or unit managers and then staff. Managers at all levels should be expected to carefully review the findings. Summarize key findings, but also encourage

discussion about the results throughout the hospital. What do others see in the data and how do they interpret the results?

In some cases, it may not be completely clear why an area of patient safety culture was particularly low. Keep in mind that surveys are only one way of examining culture, so strive for a deeper understanding when needed. Conduct followup activities, such as focus groups or interviews with staff to find out more about an issue, why it is problematic, and how it can be improved.

Step 3: Develop Focused Action Plans

Once you identify areas for improvement in patient safety culture, you need to develop formal written action plans to ensure progress toward change. Hospitalwide, department-based, or unit-based action plans can be developed. Major goals can be established as hospitalwide action plans. Unit-specific goals can be fostered by encouraging and empowering staff to develop action plans at the unit level.

Health care organizations can use the *Action Planning Tool for the AHRQ Surveys on Patient Safety Culture.* The tool is intended for use after your organization administers the survey and analyzes the results. It provides step-by-step guidance to help survey users develop an action plan to improve patient safety culture. This tool includes an Action Plan Template your organization can use to document goals, initiatives, needed resources, process and outcome measures, and timelines. You can download the *Action Planning Tool for the AHRQ Surveys on Patient Safety Culture* at http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/planningtool.html.

Encourage action plans that are "SMART":

- **S**pecific
- **M**easurable
- **A**chievable
- **R**elevant
- **T**ime bound

When deciding whether a particular action plan or initiative would be a good fit in your facility, you may want to check the guide *Will It Work Here? A Decisionmaker's Guide to Adopting Innovations* (Brach, et al., 2008, available at http://innovations.ahrq.gov/guide/guideTOC). The guide helps users answer four overarching questions:

- Does this innovation fit?
- Should we do it here?
- Can we do it here?
- How can we do it here?

Lack of resources is often a fundamental obstacle hindering implementation of action plans. Identify funding, staffing, or other resources needed to implement action plans and take steps to obtain these resources. It is also important to identify other obstacles you may encounter when trying to implement change and to anticipate and understand the rationale behind any potential resistance toward proposed action plans.

In the planning stage, it is also important to identify quantitative and qualitative measures that can be used to evaluate progress and the impact of changes implemented. Evaluative measures will need to be assessed before, during, and after implementation of your action plan initiatives.

Step 4: Communicate Action Plans and Deliverables

After you develop your action plans, you need to communicate the plans, deliverables, and expected outcomes. Those directly involved or affected will need to know their roles and responsibilities, as well as the timeframe for implementation. Action plans and goals should also be shared widely so that their transparency encourages further accountability and demonstrates the hospitalwide commitments being made in response to the survey results.

At this step it is important for senior hospital managers and leaders to understand that they are the primary owners of the change process and that success depends on their full commitment and support. Senior-level commitment to taking action must be strong; without buy-in from the top, including medical leadership, improvement efforts are likely to fail.

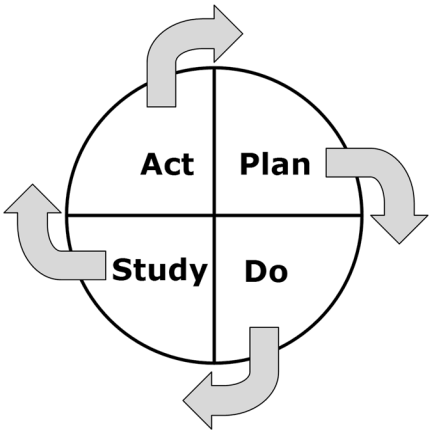
Step 5: Implement Action Plans

Implementing action plans is one of the hardest steps. Taking action requires providing needed resources and support. It requires tracking quantitative and qualitative measures of progress and success that have already been identified. It requires publicly recognizing those individuals and units who take action to drive improvement. And it requires adjustments along the way.

This step is critical to improving patient safety culture. While communicating the survey results is important, taking action makes the real difference. However, as the Institute for Healthcare Improvement (2016) suggests, actions do not have to be major permanent changes. In fact, it is worthwhile to strive to implement easier smaller changes that are likely to have a positive impact rather than big changes with unknown probability of success.

The “Plan-Do-Study-Act” cycle (Langley, et al., 1996), shown in Chart 8-1, is a pilot-study approach to change. It involves developing a small-scale plan to test a proposed change (Plan), carrying out the plan (Do), observing and learning from the results (Study), and determining what change should be made to the plan (Act). Implementation of action plans can occur on a small scale within a single unit to examine impact and refine plans before rolling out the changes on a larger scale to other units or hospitals.

Figure 8-1. Plan-Do-Study-Act Cycle



Step 6: Track Progress and Evaluate Impact

Use quantitative and qualitative measures to review progress and evaluate whether a specific change actually leads to improvement. Ensure that there is timely communication of progress toward action plans on a regular basis. If you determine that a change has worked, communicate that success to staff by telling them what was changed and that it was done in response to the safety culture survey results. Be sure to make the connection to the survey so that the next time the survey is administered, staff will know that it will be worthwhile to participate again because actions were taken based on the prior survey's results.

Alternatively, your evaluation may show that a change is not working as expected or has failed to reach its goals and will need to be modified or replaced by another approach. Before you drop the effort completely, try to determine why it failed and whether it might be worth it to make adjustments.

Keep in mind that it is important not to reassess culture too frequently because lasting culture change will be slow and may take years. Frequent assessments of culture are likely to find temporary shifts or improvements that may come back down to baseline levels in the longer term if changes are not sustained. When planning to reassess culture, it is also very important to obtain high survey response rates. Otherwise, it will not be clear whether changes in survey results over time are due to true changes in attitudes or are caused by surveying different staff each time.

Step 7: Share What Works

In step 6, you track measures to identify which changes result in improvement. Once your hospital has found effective ways to address a particular area, the changes can be implemented on a broader scale to other departments within the hospital and to other hospitals. Be sure to share your successes with outside hospitals and health care systems as well.

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Notes: Description of Data Cleaning and Calculations

This notes section provides additional detail regarding how various statistics presented in this report were calculated.

Data Cleaning

Each participating hospital submitted individual-level survey data. Once the data were submitted, response frequencies were run on each hospital's data to look for out-of-range values, missing variables, or other data anomalies. When data problems were found, hospitals were contacted and asked to make corrections and resubmit their data. In addition, each participating hospital was sent a copy of its data frequencies to verify that the dataset received was correct.

Records of respondents who supplied the same answers within or across sections A, B, C, and F (i.e., straight-lined) or who answered only demographic items were deleted before any analyses.

Response Rates

As part of the data submission process, hospitals were asked to provide their response rate numerator and denominator. Response rates were calculated using the formula below.

$$Response\ Rate = \frac{Number\ of\ complete,\ returned\ surveys}{Number\ of\ surveys\ distributed\ -\ Ineligibles}$$

Numerator = Number of complete, returned surveys after being cleaning for straight-lining. The numerator equals the number of individual survey records submitted to the database. It should *exclude* surveys that were returned blank on all nondemographic survey items but *include* surveys where at least one nondemographic survey item was answered.

Denominator = The total number of surveys distributed minus ineligibles. Ineligibles include deceased individuals and those who were not employed at the hospital during data collection.

Calculation of Percent Positive Scores

Most of the survey items ask respondents to answer using 5-point response categories in terms of agreement (Strongly agree, Agree, Neither, Disagree, Strongly disagree) or frequency (Always, Most of the time, Sometimes, Rarely, Never). Three of the 12 patient safety culture composites use the frequency response option (*Feedback and Communication About Error*, *Communication Openness*, and *Frequency of Events Reported*), while the other 9 composites use the agreement response option.

Item-Level Percent Positive Response

Both positively worded items (such as "People support one another in this unit") and negatively worded items (such as "We have patient safety problems in this unit") are included in the survey. Calculating the percent positive response on an item is different for positively and negatively worded items:

- **For positively worded items**, percent positive response is the combined percentage of respondents within a hospital who answered "Strongly agree" or "Agree," or "Always" or "Most of the time," depending on the response categories used for the item.

  For example, for the item "People support one another in this unit," if 50 percent of respondents within a hospital *Strongly agree* and 25 percent *Agree*, the item-level percent positive response for that hospital would be 50% + 25% = 75% positive.

- **For negatively worded items**, percent positive response is the combined percentage of respondents within a hospital who answered "Strongly disagree" or "Disagree," or "Never" or "Rarely," because a negative answer on a negatively worded item indicates a *positive* response.

  For example, for the item "We have patient safety problems in this unit," if 60 percent of respondents within a hospital S*trongly disagree* and 20 percent *Disagree*, the item-level percent positive response would be 80 percent positive (i.e., 80 percent of respondents *do not* believe they have patient safety problems in their work area).

Composite-Level Percent Positive Response

The survey's 42 items measure 12 areas, or composites, of patient safety culture. Each of the 12 patient safety culture composites includes 3 or 4 survey items. Composite scores were calculated for each hospital by averaging the percent positive response on the items within a composite. For example, for a three-item composite, if the item-level percent positive responses were 50 percent, 55 percent, and 60 percent, the hospital's composite-level percent positive response would be the average of these three percentages, or 55 percent positive.

Item and Composite Percent Positive Scores

To calculate your hospital's composite score, simply average the percentage of positive responses to each item in the composite. Here is an example of computing a composite score for *Overall Perceptions of Patient Safety*:

1. There are four items in this composite—two are positively worded (items A15 and A18) and two are negatively worded (items A10 and A17). Keep in mind that disagreeing with a negatively worded item indicates a *positive* response.
2. Calculate the percentage of positive responses at the item level. (See example in Table N1.)

Table N1. Example of Computing Item and Composite Percent Positive Scores

Items Measuring Overall Perceptions of Patient Safety	For Positively Worded Items, Number of "Strongly Agree" or "Agree" Responses	For Negatively Worded Items, Number of "Strongly Disagree" or "Disagree" Responses	Total Number of Responses to the Item	Percent Positive Response on Item
Item A15: positively worded "Patient safety is never sacrificed to get more work done"	120	NA*	260	120/260=46%
Item A18: positively worded "Our procedures and systems are good at preventing errors from happening"	130	NA*	250	130/250=52%
Item A10: negatively worded "It is just by chance that more serious mistakes don't happen around here"	NA*	110	240	110/240=46%
Item A17: negatively worded "We have patient safety problems in this unit"	NA*	140	250	140/250= 56%
Composite Score % Positive = (46% + 52% + 46% + 56%) / 4 = **50%**				

* NA = Not applicable.

In this example, there were four items with percent positive response scores of 46 percent, 52 percent, 46 percent, and 56 percent. Averaging these item-level percent positive scores results in a composite score of .50, or 50 percent, on *Overall Perceptions of Patient Safety*. In this example, an average of about 50 percent of the respondents responded positively to the survey items in this composite.

Table N2 shows how to calculate the percent positive response for Overall Patient Safety Grade (E1) and Number of Events Reported (G1).

Table N2. Example of Computing Patient Safety Grade and Number of Events Reported

Items	Number of "Excellent" or "Very Good" Responses	Number of "1 to 2 event reports" or "3 to 5 event reports" or "6 to 10 event reports" or "11 to 20 event reports" or "21 event reports or more"	Total Number of Responses to the Item	Percent Positive Response on Item
Item E1:				
"Please give your work area/unit in this hospital an overall grade on patient safety."	193	NA*	250	193/250=77%
ItemG1:				
"In the past 12 months, how many event reports have you filled out and submitted?"	NA*	106	240	106/240=44%

* NA = Not applicable.

In this example, the Overall Patient Safety Grade (E1) percent positive response is calculated by combining the percentage of respondents that answered "Excellent" and "Very Good", and dividing by the total number of respondents that answered E1. The Number of Events Reported (G1) percent positive response is calculated by combining the percentage of respondents that answered that they reported one or more events in the past 12 months, and dividing by the total number of respondents that answered G1.

Once you calculate your hospital's percent positive response for each of the 12 safety culture composites, Overall Patient Safety Grade, and Number of Events Reported, you can compare your results with the composite-level results from the database hospitals.

Minimum Number of Responses

Beginning with the 2010 database report, we enacted several new rules regarding a minimum number of responses for calculating the percent positive scores. We calculated percent positive scores only for hospitals that had at least 10 completed surveys. Starting with the 2016 Comparative Database, if a hospital had at least 1 respondent in a breakout category (e.g., work area/unit, staff position, direct interaction with patients), statistics were calculated for that breakout category.

Percentiles

Percentiles were computed using the SAS® software default method. The first step in this procedure is to rank order the percent positive scores from all the participating hospitals, from lowest to highest. The next step is to multiply the number of hospitals (n) by the percentile of interest (p), which in our case would be the 10th, 25th, 50th, 75th, or 90th percentile.

For example, to calculate the 10th percentile, one would multiply 680 (the total number of hospitals) by .10 (10th percentile). The product of n x p is equal to j + g, where j is the integer and g is the number after the decimal. If g equals 0, the percentile is equal to the percent positive value of the hospital in the jth position plus the percent positive value of the hospital in the jth + 1 position, divided by 2 $[(X_{(j)} + X_{(j+1)})/2]$. If g is *not* equal to 0, the percentile is equal to the percent positive value of the hospital in the jth + 1 position.

The following examples show how the 10th and 50th percentiles would be computed using a sample of percent positive scores from 12 hospitals (using fake data shown in Table N3). First, the percent positive scores are sorted from low to high on Composite "A."

Table N3. Data Table for Example of How To Compute Percentiles

Hospital	Composite "A" % Positive Score	
1	33%	
2	48%	←10th percentile score = 48%
3	52%	
4	60%	
5	63%	
6	64%	←50th percentile score = 65%
7	66%	
8	70%	
9	72%	
10	75%	
11	75%	
12	78%	

10th percentile

1. For the 10th percentile, we would first multiply the number of hospitals by 0.10: (n x p = 12 x 0.10 = 1.2).
2. The product of n x p = 1.2, where j = 1 and g = 2. Since g is *not* equal to 0, the 10th percentile score is equal to the percent positive value of the hospital in the jth + 1 position:

   a. j equals 1.
   b. The 10th percentile equals the value for the hospital in the 2nd position = 48%.

50th percentile

1. For the 50th percentile, we would first multiply the number of hospitals by .50: (n x p = 12 x .50 = 6.0).
2. The product of n x p = 6.0, where j = 6 and g = 0. Since g = 0, the 50th percentile score is equal to the percent positive value of the hospital in the jth position plus the percent positive value of the hospital in the jth + 1 position, divided by 2:

   a. j equals 6.
   b. The 50th percentile equals the average of the hospitals in the 6th and 7th positions (64% + 66%)/2 =65%.

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