

# HOSPITAL SURVEY ON PATIENT SAFETY CULTURE

## 2014 User Comparative Database Report



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PATIENT  
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# Hospital Survey on Patient Safety Culture: 2014 User Comparative Database Report

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**Contract No. HHSA 290201300003C**

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**AHRQ Publication No. 14-0019-EF**  
**March 2014**



**Agency for Healthcare Research and Quality**  
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**Suggested Citation:**

Sorra J, Famolaro T, Yount ND, et al. Hospital Survey on Patient Safety Culture 2014 User Comparative Database Report. (Prepared by Westat, Rockville, MD, under Contract No. HHSA 290201300003C). Rockville, MD: Agency for Healthcare Research and Quality; March 2014. AHRQ Publication No. 14-0019-EF.

**No investigators have any affiliations or financial involvement (e.g., employment, consultancies, honoraria, stock options, expert testimony, grants or patents received or pending, or royalties) that conflict with material presented in this report.**

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Appendixes cited in this report are provided electronically at:

<http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/2014/index.html>.

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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*,<sup>i</sup> 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 2014 user comparative database report displays results from 653 hospitals and 405,281 hospital staff respondents. This report also includes a chapter on trending that presents results showing change over time for 359 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 as long as the data were no more than 4.5 years old. Starting with the current database, data will be collected every 2 years and may be a maximum of only 2 years old. Hospitals must submit their 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.

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<sup>i</sup> Agency for Healthcare Research and Quality. Hospital Survey on Patient Safety Culture. [www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/index.html](http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/index.html). Last accessed on January 8, 2014.

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.

## **2014 Survey Administration Statistics**

- For the 2014 report, 653 hospitals submitted data.
- The average hospital response rate was 54 percent, with an average of 621 completed surveys per hospital.
- Most hospitals (76 percent) administered Web surveys. Hospitals administering Web surveys had, on average, lower response rates (54 percent) compared with response rates from paper (69 percent), yet slightly higher response rates compared with mixed-mode surveys (52 percent).

## **Hospital Characteristics**

- Database hospitals represent a range of bed sizes and geographic regions.
- Most database hospitals are nonteaching (63 percent) and non–government owned (79 percent).
- Overall, the characteristics of the 653 database hospitals are fairly consistent with the distribution of U.S. hospitals registered with the American Hospital Association (AHA).

## **Respondent Characteristics**

- There were 405,281 hospital staff respondents.
- The top three work areas of respondents were:
  - Other (31 percent).<sup>ii</sup>
  - Medicine (11 percent).
  - Surgery (10 percent).
- The top three staff positions of respondents were:
  - Registered nurse or licensed vocational nurse/licensed practical nurse (35 percent).
  - Other (22 percent).<sup>iii</sup>
  - Technician (e.g., EKG, Lab, Radiology) (11 percent).

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<sup>ii</sup>Many respondents chose “Other,” which allowed them to note their specific work area or unit. However, this information was not collected from the hospitals.

<sup>iii</sup>Many respondents chose “Other,” which allowed them to note their staff position. However, this information was not collected from the hospitals.

- Most respondents (76 percent) indicated that they had direct interaction with patients, and most respondents worked either less than 40 hours a week (45 percent) or 40 to 59 hours per week (48 percent).

## Areas of Strength for Most Hospitals

The three areas of strength or composites with the highest average percent positive responses were<sup>iv</sup>:

1. ***Teamwork Within Units (81 percent positive response)***—the extent to which staff support each other, treat each other with respect, and work together as a team.
2. ***Supervisor/Manager Expectations and Actions Promoting Patient Safety (76 percent positive response)***—the extent to which 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 response)***—the extent to which 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 (44 percent positive response)***—the extent to which 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 (47 percent positive response)***—the extent to which important patient care information is transferred across hospital units and during shift changes.
3. ***Staffing (55 percent positive response)***—the extent to which 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

- The smallest hospitals (6-24 beds) had the highest percent positive average across all composites (69 percent); larger hospitals (400 beds or more) had the lowest (61 percent positive).
- Smaller hospitals (6-24 beds) had the highest percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (81 percent); larger hospitals (400 beds or more) had the lowest (71 percent).

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<sup>iv</sup>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”).

## Teaching Status and Ownership and Control

- Nonteaching hospitals on average scored higher than teaching hospitals by 5 percentage points or more on 6 of the 12 composites.
- Non–government-owned hospitals had a higher percentage of respondents who reported one or more events in the past year (45 percent) than government-owned hospitals (37 percent).

## Geographic Region

- East South Central<sup>v</sup> hospitals had the highest average percent positive response across all composites (68 percent positive); New England hospitals had the lowest (60 percent positive).
- East South Central and 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” (80 percent); New England hospitals had the lowest (70 percent).
- West North Central hospitals had the highest percentage of respondents who reported one or more events in the past year (47 percent); the lowest percentage of respondents reporting one or more events was in the West South Central region (40 percent).

## Results by Respondent Characteristics

### Work Area/Unit

- Respondents in *Rehabilitation* had the highest average percent positive response across the composites (70 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 (61 percent); *Rehabilitation* had the lowest (38 percent).

### Staff Position

- Respondents in *Administration/Management* had the highest average percent positive response across the composites (75 percent positive); *Pharmacists* had the lowest (62 percent positive).

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<sup>v</sup>States and territories are categorized into AHA-defined regions as follows:

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

- *Administration/Management* had the highest percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (87 percent); *registered nurse, licensed vocational nurse, or licensed practical nurse* and *Pharmacists* had the lowest (71 percent).
- *Pharmacists* had the highest percentage of respondents reporting one or more events in the past year (73 percent); *Unit Assistants/Clerks/Secretaries* had the lowest (14 percent).

### **Interaction With Patients**

- Respondents *with* direct patient interaction were more positive than those *without* direct interaction on *Handoffs and Transitions* (49 percent positive compared with 42 percent positive) but less positive on *Management Support for Patient Safety* (71 percent positive compared with 77 percent positive).
- 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 (48 percent) than respondents *without* direct patient interaction (29 percent).

### **Tenure in Work Area/Unit**

- Respondents with less than a year in their current work area/unit had the highest average percent positive response across the composites (68 percent positive); respondents with 1 to 10 years had the lowest (63 percent positive).
- Respondents with less than a 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 1 to 5 years had the lowest (74 percent).
- Respondents with 6 to 10 years in their current work area/unit had the highest percentage of respondents reporting one or more events in the past year (47 percent); respondents with less than a year had the lowest (30 percent).

## **Trending: Comparing Results Over Time**

Results regarding changes over time on the patient safety culture composites, patient safety grade, and number of events reported for the 359 hospitals (of the 653 total database hospitals) that administered the survey and submitted data more than once are highlighted.

### **Trending Hospitals**

- For the 359 hospitals with trending data, the average length of time between previous and most recent survey administrations was 23 months (range: 7 months to 40 months).
- The distribution of the 359 trending hospitals by bed size, teaching status, and ownership and control is similar to the distribution of the 653 database hospitals.

## **Trending: Overall Summary Statistics**

- Across the 359 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 -1 to a change of 2 percentage points).
- The average percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” increased by 1 percentage point.

## **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 the number of composites that increased, decreased, or changed less than 5 percentage points.

## ***Trending Results by Hospital Characteristics***

### **Bed Size**

- Hospitals with 100-199 beds increased up to 3 percentage points on 11 patient safety composites.
- Hospitals with 100-199 and 300-399 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 2 percentage point increase, from 76 percent to 78 percent and from 72 to 74 percent, respectively).

### **Teaching Status and Ownership and Control**

- Teaching hospitals increased up to 3 percentage points on 9 patient safety composites; nonteaching hospitals showed increases up to 2 percentage points on 8 composites and decreased by 1 percentage point on *Management Support for Patient Safety* and *Staffing*.
- Government-owned hospitals increased up to 3 percentage points across 10 composites and non-government-owned hospitals showed increases up to 2 percentage points across 9 composites. Both government-owned and non-government-owned hospitals decreased by 1 percentage point on *Staffing*.

### **Geographic Region**

- East North Central hospitals increased up to 3 percentage points on 11 patient safety composites and decreased by 1 percentage point on *Staffing*.

## ***Trending Results by Respondent Characteristics***

### **Work Area/Unit**

- *Pharmacy* work area/units increased up to 4 percentage points on 11 patient safety composites.

### **Staff Position**

- *Pharmacists* had increases up to 4 percentage points on 9 patient safety composites.

### **Interaction With Patients**

- Respondents *with* direct interaction with patients increased up to 2 percentage points across 10 patient safety culture composites; respondents *without* direct interaction increased up to 3 percentage points across 7 composites.

### **Tenure in Work Area/Unit**

- Respondents with less than 1 year in their work area/unit increased up to 3 percentage points across 11 patient safety culture composites; respondents with 16 to 20 years in their work area/unit increased up to 3 percentage points across 9 composites.

## **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.

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 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 2014 User Comparative Database Report* consists of data from 653 hospitals and 405,281 hospital staff respondents who completed the survey.

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 359 hospitals with data from two administrations of the survey.

Appendixes A and B present overall results by hospital characteristics (bed size, teaching status, ownership and control, and geographic region) and respondent characteristics (hospital work area/unit, staff position, interaction with patients, and tenure in work area/unit).

Appendixes C and D show trend results for the 359 trending hospitals, broken down by hospital characteristics (bed size, teaching status, ownership and control, and geographic region) and 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: <i>The extent to which...</i>
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, 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

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

<b>Patient Safety Culture Composite</b>	<b>Definition: <i>The extent to which...</i></b>
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
10. Supervisor/manager expectations and actions promoting 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 ([www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/index.html](http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/index.html)) and include the survey, survey items and dimensions, user's guide, feedback report template, information about the Microsoft Excel™ Data Entry and Analysis Tool, and the Hospital Patient Safety Improvement Resource List. 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 ([www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/transguide.html](http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/transguide.html)).

## **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 paper-only surveys, 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 with the exception of demographic items) and straight-lining (where responses to all items in sections A, B, C, D, 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 2014 database hospitals conducted their survey administration.

### *Highlights*

- The 2014 database consists of data from 405,281 hospital staff respondents across 653 participating hospitals.
- The average hospital response rate was 54 percent, with an average of 621 completed surveys per hospital.
- Most hospitals (76 percent) administered Web surveys, which resulted in lower response rates (54 percent) compared with response rates from paper (69 percent) but slightly higher response rates compared with mixed-mode surveys (52 percent).

The 2014 database consists of survey data from 653 hospitals with a total of 405,281 hospital staff respondents. Participating hospitals administered the hospital survey to their staff between July 2011 and June 2013 and voluntarily submitted their data for inclusion in the database.

As shown in Table 2-1, the 653 database hospitals include 359 trending hospitals and 294 nontrending hospitals. Hospitals that submitted data for the 2014 database and previously submitted data that were collected between July 2009 and June 2011 were included for trending analysis. Of the 294 nontrending hospitals, 201 hospitals submitted data to the comparative database for the first time, while the other 93 hospitals had previously submitted data to the database.

**Table 2-1. Trending and Nontrending Overall Statistics – 2014 Database Hospitals**

Overall Statistic	Nontrending	Trending	Total Database
Number of hospitals	294	359	653
Number of individual survey respondents	151,573	253,708	405,281

Table 2-2 presents data on the number of surveys completed and administered, as well as response rate information.

**Table 2-2. Response Rate Statistics – 2014 Database Hospitals**

Summary Statistic	Average	Minimum	Maximum
Number of completed surveys per hospital	621	10	7,806
Number of surveys administered per hospital	1,372	26	28,950
Hospital response rate	54%	3%	100%

Table 2-3 presents data on the type of survey administration mode (paper, Web, or mixed mode).

**Table 2-3. Survey Administration Statistics – 2014 Database Hospitals**

Survey Administration Mode	Database Hospitals		Database Respondents	
	Number	Percent	Number	Percent
Paper only	49	8%	17,271	4%
Web only	495	76%	318,727	79%
Both paper and Web	109	17%	69,283	17%
TOTAL	653	100%	405,281	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 – 2014 Database Hospitals**

Survey Administration Mode	Average Hospital Response Rate
Paper only	69%
Web only	54%
Both paper and Web	52%

## Chapter 3. Hospital Characteristics

This chapter presents information about the distribution of database hospitals by bed size, teaching status, ownership and control, 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 control, and geographic region are presented in the following tables and are compared with the distribution of AHA-registered hospitals included in the 2011 AHA Annual Survey of Hospitals.<sup>vi</sup>

### *Highlights*

- Database hospitals represent a range of bed sizes and geographic regions.
- Most database hospitals are nonteaching (63 percent) and non–government owned (79 percent).
- Overall, the characteristics of the 653 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 (61 percent) have fewer than 200 beds, which is lower than the percentage of AHA-registered U.S. hospitals (74 percent).

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<sup>vi</sup>Data for U.S. and U.S. territory AHA-registered hospitals were obtained from 2011 AHA Annual Survey of Hospitals Database, © 2011 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 2014 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	701	11%	37	6%	3,582	1%
25-49 beds	1,451	23%	96	15%	15,168	4%
50-99 beds	1,276	20%	112	17%	31,911	8%
100-199 beds	1,280	20%	148	23%	64,451	16%
200-299 beds	684	11%	98	15%	74,418	18%
300-399 beds	409	6%	63	10%	60,370	15%
400-499 beds	201	3%	35	5%	44,001	11%
500 or more beds	315	5%	64	10%	111,380	27%
TOTAL	6,317	100%	653	100%	405,281	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 nonteaching. However, there was a smaller percentage of nonteaching hospitals in the database (63 percent) compared with AHA-registered hospitals (76 percent).

**Table 3-2. Teaching Status: Distribution of 2014 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	1,537	24%	243	37%	244,102	60%
Nonteaching	4,780	76%	410	63%	161,179	40%
TOTAL	6,317	100%	653	100%	405,281	100%

## Ownership and Control

As shown in Table 3-3, most database hospitals were non-government owned (79 percent), which is similar to the distribution of AHA-registered U.S. hospitals.

**Table 3-3. Ownership and Control: Distribution of 2014 Database Hospitals and Respondents Compared With AHA-Registered Hospitals**

Ownership and Control	AHA-Registered Hospitals		Database Hospitals		Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Government (Federal or non-Federal)	1,554	25%	140	21%	75,428	19%
Nongovernment (voluntary/nonprofit or proprietary/investor owned)	4,763	75%	513	79%	329,853	81%
TOTAL	6,317	100%	653	100%	405,281	100%

## Geographic Region

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

**Table 3-4. Geographic Region: Distribution of 2014 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	261	4%	15	2%	15,479	4%
Mid-Atlantic	573	9%	79	12%	75,378	19%
South Atlantic/Associated Territories	1,009	16%	134	21%	86,810	21%
East North Central	916	15%	162	25%	111,984	28%
East South Central	521	8%	55	8%	22,861	6%
West North Central	799	13%	48	7%	15,845	4%
West South Central	1,079	17%	70	11%	24,685	6%
Mountain	508	8%	17	3%	10,943	3%
Pacific/Associated Territories	651	10%	73	11%	41,296	10%
TOTAL	6,317	100%	653	100%	405,281	100%

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

<sup>vii</sup> 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/Pacific/Associated Territories: AZ, AK, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY, American Samoa, Guam, Marshall Islands, Northern Mariana Islands



## Chapter 4. Respondent Characteristics

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

### ***Highlights***

- There were 405,281 hospital staff respondents from 653 hospitals.
- The top three respondent work areas were:
  - Other (31 percent).
  - Medicine (11 percent).
  - Surgery (10 percent).
- The top three respondent staff positions were:
  - Registered nurse or licensed vocational nurse/licensed practical nurse (35 percent).
  - Other (22 percent).
  - Technician (e.g., EKG, Lab, Radiology) (11 percent).
- Most respondents (76 percent) indicated they had direct interaction with patients.
- Almost half of the respondents (45 percent) indicated they had worked in their current work area/unit at least 6 years.
- Most respondents worked either less than 40 hours per week (45 percent) or 40 to 59 hours per week (48 percent).

### **Work Area/Unit**

Close to one-third of respondents (31 percent) selected “Other” as their work area, followed by “Medicine” (11 percent) and “Surgery” (10 percent) (Table 4-1). 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 2014 Database Respondents**

Work Area/Unit	Database Respondents	
	Number	Percent
Other	119,863	31%
Medicine	44,130	11%
Surgery	39,406	10%
Many different hospital units/no specific unit	27,344	7%
Intensive care unit (any type)	26,487	7%
Emergency	21,835	6%
Radiology	20,412	5%
Laboratory	18,133	5%
Obstetrics	15,759	4%
Pediatrics	13,335	3%
Rehabilitation	13,124	3%
Pharmacy	12,056	3%
Psychiatry/mental health	10,623	3%
Anesthesiology	3,195	1%
<b>TOTAL</b>	<b>385,702</b>	<b>100%</b>
Missing: Did not answer or were not asked the question	19,579	
Overall total	405,281	

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

## Staff Position

More than one-third of respondents (35 percent) selected “registered nurse” or “Licensed Vocational Nurse/Licensed Practical Nurse” as their staff position, followed by “Other” (22 percent) and “Technician (e.g., EKG, Lab, Radiology)” (11 percent), as shown in Table 4-2. As with the work area/unit question, many respondents chose the “Other” response option, which allowed them to note their specific staff position, but no data are available to further describe the respondents in the “Other” staff position category.

**Table 4-2. Staff Position: Distribution of 2014 Database Respondents**

Staff Position	Database Respondents	
	Number	Percent
Registered nurse (RN) or licensed vocational nurse (LVN)/licensed practical nurse (LPN)	133,774	35%
Other	86,090	22%
Technician (EKG, Lab, Radiology)	42,947	11%
Administration/management	29,020	8%
Unit assistant/clerk/secretary	23,329	6%
Attending/staff physician, resident physician/physician in training, or physician assistant (PA)/nurse practitioner (NP)	23,178	6%
Patient care assistant/hospital aide/care partner	20,960	5%
Therapist (respiratory, physical, occupational, or speech)	17,091	4%
Pharmacist	7,210	2%
Dietitian	2,503	1%
<b>TOTAL</b>	<b>386,102</b>	<b>100%</b>
Missing: Did not answer or were not asked the question	19,179	
Overall total	405,281	

## Interaction With Patients

As shown in Table 4-3, most respondents (76 percent) indicated they had direct interaction with patients.

**Table 4-3. Interaction With Patients: Distribution of 2014 Database Respondents**

Interaction With Patients	Database Respondents	
	Number	Percent
YES, have direct patient interaction	290,215	76%
NO, do NOT have direct patient interaction	92,733	24%
<b>TOTAL</b>	<b>382,948</b>	<b>100%</b>
Missing: Did not answer or were not asked the question	22,333	
Overall total	405,281	

## Tenure With Current Hospital

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

**Table 4-4. Tenure With Current Hospital: Distribution of 2014 Database Respondents**

Tenure With Current Hospital	Database Respondents	
	Number	Percent
Less than 1 year	44,347	12%
1 to 5 years	124,457	33%
6 to 10 years	76,729	20%
11 to 15 years	48,475	13%
16 to 20 years	28,618	8%
21 years or more	55,791	15%
TOTAL	378,417	100%
Missing: Did not answer or were not asked the question	26,864	
Overall total	405,281	

**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 (45 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 2014 Database Respondents**

Tenure With Current Work Area/Unit	Database Respondents	
	Number	Percent
Less than 1 year	57,952	15%
1 to 5 years	147,027	39%
6 to 10 years	76,589	20%
11 to 15 years	42,851	11%
16 to 20 years	21,668	6%
21 years or more	31,093	8%
TOTAL	377,180	100%
Missing: Did not answer or were not asked the question	28,101	
Overall total	405,281	

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

## Tenure in Current Specialty or Profession

As shown in Table 4-6, 24 percent of respondents indicated they had worked in their current specialty 21 years or more.

**Table 4-6. Tenure in Current Specialty or Profession: Distribution of 2014 Database Respondents**

Tenure in Current Specialty or Profession	Database Respondents	
	Number	Percent
Less than 1 year	26,779	7%
1 to 5 years	98,799	26%
6 to 10 years	70,406	18%
11 to 15 years	51,893	14%
16 to 20 years	40,621	11%
21 years or more	93,376	24%
<b>TOTAL</b>	<b>381,874</b>	<b>100%</b>
Missing: Did not answer or were not asked the question	23,407	
Overall total	405,281	

## Hours Worked Per Week

As shown in Table 4-7, nearly half of respondents (48 percent) indicated they worked between 40 and 59 hours per week.

**Table 4-7. Hours Worked Per Week: Distribution of 2014 Database Respondents**

Hours Worked Per Week	Database Respondents	
	Number	Percent
Less than 20 hours per week	17,123	5%
20 to 39 hours per week	144,275	40%
40 to 59 hours per week	176,666	48%
60 to 79 hours per week	16,971	5%
80 to 99 hours per week	9,352	3%
100 hours per week or more	411	0%
<b>TOTAL</b>	<b>364,798</b>	<b>100%</b>
Missing: Did not answer or were not asked the question	40,483	
Overall total	405,281	

**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 (53 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 (81 percent positive).
  - Supervisor/Manager Expectations and Actions Promoting Patient Safety (76 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— (44 percent positive).
  - Handoffs and Transitions— (47 percent positive).
  - Staffing (55 percent positive).
- On average, most respondents within hospitals (76 percent) gave their work area or unit a grade of “Excellent” (33 percent) or “Very Good” (43 percent) on patient safety.
- On average, less than half of respondents within hospitals (44 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 document.

## 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.<sup>viii</sup> The patient safety culture composites are shown in order from the highest average percent positive response to the lowest.

## 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

- The survey items with the highest average percent positive response (86 percent positive) were from the patient safety culture composite *Teamwork Within Units*: “People support one another in this unit” and “When a lot of work needs to be done quickly, we work together as a team to get the work done.”

### Area With Potential for Improvement

- The survey item with the lowest average percent positive response (35 percent positive) was from the patient safety culture composite *Nonpunitive Response to Error*: “Staff worry that mistakes they make are kept in their personnel file.” (In other words, an average of only 35 percent of respondents in each hospital *Strongly disagreed* or *Disagreed* with this negatively worded item.)

## Patient Safety Grade

On average across hospitals, most respondents were positive, with 76 percent giving their work area or unit a patient safety grade of “Excellent” (33 percent) or “Very Good” (43 percent), as shown in Chart 5-3.

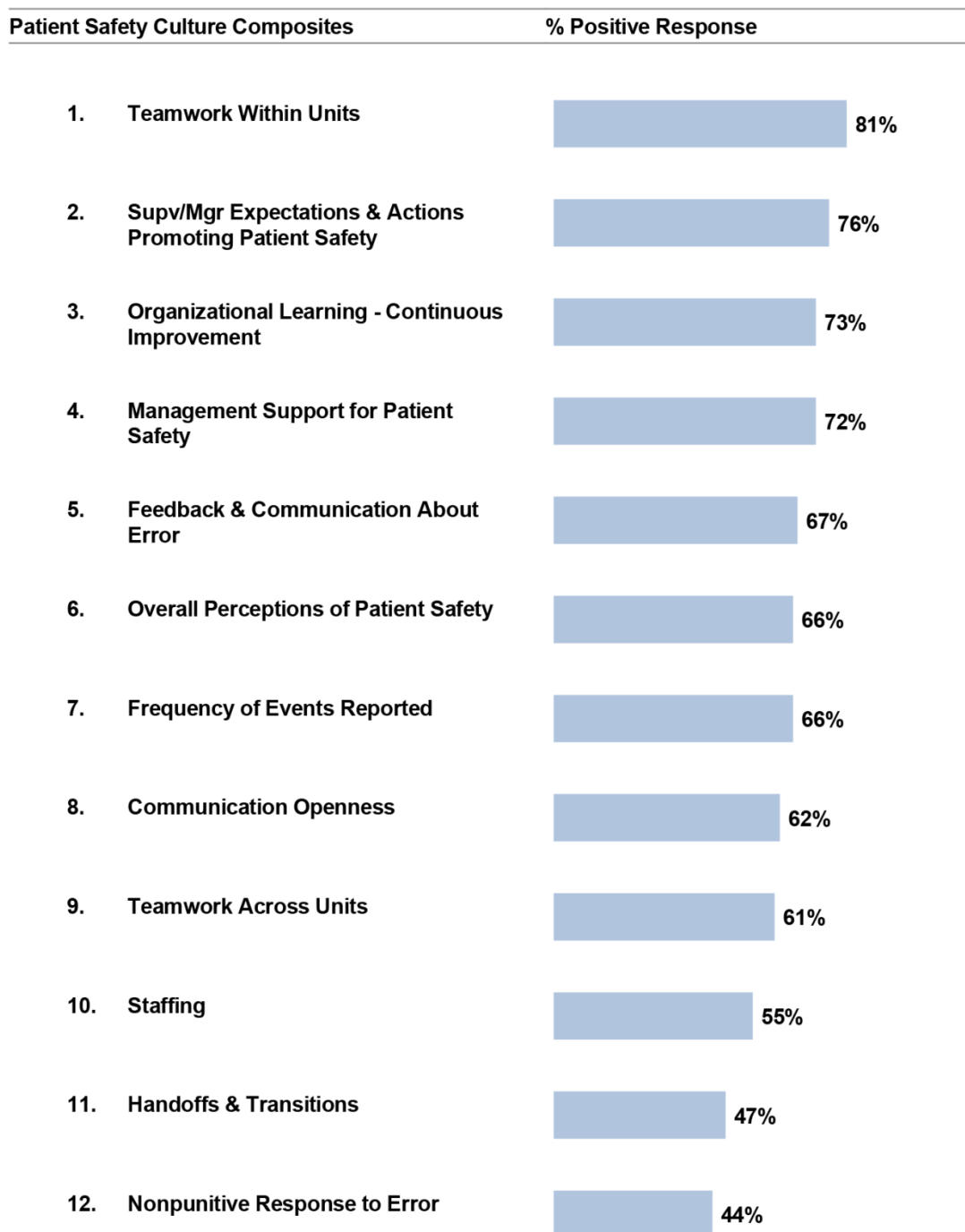
## Number of Events Reported

On average across hospitals, less than half of respondents (44 percent) reported at least one event in their hospital over the past 12 months (Chart 5-4). 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.

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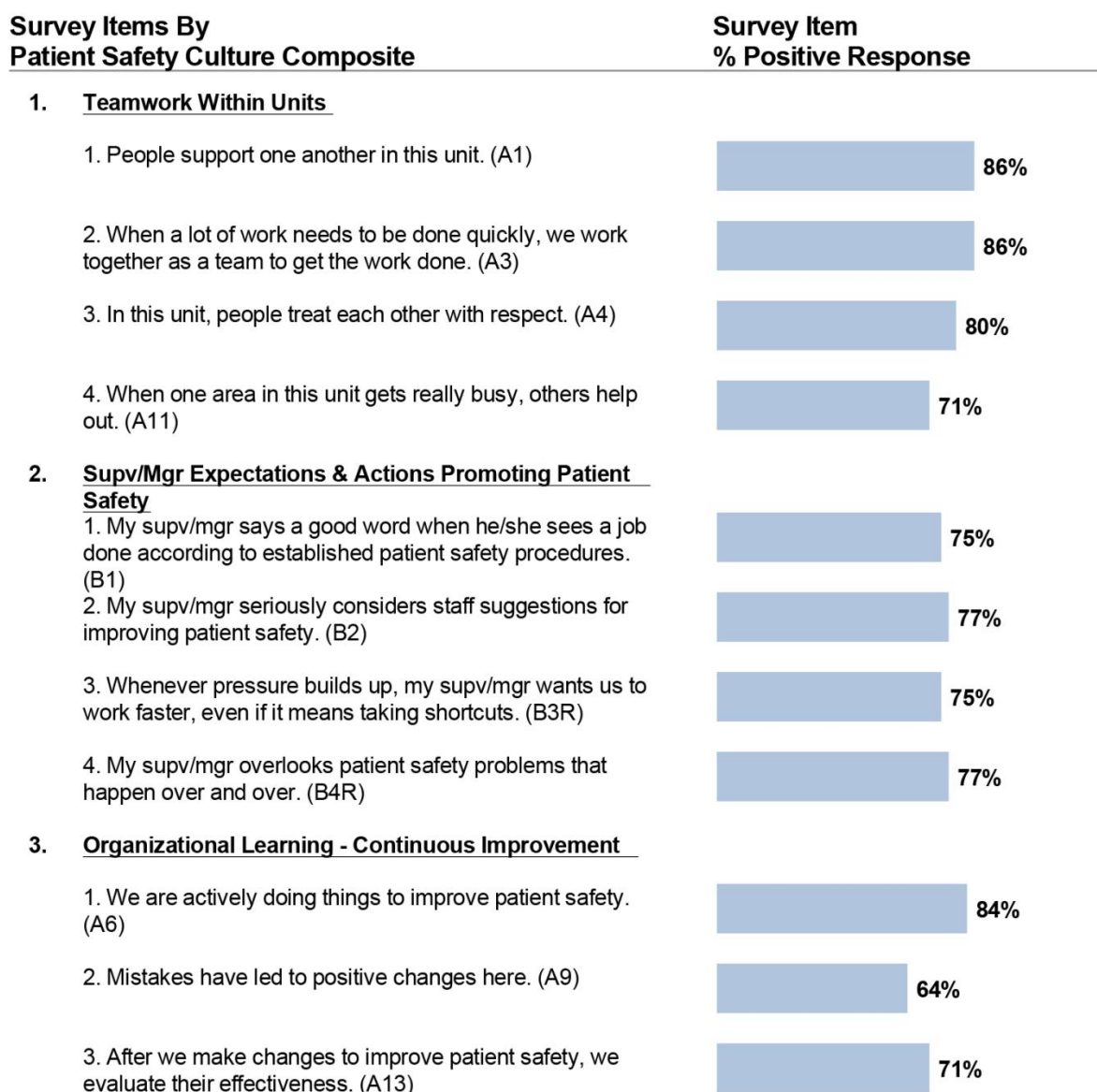
<sup>viii</sup>Some hospitals excluded one or more survey items and are therefore excluded from composite-level calculations when the omitted items pertain to a particular composite. For the 2014 report, six hospitals were excluded from one or more composite-level calculations for this reason.

**Chart 5-1. Composite-Level Average Percent Positive Response – 2014 Database Hospitals**



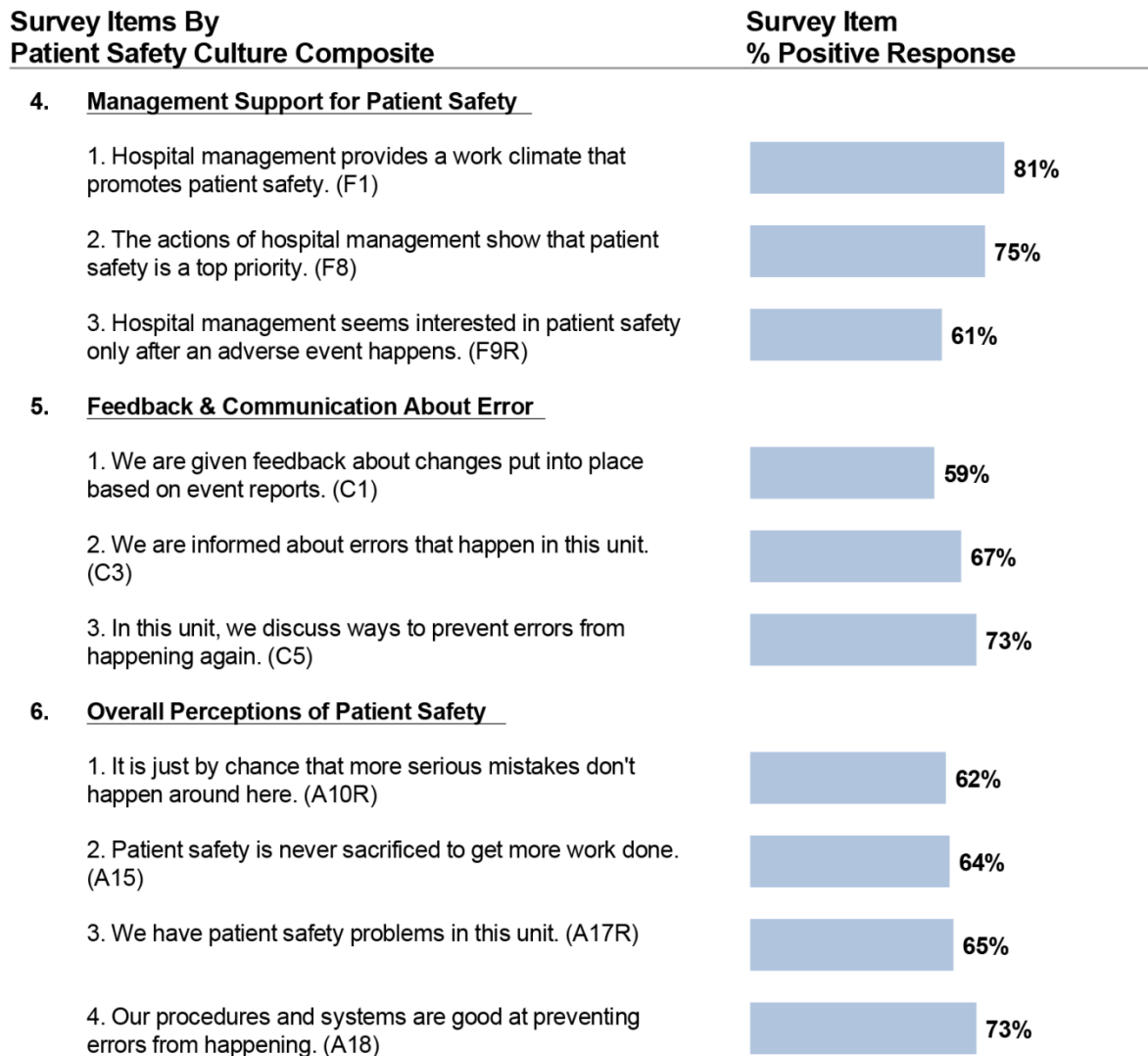


**Chart 5-2. Item-Level Average Percent Positive Response – 2014 Database Hospitals (Page 1 of 4)**



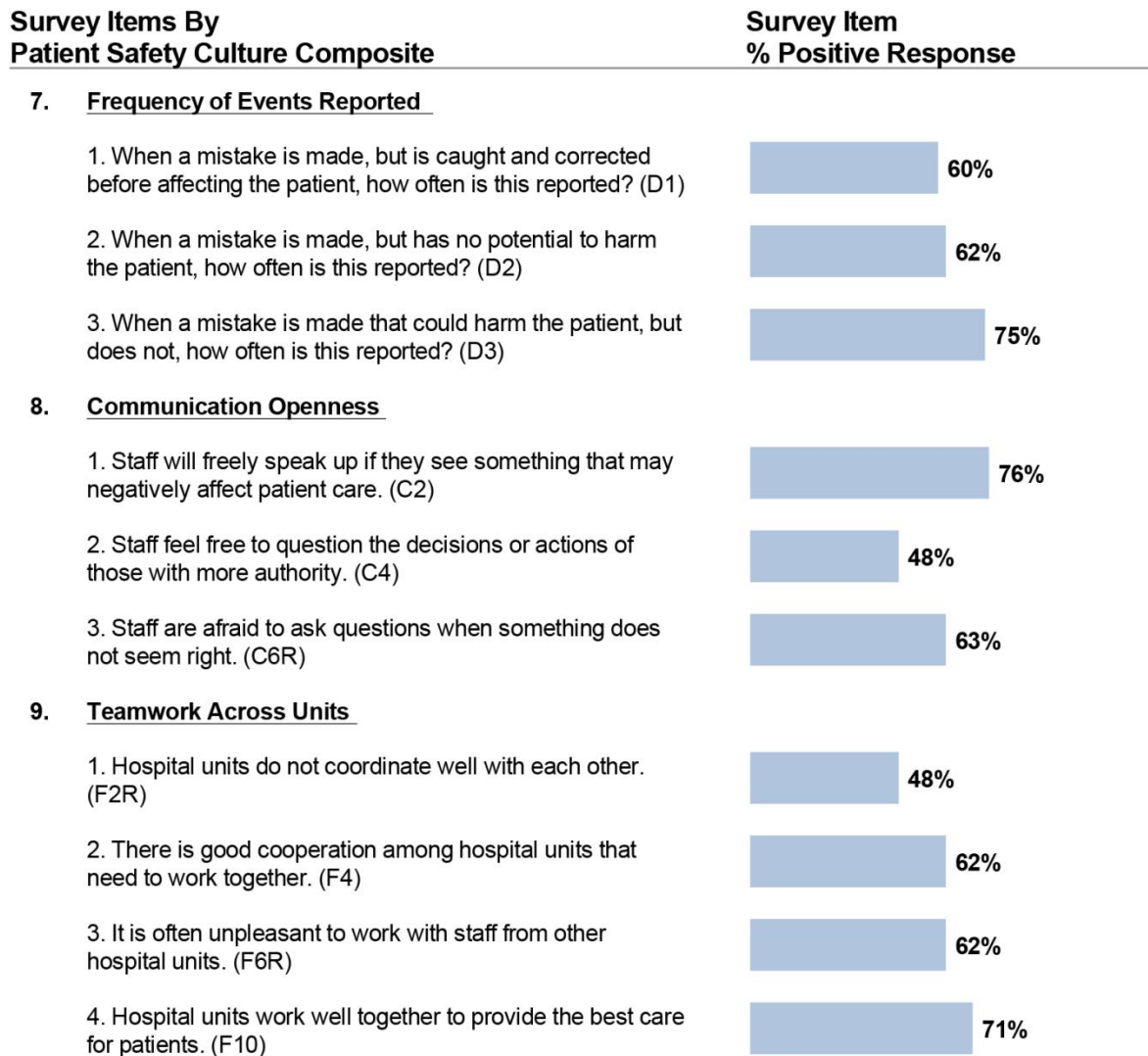
**Note:** The item's survey location is shown to the right in parentheses. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

**Chart 5-2. Item-Level Average Percent Positive Response – 2014 Database Hospitals (Page 2 of 4)**



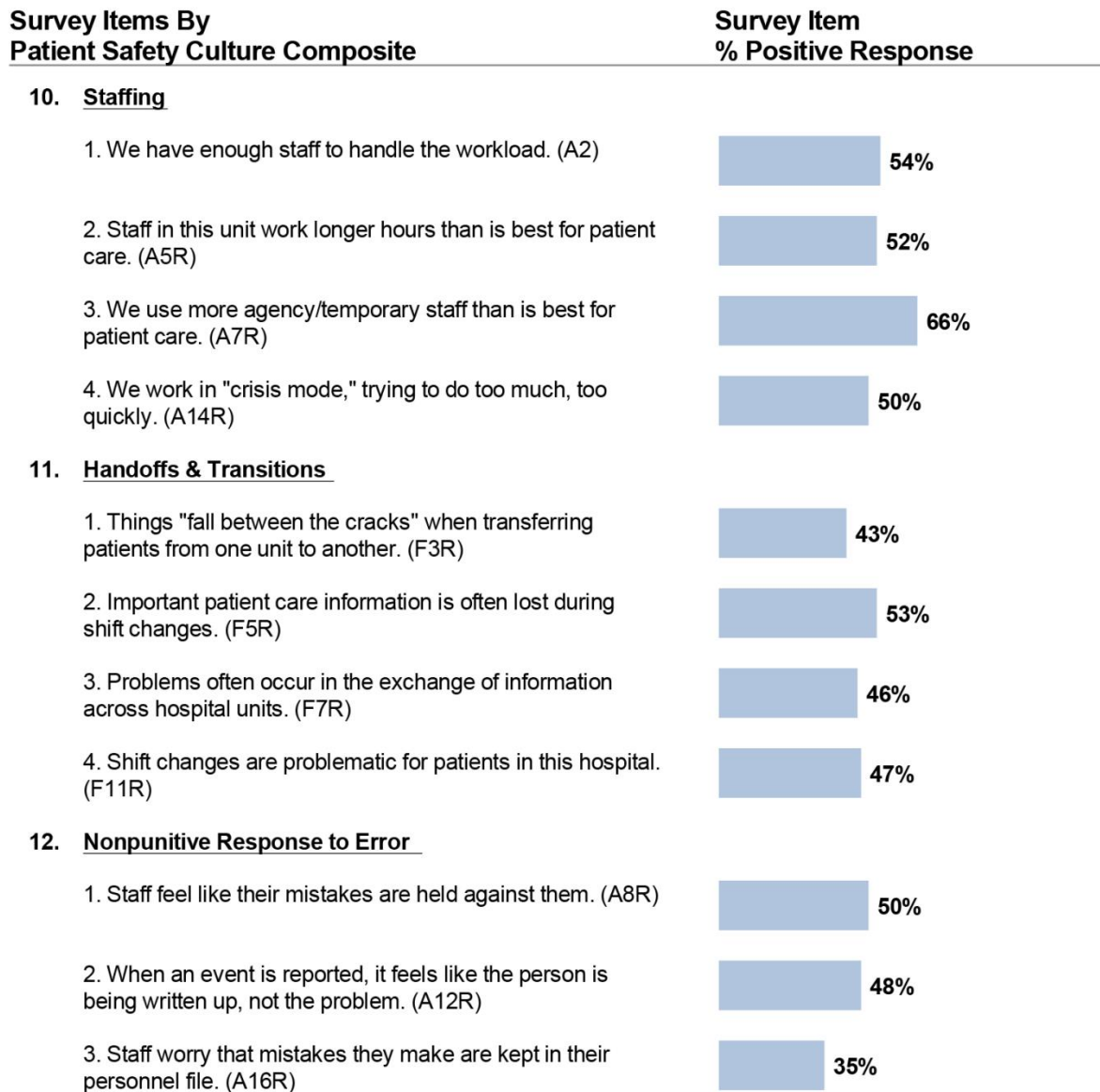
**Note:** The item's survey location is shown to the right in parentheses. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

**Chart 5-2. Item-Level Average Percent Positive Response – 2014 Database Hospitals (Page 3 of 4)**



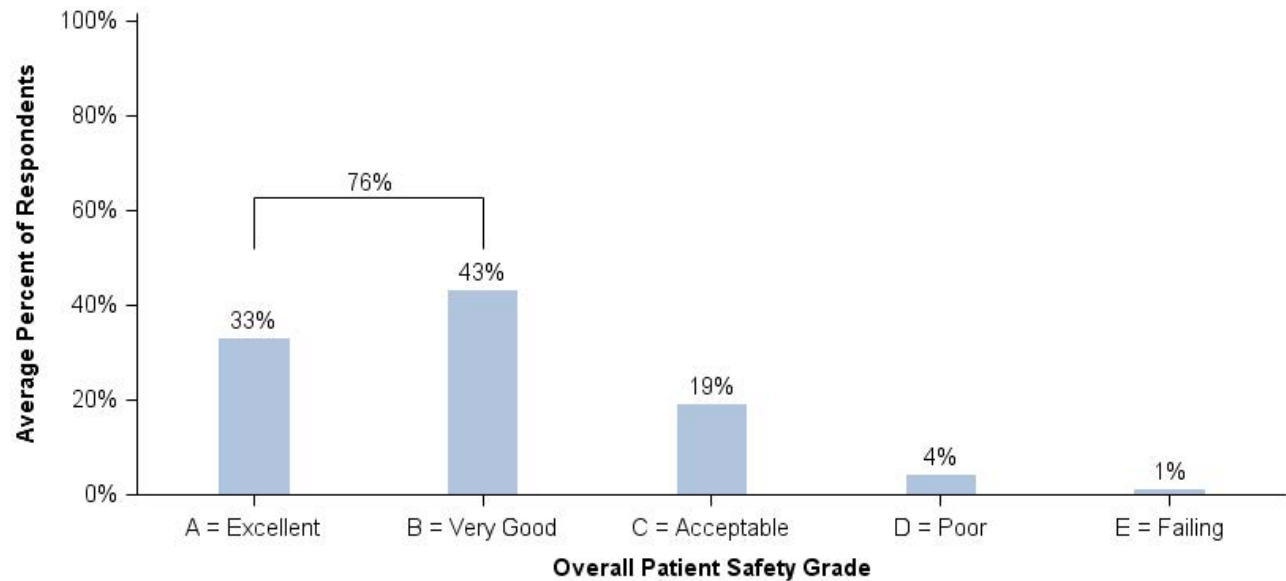
**Note:** The item's survey location is shown to the right in parentheses. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

**Chart 5-2. Item-Level Average Percent Positive Response – 2014 Database Hospitals (Page 4 of 4)**

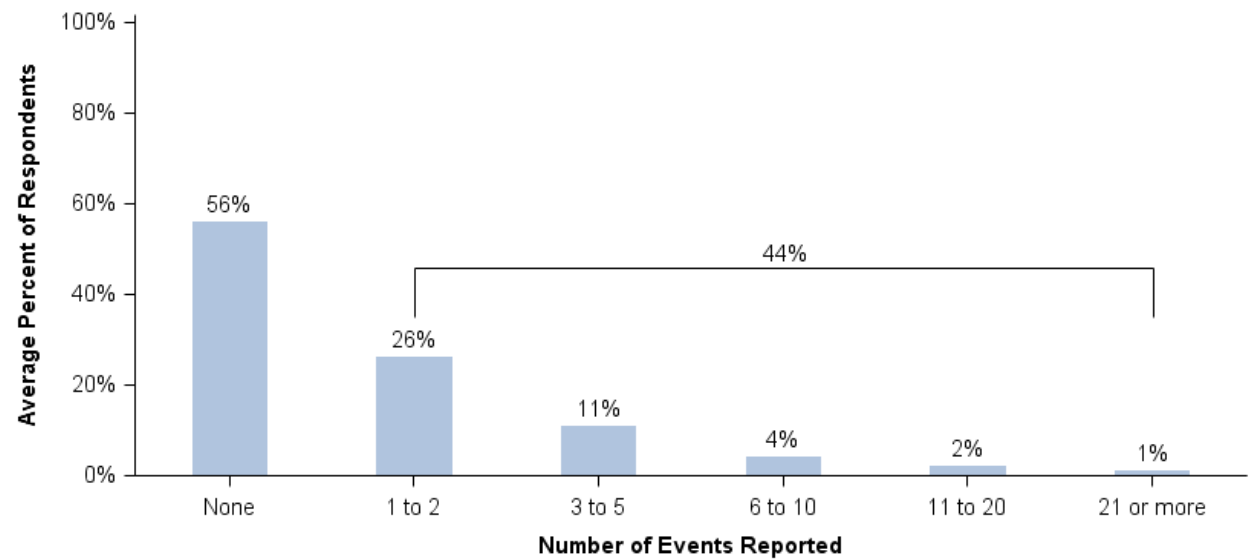


**Note:** The item's survey location is shown to the right in parentheses. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

**Chart 5-3. Average Percentage of 2014 Database Respondents Giving Their Work Area/Unit a Patient Safety Grade**



**Chart 5-4. Average Percentage of 2014 Database Respondents Reporting Events in the Past 12 Months**



## Chapter 6. Comparing Your Results

This chapter presents information on 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, as well as the percentage of staff giving each patient safety grade (e.g., Excellent, Very Good) and percentage of staff reporting each number of events (e.g., 3 to 5, 6 to 10). Refer to the Notes section at the end of this report for a description of how to calculate 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.
  - *Patient safety grade*. In at least one hospital, 31 percent of the respondents provided their unit with a patient safety grade of "Excellent," or "Very Good," yet at another hospital 100 percent provided their unit with a patient safety grade of "Excellent" or "Very Good".
  - *Number of events reported*. In at least one hospital, 10 percent of respondents reported at least one event over the past 12 months, yet at another hospital 100 percent 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.<sup>ix</sup>

## 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 “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

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<sup>ix</sup>As described in the Notes section, 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., 300 beds or more) since they account for 53 percent of responses.

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 10<sup>th</sup> percentile score, or between the 90<sup>th</sup> percentile score and the maximum score).

## Percentiles

The 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup> (or median), 75<sup>th</sup>, and 90<sup>th</sup> 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 50<sup>th</sup> 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 50<sup>th</sup> 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
<b>10<sup>th</sup> percentile</b> Represents the lowest scoring hospitals.	10% of the hospitals scored the same or lower. 90% of the hospitals scored higher.
<b>25<sup>th</sup> percentile</b> Represents lower scoring hospitals.	25% of the hospitals scored the same or lower. 75% of the hospitals scored higher.
<b>50<sup>th</sup> percentile (or median)</b> Represents the middle of the distribution of hospitals.	50% of the hospitals scored the same or lower. 50% of the hospitals scored higher.
<b>75<sup>th</sup> percentile</b> Represents higher scoring hospitals.	75% of the hospitals scored the same or lower. 25% of the hospitals scored higher.
<b>90<sup>th</sup> percentile</b> 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 75<sup>th</sup> percentile score is 49 percent positive, and the 90<sup>th</sup> 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 75<sup>th</sup> percentile (but below the 90<sup>th</sup>), 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 90<sup>th</sup> 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.

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 response, from at least one hospital where few of the respondents (31 percent) provided their unit with a patient safety grade of “Excellent” or “Very Good” to a hospital where 100 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 10 percent of respondents reported at least one event over the past 12 months to a hospital where 100 percent of respondents reported at least one event.

Table 6-3. Composite-Level Comparative Results – 2014 Database Hospitals

			Composite % Positive Response Percentiles						
Patient Safety Culture Composites	Average % Positive	s.d.	Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
1. Teamwork Within Units	81%	6.02%	46%	73%	78%	81%	85%	88%	96%
2. Supervisor/Manager Expectations & Actions Promoting Patient Safety	76%	6.42%	51%	68%	71%	76%	80%	84%	93%
3. Organizational Learning—Continuous Improvement	73%	7.10%	48%	64%	68%	73%	78%	82%	94%
4. Management Support for Patient Safety	72%	8.98%	36%	61%	67%	72%	79%	84%	100%
5. Feedback & Communication About Error	67%	8.04%	42%	57%	61%	66%	72%	78%	90%
6. Overall Perceptions of Patient Safety	66%	8.06%	30%	56%	61%	66%	71%	77%	96%
7. Frequency of Events Reported	66%	7.42%	48%	57%	61%	65%	71%	76%	89%
8. Communication Openness	62%	6.92%	32%	54%	58%	62%	66%	71%	83%
9. Teamwork Across Units	61%	10.09%	35%	49%	53%	59%	67%	75%	90%
10. Staffing	55%	9.24%	28%	44%	49%	55%	61%	68%	81%
11. Handoffs & Transitions	47%	10.94%	26%	35%	40%	46%	53%	63%	84%
12. Nonpunitive Response to Error	44%	8.91%	16%	34%	38%	43%	50%	56%	77%

Table 6-4. Item-Level Comparative Results – 2014 Database Hospitals (Page 1 of 4)

Survey Items by Composite			Average % Positive	s.d.	Survey Item % Positive Response Percentiles						
Item	Survey Items by Composite				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.		86%	6.03%	46%	79%	83%	87%	90%	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.		86%	5.68%	46%	80%	83%	87%	90%	93%	100%
A4	3. In this unit, people treat each other with respect.		80%	7.09%	38%	70%	76%	80%	84%	88%	96%
A11	4. When one area in this unit gets really busy, others help out.		71%	7.48%	49%	62%	66%	71%	76%	80%	94%
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.		75%	7.41%	42%	67%	70%	75%	80%	85%	94%
B2	2. My supv/mgr seriously considers staff suggestions for improving patient safety.		77%	7.31%	43%	68%	72%	77%	82%	86%	100%
B3R	3. Whenever pressure builds up, my supv/mgr wants us to work faster, even if it means taking shortcuts.		75%	7.51%	47%	65%	69%	75%	80%	85%	95%
B4R	4. My supv/mgr overlooks patient safety problems that happen over and over.		77%	6.60%	51%	68%	73%	77%	81%	85%	94%
3.	Organizational Learning—Continuous Improvement										
A6	1. We are actively doing things to improve patient safety.		84%	6.27%	59%	76%	81%	84%	89%	92%	100%
A9	2. Mistakes have led to positive changes here.		64%	8.48%	32%	54%	58%	63%	69%	76%	89%
A13	3. After we make changes to improve patient safety, we evaluate their effectiveness.		71%	8.58%	47%	60%	65%	70%	76%	82%	95%

**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 – 2014 Database Hospitals (Page 2 of 4)

Survey Items by Composite			Average % Positive	Survey Item % Positive Response Percentiles							
Item			s.d.	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%	8.51%	40%	70%	75%	81%	87%	92%	100%
F8	2. The actions of hospital mgmt show that patient safety is a top priority.		75%	9.22%	39%	63%	70%	75%	82%	88%	100%
F9R	3. Hospital mgmt seems interested in patient safety only after an adverse event happens.		61%	10.40%	19%	48%	54%	60%	67%	75%	100%
5. Feedback & Communication About Error											
C1	1. We are given feedback about changes put into place based on event reports.		59%	9.79%	27%	48%	53%	59%	67%	73%	91%
C3	2. We are informed about errors that happen in this unit.		67%	8.42%	37%	58%	62%	67%	72%	79%	93%
C5	3. In this unit, we discuss ways to prevent errors from happening again.		73%	7.85%	38%	64%	68%	73%	79%	84%	100%
6. Overall Perceptions of Patient Safety											
A10R	1. It is just by chance that more serious mistakes don't happen around here.		62%	9.35%	29%	51%	56%	62%	69%	75%	92%
A15	2. Patient safety is never sacrificed to get more work done.		64%	10.70%	23%	52%	58%	64%	70%	76%	100%
A17R	3. We have patient safety problems in this unit.		65%	9.63%	22%	54%	59%	65%	71%	77%	100%
A18	4. Our procedures and systems are good at preventing errors from happening		73%	8.10%	40%	63%	68%	73%	79%	84%	94%

**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 – 2014 Database Hospitals (Page 3 of 4)

Survey Items by Composite			Average % Positive		Survey Item % Positive Response Percentiles						
Item			s.d.		Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
7.	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?		8.72%	60%	38%	50%	54%	60%	66%	72%	89%
D2	2. When a mistake is made, but has no potential to harm the patient, how often is this reported?		8.36%	62%	38%	52%	56%	61%	67%	73%	87%
D3	3. When a mistake is made that could harm the patient, but does not, how often is this reported?		6.86%	75%	50%	67%	71%	75%	80%	84%	100%
8.	Communication Openness										
C2	1. Staff will freely speak up if they see something that may negatively affect patient care.		7.22%	76%	38%	67%	71%	76%	81%	84%	100%
C4	2. Staff feel free to question the decisions or actions of those with more authority.		8.06%	48%	20%	39%	43%	48%	53%	58%	75%
C6R	3. Staff are afraid to ask questions when something does not seem right.		7.56%	63%	25%	54%	58%	63%	67%	73%	85%
9.	Teamwork Across Units										
F2R	1. Hospital units do not coordinate well with each other.		12.22%	48%	21%	34%	40%	47%	56%	66%	85%
F4	2. There is good cooperation among hospital units that need to work together.		10.72%	62%	29%	49%	54%	61%	69%	77%	90%
F6R	3. It is often unpleasant to work with staff from other hospital units.		9.40%	62%	40%	50%	55%	61%	68%	75%	90%
F10	4. Hospital units work well together to provide the best care for patients.		9.92%	71%	41%	59%	64%	70%	78%	84%	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 – 2014 Database Hospitals (Page 4 of 4)

Survey Item % Positive Response Percentiles										
Item	Survey Items by Composite	Average % Positive	s.d.	Median/						
				Min	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Max
10. Staffing										
A2	1. We have enough staff to handle the workload.	54%	12.60%	11%	39%	45%	53%	61%	71%	94%
A5R	2. Staff in this unit work longer hours than is best for patient care.	52%	9.47%	25%	40%	45%	51%	58%	64%	78%
A7R	3. We use more agency/temporary staff than is best for patient care.	66%	10.67%	11%	53%	60%	67%	73%	79%	100%
A14R	4. We work in “crisis mode” trying to do too much, too quickly.	50%	11.01%	17%	37%	42%	48%	56%	66%	81%
11. Handoffs & Transitions										
F3R	1. Things “fall between the cracks” when transferring patients from one unit to another.	43%	12.26%	16%	29%	34%	41%	49%	61%	84%
F5R	2. Important patient care information is often lost during shift changes.	53%	10.50%	27%	41%	46%	52%	58%	67%	100%
F7R	3. Problems often occur in the exchange of information across hospital units.	46%	11.15%	13%	33%	38%	45%	52%	62%	89%
F11R	4. Shift changes are problematic for patients in this hospital.	47%	11.74%	24%	35%	39%	46%	53%	65%	89%
12. Nonpunitive Response to Error										
A8R	1. Staff feel like their mistakes are held against them.	50%	9.75%	20%	38%	44%	49%	56%	63%	82%
A12R	2. When an event is reported, it feels like the person is being written up, not the problem.	48%	9.29%	16%	37%	41%	47%	53%	60%	81%
A16R	3. Staff worry that mistakes they make are kept in their personnel file.	35%	10.03%	0%	24%	29%	35%	41%	49%	75%

**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 describes the percentile distribution across hospitals for respondents who gave their work area/unit a patient safety grade of “Excellent,” or “Very Good.” Table 6-6 shows the percentile distribution across hospitals for staff who reported one or more events in the past 12 months.

**Table 6-5. Percentage of Respondents Giving Their Work Area/Unit a Patient Safety Grade of Excellent or Very Good – 2014 Database Hospitals**

		Survey Item % Response Percentiles								
Item	Work Area/Unit Patient Safety Grade	Average %	s.d.	Median/ 10th 25th 50th 75th 90th %ile %ile %ile %ile %ile Min						
E1	Excellent or Very Good	76%	9.25%	31%	64%	70%	77%	83%	88%	100%

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

**Table 6-6. Percentage of Respondents Reporting One or More Events in the Past 12 Months – 2014 Database Hospitals**

		Survey Item % Response Percentiles								
		Average %	s.d.	Median/						
Item	Events Reported in Past 12 Months			Min	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Max
G1	1 or more events	44%	10.45%	10%	30%	37%	43%	50%	57%	100%

**Note:** For the full 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 and control
- Geographic region

### **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:

<http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/2014/index.html>.

## **Highlights From Appendix A: Overall Results by Hospital Characteristics**

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

- The smallest hospitals (6-24 beds) had the highest percent positive average across all composites (69 percent); larger hospitals (400 beds or more) had the lowest (61 percent positive).
- Smaller hospitals (6-24 beds) had the highest percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (81 percent); larger hospitals (400 beds or more) had the lowest (71 percent).

### **Teaching Status and Ownership and Control (Tables A-5, A-8)**

- Nonteaching hospitals on average scored higher than teaching hospitals by 5 percentage points or more on 6 of the 12 composites.
- Non-government-owned hospitals had a higher percentage of respondents who reported one or more events in the past year (45 percent) than government-owned hospitals (37 percent).



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

- East South Central hospitals had the highest average percent positive response across all composites (68 percent positive); New England hospitals had the lowest (60 percent positive).
- East South Central and 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” (80 percent); New England hospitals had the lowest (70 percent).
- West North Central hospitals had the highest percentage of respondents who reported one or more events in the past year (47 percent); the lowest percentage of respondents reporting one or more events was in the West South Central region (40 percent).

### **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 average percent positive response across the composites (70 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 (61 percent); *Rehabilitation* had the lowest (38 percent).

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

- Respondents in *Administration/Management* had the highest average percent positive response across the composites (75 percent positive); *Pharmacists* had the lowest (62 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” (87 percent); *registered nurse, licensed vocational nurse, or licensed practical nurse* and *Pharmacists* had the lowest (71 percent).
- *Pharmacists* had the highest percentage of respondents reporting one or more events in the past year (73 percent); *Unit Assistants/Clerks/Secretaries* had the lowest (14 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 positive compared with 42 percent positive) but less positive on *Management Support for Patient Safety* (71 percent positive compared with 77 percent positive).
- 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 (48 percent) than respondents *without* direct patient interaction (29 percent).

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

- Respondents with less than a year in their current work area/unit had the highest average percent positive response across the composites (68 percent positive); respondents with 1 to 10 years had the lowest (63 percent positive).
- Respondents with less than a 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 1 to 5 years had the lowest (74 percent).
- Respondents with 6 to 10 years in their current work area/unit had the highest percentage reporting one or more events in the past year (47 percent); respondents with less than a year had the lowest (30 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 653 participating hospitals, we have data from two administrations of the survey for 359 hospitals, allowing us to examine trends over time for these hospitals. This chapter presents trending results from these 359 hospitals.

### *Highlights*

- For the 359 hospitals with trending data, the average length of time between the previous and most recent survey administrations was 23 months (range: 7 months to 40 months).
- Across the 359 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 -1 to a change of 2 percentage points).
- The average percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” increased by 1 percentage point.

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 359 trending hospitals.

**Table 7-1. Trending: Response Rate Statistics – 2014 Database Hospitals**

Summary Statistic	Most Recent Survey Administration	Previous Survey Administration
Total number of respondents	253,708	220,393
Number of completed surveys per hospital	Average: 707 Range: 12–7,162	Average: 614 Range: 15–8,725
Hospital response rate	Average: 60% Range: 7–100%	Average: 55% Range: 4–100%

Additional characteristics of trending hospitals follow:

- The average change in response rate from the previous administration was an increase of 5 percentage points (range: one hospital had an 86 percentage point decrease in response rate and one had a 70 percentage point increase).
- The average time between the previous and most recent survey administrations was 23 months (range: 7 months to 40 months.)<sup>x</sup>

Note: Descriptive statistics on the 359 trending hospitals compared with nontrending hospitals by bed size, teaching status, ownership and control, and region are provided in Tables 7-2 to 7-5.

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<sup>x</sup> Ninety-three hospitals previously submitted data but were not included in trending analysis because their data were more than 4 years old.

**Table 7-2. Bed Size – Distribution of 2014 Trending and Nontrending Hospitals**

Bed Size	Trending Hospitals		Nontrending Hospitals		AHA-Registered U.S. Hospitals	
	Number	Percent	Number	Percent	Number	Percent
6-24 beds	19	5%	18	6%	701	11%
25-49 beds	41	11%	55	19%	1,451	23%
50-99 beds	59	16%	53	18%	1,276	20%
100-199 beds	87	24%	61	21%	1,280	20%
200-299 beds	64	18%	34	12%	684	11%
300-399 beds	34	9%	29	10%	409	6%
400-499 beds	21	6%	14	5%	201	3%
500 or more beds	34	9%	30	10%	315	5%
<b>TOTAL</b>	<b>359</b>	<b>100%</b>	<b>294</b>	<b>100%</b>	<b>6,317</b>	<b>100%</b>

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

**Table 7-3. Teaching Status – Distribution of 2014 Trending and Nontrending Hospitals**

Teaching Status	Trending Hospitals		Nontrending Hospitals		AHA-Registered U.S. Hospitals	
	Number	Percent	Number	Percent	Number	Percent
Teaching	125	35%	118	40%	1,537	24%
Nonteaching	234	65%	176	60%	4,780	76%
<b>TOTAL</b>	<b>359</b>	<b>100%</b>	<b>294</b>	<b>100%</b>	<b>6,317</b>	<b>100%</b>

**Table 7-4. Ownership and Control – Distribution of 2014 Trending and Nontrending Hospitals**

Ownership and Control	Trending Hospitals		Nontrending Hospitals		AHA-Registered U.S. Hospitals	
	Number	Percent	Number	Percent	Number	Percent
Government (Federal or non-Federal)	47	13%	93	32%	1,554	25%
Nongovernment (voluntary/nonprofit or proprietary/investor owned)	312	87%	201	68%	4,763	75%
<b>TOTAL</b>	<b>359</b>	<b>100%</b>	<b>294</b>	<b>100%</b>	<b>6,317</b>	<b>100%</b>

**Table 7-5. Geographic Region – Distribution of 2014 Trending and Nontrending Hospitals**

Region	Trending Hospitals		Nontrending Hospitals		AHA-Registered U.S. Hospitals	
	Number	Percent	Number	Percent	Number	Percent
Mid-Atlantic/New England <sup>xi</sup>	48	13%	46	15%	834	13%
South Atlantic/Associated Territories	71	20%	63	21%	1,009	16%
East North Central	115	32%	47	16%	916	15%
East South Central	40	11%	15	5%	521	8%
West North Central	11	3%	37	13%	799	13%
West South Central	37	10%	33	11%	1,079	17%
Mountain	13	4%	4	1%	508	8%
Pacific/Associated Territories	24	7%	49	17%	651	10%
<b>TOTAL</b>	<b>359</b>	<b>100%</b>	<b>294</b>	<b>100%</b>	<b>6,317</b>	<b>100%</b>

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

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

- Mid-Atlantic/New England: CT, MA, ME, NH, NJ, NY, PA, RI, VT
- 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

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<sup>xi</sup> Mid-Atlantic and New England regions are combined here.

## 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 for 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 whether at least one event was reported over the past 12 months, respectively.

Table 7-8. Trending: Composite-Level Results – 2014 Database Hospitals

Patient Safety Culture Composites	Composite % Positive Response					
	Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase Average Decrease
1. Teamwork Within Units	82%	81%	1%	17%	-10%	4% -3%
2. Supervisor/Manager Expectations & Actions Promoting Patient Safety	76%	75%	1%	17%	-12%	4% -3%
3. Organizational Learning—Continuous Improvement	74%	73%	1%	16%	-17%	4% -4%
4. Management Support for Patient Safety	73%	73%	0%	19%	-18%	5% -5%
5. Feedback & Communication About Error	67%	66%	1%	22%	-17%	5% -4%
6. Overall Perceptions of Patient Safety	67%	67%	0%	21%	-16%	5% -4%
7. Frequency of Events Reported	66%	65%	1%	24%	-19%	4% -4%
8. Communication Openness	63%	62%	1%	15%	-18%	4% -3%
9. Teamwork Across Units	62%	60%	2%	19%	-13%	5% -4%
10. Staffing	56%	57%	-1%	17%	-23%	5% -5%
11. Handoffs & Transitions	48%	47%	1%	23%	-24%	5% -4%
12. Nonpunitive Response to Error	45%	44%	1%	20%	-18%	5% -4%

**Note:** Based on data from 359 trending hospitals that had composite-level scores; the number of respondents was 253,708 for the most recent results and 220,393 for the previous results.



Table 7-9. Trending: Item-Level Results – 2014 Database Hospitals (Page 1 of 4)

Item	Survey Items by Composite	Item % Positive Response					
		Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase Average Decrease
<b>1.</b>	<b>Teamwork Within Units</b>						
A1	1. People support one another in this unit.	87%	86%	1%	23%	-13%	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%	17%	-16%	3% -3%
A4	3. In this unit, people treat each other with respect.	80%	79%	1%	43%	-13%	5% -3%
A11	4. When one area in this unit gets really busy, others help out.	72%	71%	1%	22%	-15%	5% -4%
<b>2.</b>	<b>Supervisor/Manager Expectations &amp; Actions Promoting Patient Safety</b>						
B1	1. My supv/mgr says a good word when he/she sees a job done according to established patient safety procedures.	76%	74%	2%	48%	-15%	5% -4%
B2	2. My supv/mgr seriously considers staff suggestions for improving patient safety.	78%	77%	1%	21%	-17%	5% -4%
B3R	3. Whenever pressure builds up, my supv/mgr wants us to work faster, even if it means taking shortcuts.	75%	74%	1%	19%	-20%	5% -4%
B4R	4. My supv/mgr overlooks patient safety problems that happen over and over.	77%	77%	0%	19%	-22%	4% -3%
<b>3.</b>	<b>Organizational Learning—Continuous Improvement</b>						
A6	1. We are actively doing things to improve patient safety.	85%	85%	0%	20%	-21%	4% -4%
A9	2. Mistakes have led to positive changes here.	65%	64%	1%	25%	-18%	5% -5%
A13	3. After we make changes to improve patient safety, we evaluate their effectiveness.	71%	70%	1%	21%	-19%	5% -5%

**Note:** Based on data from 359 trending hospitals. The number of respondents was 253,708 for the most recent results and 220,393 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 – 2014 Database Hospitals (Page 2 of 4)

Item	Survey Items by Composite	Item % Positive Response					
		Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase Average Decrease
<b>4.</b>	<b>Management Support for Patient Safety</b>						
F1	1. Hospital mgmt provides a work climate that promotes patient safety.	81%	81%	0%	33%	-20%	5% -4%
F8	2. The actions of hospital mgmt show that patient safety is a top priority.	76%	76%	0%	21%	-21%	5% -5%
F9R	3. Hospital mgmt seems interested in patient safety only after an adverse event happens.	62%	62%	0%	31%	-20%	5% -6%
<b>5.</b>	<b>Feedback and Communication About Error</b>						
C1	1. We are given feedback about changes put into place based on event reports.	61%	59%	2%	29%	-25%	7% -4%
C3	2. We are informed about errors that happen in this unit.	68%	66%	2%	26%	-25%	5% -5%
C5	3. In this unit, we discuss ways to prevent errors from happening again.	74%	72%	2%	19%	-19%	5% -4%
<b>6.</b>	<b>Overall Perceptions of Patient Safety</b>						
A10R	1. It is just by chance that more serious mistakes don't happen around here.	64%	63%	1%	32%	-21%	5% -5%
A15	2. Patient safety is never sacrificed to get more work done.	64%	65%	-1%	25%	-59%	5% -7%
A17R	3. We have patient safety problems in this unit.	66%	65%	1%	24%	-21%	5% -5%
A18	4. Our procedures and systems are good at preventing errors from happening.	74%	74%	0%	22%	-19%	5% -5%

**Note:** Based on data from 359 trending hospitals. The number of respondents was 253,708 for the most recent results and 220,393 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 – 2014 Database Hospitals (Page 3 of 4)

Item	Survey Items by Composite	Item % Positive Response				
		Most Recent	Previous	Change	Maximum Increase	Maximum Decrease
7. Frequency of Events Reported						
D1	1. When a mistake is made, but is <u>caught</u> and <u>corrected</u> before affecting the <u>patient</u> , how often is this reported?	61%	59%	2%	24%	-26%
D2	2. When a mistake is made, but has <u>no</u> potential to harm the <u>patient</u> , how often is this reported?	62%	61%	1%	27%	-23%
D3	3. When a mistake is made that <u>could harm</u> the <u>patient</u> , but does not, how often is this reported?	76%	75%	1%	20%	-20%
8. Communication Openness						
C2	1. Staff will freely speak up if they see something that may negatively affect patient care.	76%	75%	1%	24%	-29%
C4	2. Staff feel free to question the decisions or actions of those with more authority.	48%	47%	1%	24%	-31%
C6R	3. Staff are afraid to ask questions when something does not seem right.	64%	63%	1%	17%	-23%
9. Teamwork Across Units						
F2R	1. Hospital units do not coordinate well with each other.	49%	48%	1%	23%	-21%
F4	2. There is good cooperation among hospital units that need to work together.	62%	61%	1%	23%	-20%
F6R	3. It is often unpleasant to work with staff from other hospital units.	63%	61%	2%	21%	-20%
F10	4. Hospital units work well together to provide the best care for patients.	72%	70%	2%	21%	-16%
					Average Increase	Average Decrease
					5%	-4%
					5%	-4%
					4%	-3%
					4%	-3%
					5%	-5%
					5%	-4%
					6%	-5%
					6%	-5%
					6%	-4%
					5%	-5%

**Note:** Based on data from 359 trending hospitals. The number of respondents was 253,708 for the most recent results and 220,393 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 – 2014 Database Hospitals (Page 4 of 4)

Survey Items by Composite		Item % Positive Response						
Item		Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase	Average Decrease
10. Staffing								
A2	1. We have enough staff to handle the workload.	54%	55%	-1%	32%	-52%	7%	-8%
A5R	2. Staff in this unit work longer hours than is best for patient care.	53%	54%	-1%	21%	-24%	5%	-6%
A7R	3. We use more agency/temporary staff than is best for patient care.	68%	69%	-1%	22%	-26%	5%	-6%
A14R	4. We work in “crisis mode” trying to do too much, too quickly.	51%	50%	1%	26%	-22%	6%	-6%
11. Handoffs & Transitions								
F3R	1. Things “fall between the cracks” when transferring patients from one unit to another.	43%	42%	1%	27%	-25%	6%	-5%
F5R	2. Important patient care information is often lost during shift changes.	54%	53%	1%	39%	-30%	6%	-5%
F7R	3. Problems often occur in the exchange of information across hospital units.	47%	45%	2%	28%	-24%	6%	-4%
F11R	4. Shift changes are problematic for patients in this hospital.	48%	46%	2%	27%	-24%	6%	-5%
12. Nonpunitive Response to Error								
A8R	1. Staff feel like their mistakes are held against them.	51%	50%	1%	22%	-22%	5%	-5%
A12R	2. When an event is reported, it feels like the person is being written up, not the problem.	49%	47%	2%	24%	-20%	6%	-5%
A16R	3. Staff worry that mistakes they make are kept in their personnel file.	36%	35%	1%	27%	-40%	5%	-5%

**Note:** Based on data from 359 trending hospitals. The number of respondents was 253,708 for the most recent results and 220,393 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: Percentage of Respondents Giving Their Work Area/Unit a Patient Safety Grade of Excellent or Very Good – 2014 Database Hospitals**

Item	Work Area/Unit Patient Safety Grade	Percentage of Respondents Within Hospitals				
		Most Recent	Previous	Change	Maximum Increase	Average Increase
E1	Excellent or Very Good	77%	76%	1%	37%	5%
					-25%	-5%

**Note:** Based on data from 359 trending hospitals that had data for this item. The number of respondents was 253,708 for the most recent results and 220,393 for the previous results. Most recent, previous, and change columns display average percent positive scores across the trending hospitals..

**Table 7-11. Trending: Percentage of Respondents Reporting One or More Events in the Past 12 Months – 2014 Database Hospitals**

Item	Events Reported in Past 12 Months	Percentage of Respondents Within Hospitals				
		Most Recent	Previous	Change	Maximum Increase	Average Increase
G1	1 or more events	44%	45%	-1%	61%	5%
					-41%	-6%

**Note:** Based on data from 359 trending hospitals that had data for this item. The number of respondents was 253,708 for the most recent results and 220,393 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:

- Most hospitals changed less than 5 percentage points on the 12 composites.
- *Feedback and Communication About Error* had the largest percentage of hospitals that increased 5 percentage points or more; 31 percent of hospitals increased by at least 5 percentage points.
- *Staffing* had the largest percentage of hospitals that decreased 5 percentage points or more; 24 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 patient safety grades (percent providing grades of “Excellent” or “Very Good”) and shows that:

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

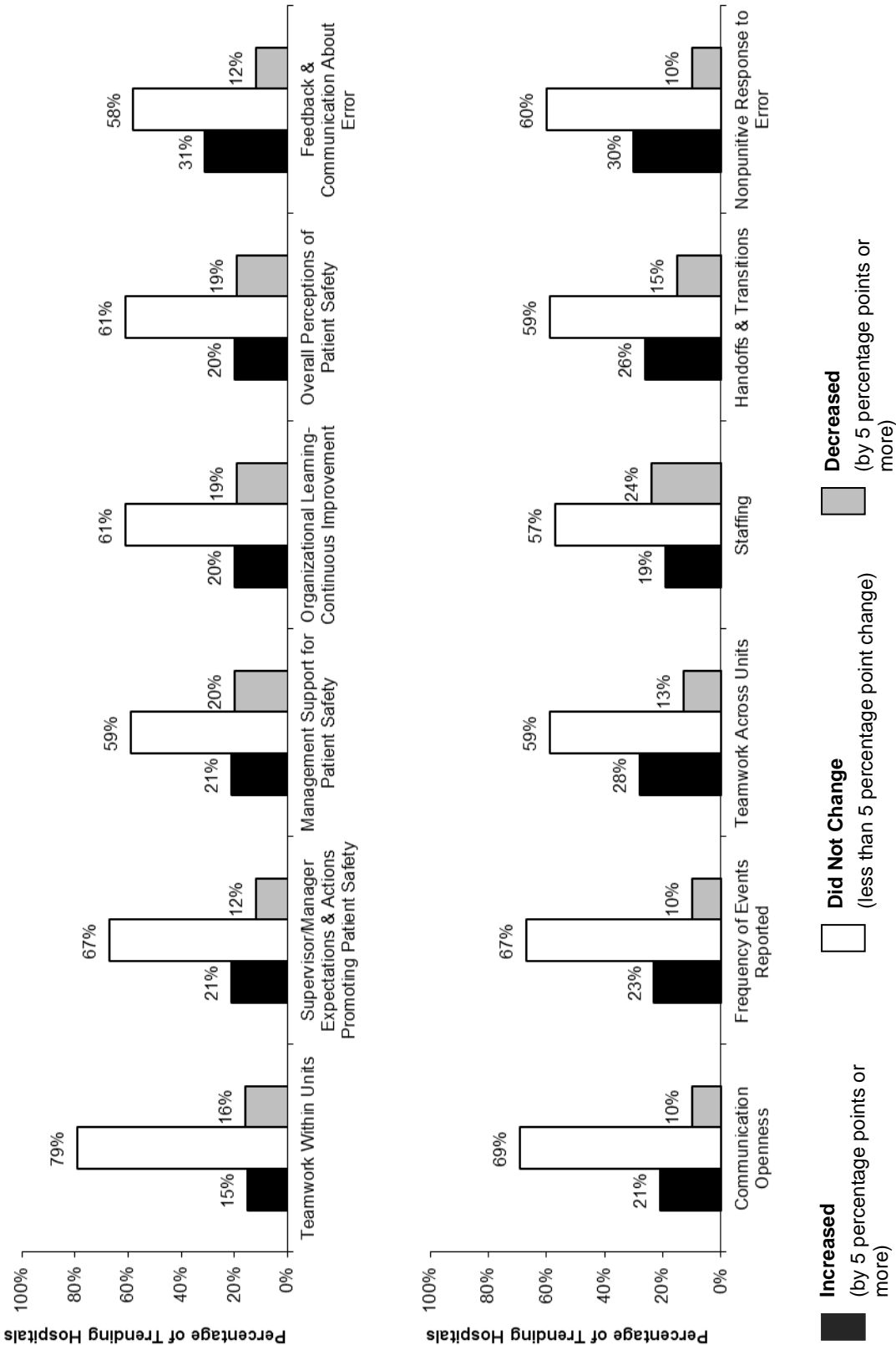
Chart 7-3 displays results for the percentages of trending hospitals that increased, decreased, or did not change in the proportion of respondents reporting one or more events and shows that:

- 16 percent of hospitals *increased* by 5 percentage points or more.
- 56 percent of hospitals changed less than 5 percentage points.
- 28 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:

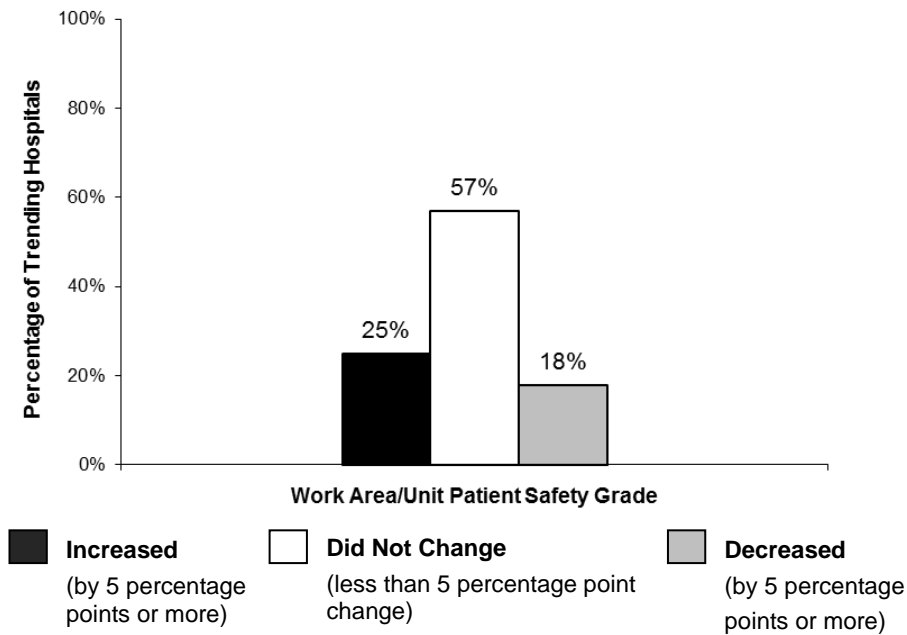
- 46 percent of hospitals *decreased* by 5 percentage points or more on at least one composite.
- Most hospitals (65 percent) *increased* by 5 percentage points or more on at least one composite.
- Two-thirds of hospitals (67 percent) changed less than 5 percentage points on seven or more composites.

Chart 7-1. Trending: Percentage of 2014 Hospitals That Increased, Decreased, or Did Not Change on Each Composite



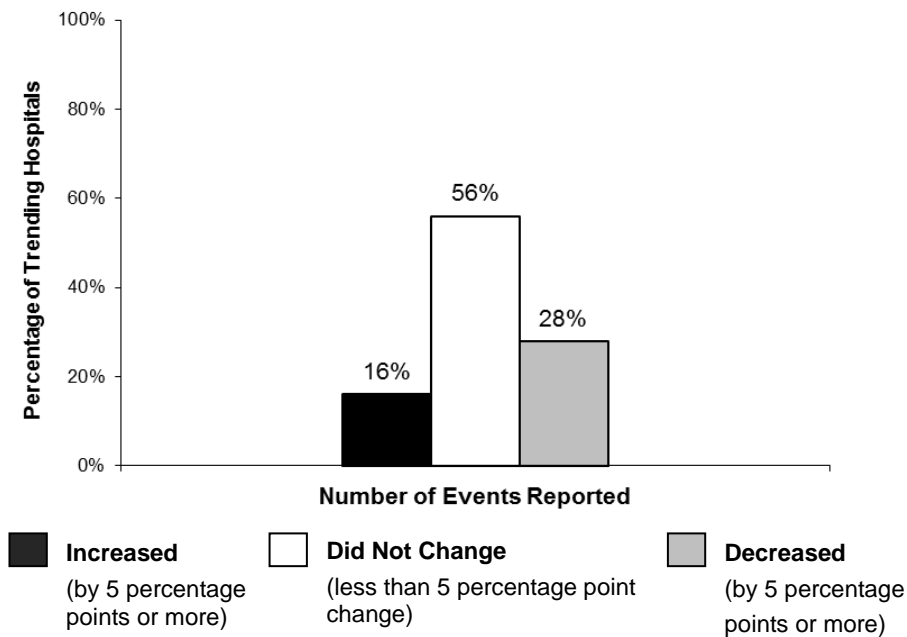
**Note:** Based on data from 359 trending hospitals. Percentages may not to 100 due to rounding.

**Chart 7-2. Trending: Percentage of 2014 Hospitals That Increased, Decreased, or Did Not Change on Work Area/Unit Patient Safety Grade**



**Note:** Based on data from 359 trending hospitals that responded to this item.

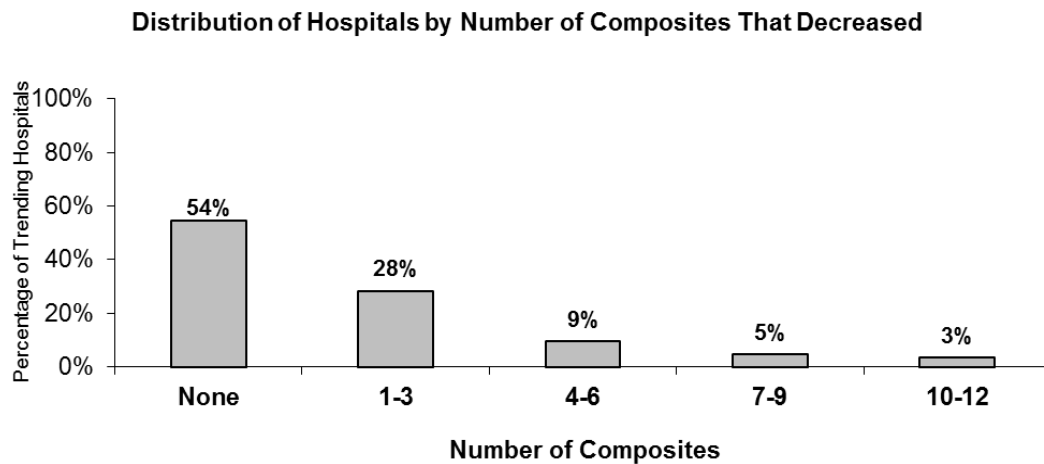
**Chart 7-3. Trending: Percentage of 2014 Hospitals That Increased, Decreased, or Did Not Change on Number of Events Reported**



**Note:** Based on data from 359 trending hospitals that responded to this item.

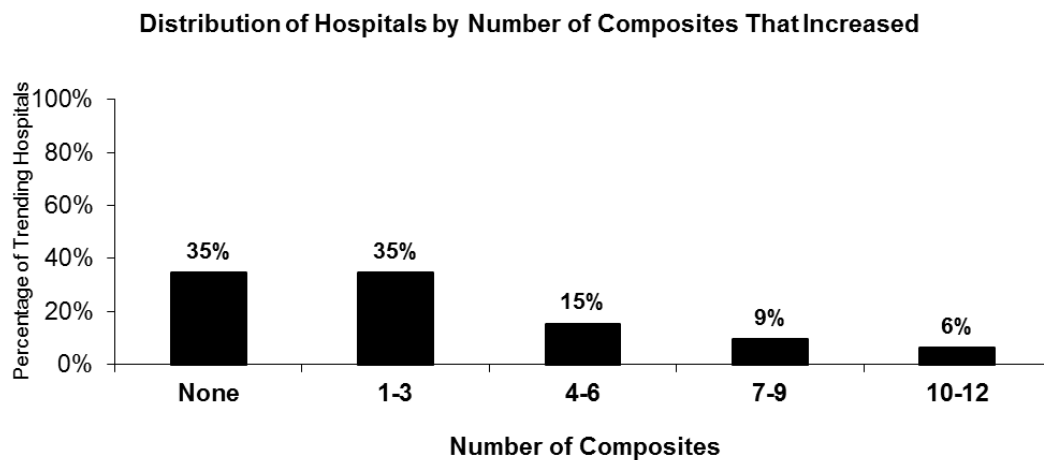


**Chart 7-4. Trending: Distribution of 2014 Hospitals by Number of Composites That Decreased by 5 Percentage Points or More**



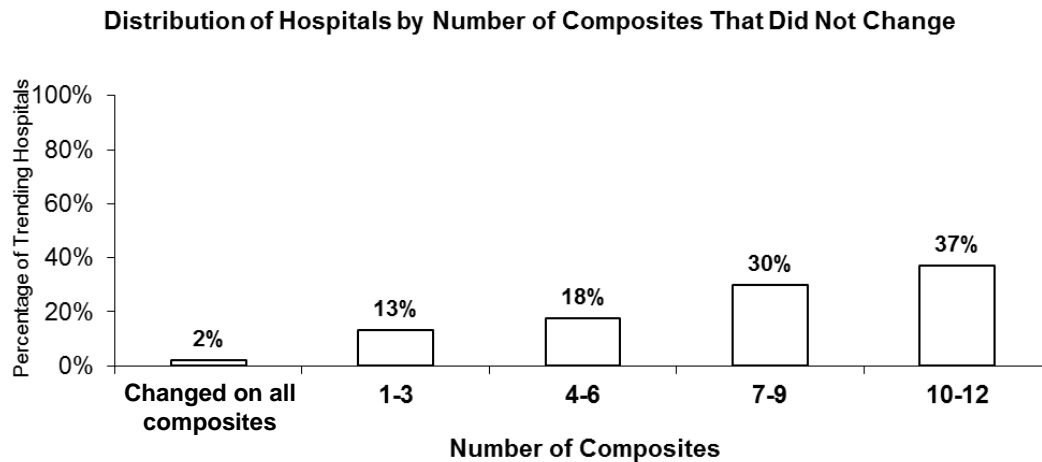
**Note:** Based on data from 359 trending hospitals that measured all 12 survey dimensions. Six trending hospitals that did not measure all 12 survey dimensions are not included. Percentages may not add to 100 due to rounding.

**Chart 7-5. Trending: Distribution of 2014 Hospitals by Number of Composites That Increased by 5 Percentage Points or More**



**Note:** Based on data from 359 trending hospitals that measured all 12 survey dimensions. Six trending hospitals that did not measure all 12 survey dimensions are not included.

**Chart 7-6. Trending: Distribution of 2014 Hospitals by Number of Composites That Did Not Change by 5 Percentage Points or More**



**Note:** Based on data from 359 trending hospitals that measured all 12 survey dimensions. Six trending hospitals that did not measure all 12 survey dimensions are not included.

## **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 359 hospitals that administered the survey and submitted data more than once. Average percent positive scores from the most recent and previous administrations are shown for 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 and control
- 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: <http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/2014/index.html>.

## Highlights From Appendix C: Trending Results by Hospital Characteristics

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

- Hospitals with 100-199 beds increased up to 3 percentage points on 11 patient safety composites.
- Hospitals with 100-199 beds and 300-399 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 2 percentage point increase, from 76 percent to 78 percent and from 72 percent to 74 percent, respectively).

### Teaching Status and Ownership and Control (Table C-5)

- Teaching hospitals increased up to 3 percentage points on nine patient safety composites; nonteaching hospitals showed increases up to 2 percentage points on eight composites and decreased by 1 percentage point on *Management Support for Patient Safety* and *Staffing*.
- Government-owned hospitals increased up to 3 percentage points across 10 composites, and non-government-owned hospitals showed increases up to 2 percentage points across 9 composites. Both government-owned and non-government-owned hospitals decreased by 1 percentage point on *Staffing*.

### Geographic Region (Table C-9)

- East North Central hospitals increased up to 3 percentage points on 11 patient safety composites and decreased by 1 percentage point on *Staffing*.

## Highlights From Appendix D: Trending Results by Respondent Characteristics

### Work Area/Unit (Table D-1)

- *Pharmacy* work area/units increased up to 4 percentage points on 11 patient safety composites.

### Staff Position (Table D-5)

- *Pharmacists* had increases up to 4 percentage points on 9 patient safety composites.

### Interaction With Patients (Table D-9)

- Respondents *with* direct interaction with patients increased up to 2 percentage points across 10 patient safety culture composites; respondents *without* direct interaction increased up to 3 percentage points across 7 composites.

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

- Respondents with less than 1 year in their work area/unit increased up to 3 percentage points across 11 patient safety culture composites; respondents with 16 to 20 years in their work area/unit increased up to 3 percentage points across 9 composites.

## 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 Wacławski, 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, and 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 the 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.

Summaries of the survey results should be distributed 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 areas for patient safety culture improvement have been identified, formal written action plans need to be developed 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.

Encourage action plans that are “SMART”:

- Specific
- Measurable
- Achievable
- Relevant
- Time bound

When deciding whether a particular action plan or initiative would be a good fit in your facility, you may find the guide *Will It Work Here? A Decisionmaker's Guide to Adopting Innovations* (Brach, Lenfestey, Roussel, et al., 2008) a useful resource ([www.innovations.ahrq.gov/content.aspx?id=2380](http://www.innovations.ahrq.gov/content.aspx?id=2380)). 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**

Once action plans have been developed, the plans, deliverables, and expected outcomes of the plans need to be communicated. 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.

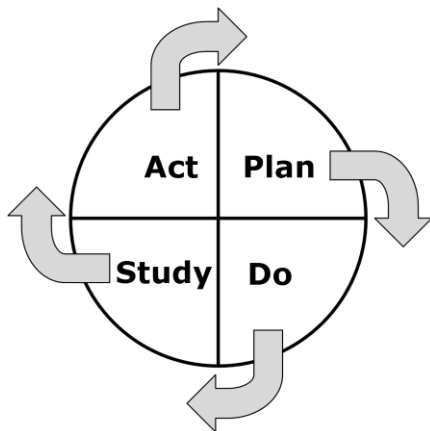
#### **Step # 5: Implement Action Plans**

Implementing action plans is one of the hardest steps. Taking action requires the provision of necessary 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 realizing patient safety culture improvement. While communicating the survey results is important, taking action makes the real difference. However, as the Institute for Healthcare Improvement (2006) 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, Nolan, Nolan, et al., 1996), shown in Chart 8-1, is a pilot-study approach to change. It involves first developing a small-scale plan to test a proposed change (Plan), carrying out the plan (Do), observing and learning from the consequences (Study), and determining what modifications 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.

**Chart 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 tracked 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.



## References

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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 for sections A, B, C, D, and F or who answered only demographic items (i.e., straight-lined) 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.

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

**Numerator** = Number of complete, returned surveys. 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's 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 *Strongly 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.<sup>xii</sup>

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<sup>xii</sup>This method for calculating composite scores differs slightly from the method described in the September 2004 Survey User's Guide that is part of the original survey toolkit materials on the AHRQ Web site. The guide advises computing composites by calculating the overall percent positive across all the items within a composite. The updated recommendation included in this report is to compute item percent positive scores first, and then average the item percent positive scores to obtain the composite score, which gives equal weight to each item in a composite.

## Item and Composite Percent Positive Scores

To calculate your hospital's composite score, simply average the percentage of positive response 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 1.)

**Table 1. 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
<b>Item A15: positively worded</b> "Patient safety is never sacrificed to get more work done"	120	NA*	260	120/260 = 46%
<b>Item A18: positively worded</b> "Our procedures and systems are good at preventing errors from happening"	130	NA*	250	130/250 = 52%
<b>Item A10: negatively worded</b> "It is just by chance that more serious mistakes don't happen around here"	NA*	110	240	110/240 = 46%
<b>Item A17: negatively worded</b> "We have patient safety problems in this unit"	NA*	140	250	140/250 = 56%
<b>Composite Score % Positive = (46% + 52% + 46% + 56%) / 4 = 50%</b>				

\*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 2 shows how to calculate the percent positive response for Overall Patient Safety Grade (item E1) and Number of Events Reported (item G1).

**Table 2. Example of Computing Patient Safety Grade and Number of Events Reported Percent Positive Response**

Items	Number of “Excellent” or “Very Good” Responses	Number of “1 to 2 Event Reports,” “3 to 5 Event Reports,” “6 to 10 Event Reports,” “11 to 20 Event Reports,” or “21 Event Reports or More”	Total Number of Responses to the Item	Percent Positive Response on Item
<b>Item E1:</b>				
“Please give your work area/unit in this hospital an overall grade on patient safety.”	193	NA*	250	193/250 = 77%
<b>Item G1:</b>				
“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 (item E1) percent positive response is calculated by combining the percentage of respondents who answered “Excellent” and “Very Good.” The Number of Events Reported (item G1) percent positive response is calculated by combining the percentage of respondents who answered that they reported one or more events in the past 12 months.

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. First, we calculated percent positive scores only for hospitals that had at least 10 completed surveys. Second, item-level results were calculated only when there were at least three responses to the item. If a hospital had fewer than three responses to a survey item, the hospital’s score for that item was set to missing. Starting with the 2014 Comparative Database, if a hospital had at least five respondents 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<sup>®</sup> 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 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup>, or 90<sup>th</sup> percentile.

For example, to calculate the 10<sup>th</sup> percentile, one would multiply 653 (the total number of hospitals) by .10 (10<sup>th</sup> percentile). The product of  $n \times p$  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  $j^{\text{th}}$  position plus the percent positive value of the hospital in the  $j^{\text{th}} + 1$  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  $j^{\text{th}} + 1$  position.

The following examples show how the 10<sup>th</sup> and 50<sup>th</sup> percentiles would be computed using a sample of percent positive scores from 12 hospitals (using fake data shown in Table 3). First, the percent positive scores are sorted from low to high on Composite “A.”

**Table 3. Data Table for Example of How To Compute Percentiles**

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

### 10<sup>th</sup> percentile

- For the 10<sup>th</sup> percentile, we would first multiply the number of hospitals by .10:  
 $(n \times p = 12 \times .10 = 1.2)$ .
- The product of  $n \times p = 1.2$ , where  $j = 1$  and  $g = 2$ . Since  $g$  is *not* equal to 0, the 10<sup>th</sup> percentile score is equal to the percent positive value of the hospital in the  $j^{\text{th}} + 1$  position:
  - $j$  equals 1.
  - The 10<sup>th</sup> percentile equals the value for the hospital in the 2<sup>nd</sup> position = 48%.

### 50<sup>th</sup> percentile

1. For the 50<sup>th</sup> percentile, we would first multiply the number of hospitals by .50:  
 $(n \times p = 12 \times .50 = 6.0)$ .
2. The product of  $n \times p = 6.0$ , where  $j = 6$  and  $g = 0$ . Since  $g = 0$ , the 50<sup>th</sup> percentile score is equal to the percent positive value of the hospital in the  $j^{\text{th}}$  position plus the percent positive value of the hospital in the  $j^{\text{th}} + 1$  position, divided by 2:
  - a.  $j$  equals 6.
  - b. The 50<sup>th</sup> percentile equals the average of the hospitals in the 6<sup>th</sup> and 7<sup>th</sup> positions  
 $(64\% + 66\%)/2 = 65\%$ .

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AHRQ Publication No. 14-0019-EF  
March 2014