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Hospital Survey on Patient Safety Culture: 2010 User Comparative Database Report

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Executive Summary

In response to requests from hospitals interested in comparing their results to other hospitals on the *Hospital Survey on Patient Safety Culture (hospital survey)*, the Agency for Healthcare Research and Quality (AHRQ) established the *Hospital Survey on Patient Safety Culture Comparative Database*. The first user comparative database report was released in 2007 and included data from 382 U.S. hospitals. Subsequent reports in 2008 and 2009 included data from more hospitals and respondents.

The *Hospital Survey on Patient Safety Culture 2010 User Comparative Database Report* includes more data than any previous report, displaying results from 885 hospitals and 338,607 hospital staff respondents. The 2010 report also includes a chapter on trending that presents results showing change over time for 321 hospitals that administered the survey and submitted data more than once.

Hospitals do not necessarily administer the hospital patient safety culture survey every year. They may administer it on an 18-month, 24-month, or other cycle. Therefore, the comparative database is a “rolling” indicator. It retains data from prior years when a hospital does not have new data to submit, replaces older data with more recent data when available, and adds data from hospitals submitting for the first time. The user comparative database report will be produced yearly through at least 2012.

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 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.

Development of the Survey

The hospital survey was pilot tested and revised and then released in November 2004 (AHRQ, 2004). It was designed to assess hospital staff opinions about patient safety issues, medical error, and event reporting. The survey includes 42 items that measure 12 areas or composites of patient safety culture, including:

1. Communication openness
2. Feedback and communication about error
3. Frequency of events reported
4. Handoffs and transitions

5. Management support for patient safety
6. Nonpunitive response to error
7. Organizational learning—continuous improvement
8. Overall perceptions of patient safety
9. Staffing
10. Supervisor/manager expectations and actions promoting safety
11. Teamwork across units
12. Teamwork within units

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

2010 Database Hospitals

The 885 hospitals in the 2010 database fall into two categories:

- 347 hospitals from the previous database report that are still included in the 2010 report; and
- 538 hospitals that submitted data for the 2010 report.

Survey Administration Statistics

- The average hospital response rate was 56 percent, with an average of 383 completed surveys per hospital.
- Most hospitals (45 percent) administered Web surveys, which resulted in lower response rates (50 percent) compared with response rates from paper (63 percent) or mixed-mode surveys (56 percent).
- Most hospitals (75 percent) administered the survey to all staff or a sample of all staff from all hospital departments.

Characteristics of Participating Hospitals

- Participating hospitals represent a range of bed sizes and geographic regions.
- Most hospitals are nonteaching (68 percent) and non-government owned (voluntary/nonprofit or proprietary/investor owned) (81 percent).
- Overall, the characteristics of the 885 database hospitals are fairly consistent with the distribution of U.S. hospitals registered with the American Hospital Association (AHA).

Characteristics of Respondents

- There were 338,607 hospital staff respondents from 885 hospitals.
- One-third of respondents (33 percent) selected “Other” as their work area, followed by “Medicine” (10 percent) and “Surgery” (9 percent).
- More than one-third of respondents (36 percent) selected “Registered Nurse” or “Licensed Vocational Nurse/Licensed Practical Nurse (LVN/LPN)” as their staff position, followed by “Other” (21 percent) and “Technician (e.g., EKG, Lab, Radiology)” (11 percent).
- Most respondents (76 percent) indicated that they had direct interaction with patients.

Areas of Strength for Most Hospitals

Two areas emerged as areas of strength. Results are expressed in terms of percent positive response. 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 response (e.g., Disagree) to negatively worded items (e.g., “We have safety problems in this unit”).

Teamwork Within Units—This is an area of strength for most hospitals, with the highest average percent positive response (80 percent). This composite is defined as the extent to which staff support each other, treat each other with respect, and work together as a team. The survey items with the highest average percent positive response (86 percent) were: “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.”

Supervisor/Manager Expectations & Actions Promoting Patient Safety—This is also an area of strength for most hospitals, with a high average percent positive response (75 percent). This composite is defined as 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. The survey items with the highest average percent positive response (77 percent) were: “My supervisor/manager seriously considers staff suggestions for improving patient safety,” and, “My supervisor/manager overlooks patient safety problems that happen over and over.”

Patient Safety Grade—On average, most respondents within hospitals (74 percent) gave their work area or unit a grade of either “A-Excellent” (27 percent) or “B-Very Good” (47 percent) on patient safety. However, the grades varied widely, from at least one hospital where none of the respondents (0 percent) gave their unit a patient safety grade of “A-Excellent” to a hospital where 65 percent did.

Areas With Potential for Improvement for Most Hospitals

Three areas showed potential for improvement.

Nonpunitive Response to Error—This is an area with potential for improvement for most hospitals. Nonpunitive response to error is defined as 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. This area was one of the two patient safety culture composites with the lowest average percent positive response (44 percent). The survey item with the lowest average percent positive response was: “Staff worry that mistakes they make are kept in their personnel file” (an average of only 35 percent).

Handoffs and Transitions—The extent to which important patient care information is transferred across hospital units and during shift changes was the other patient safety culture composite with the lowest average percent positive response (44 percent). The survey item with the lowest average percent positive response was: “Things ‘fall between the cracks’ when transferring patients from one unit to another” (an average of only 41 percent).

Number of Events Reported—On average, most respondents within hospitals (53 percent) reported no events in their hospital over the past 12 months. It is likely events were underreported. 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. However, responses varied widely, ranging from one hospital where 82 percent of respondents had not reported a single event over the past 12 months to a hospital where only 14 percent had not reported an event.

Results by Hospital Characteristics

Results on the survey’s patient safety culture composites, patient safety grade, and number of event reports by hospital characteristics (bed size, teaching status, ownership and control, geographic region) are highlighted. A 5 percentage point difference in percent positive scores was used as a rule of thumb to identify meaningful differences in scores.

Bed Size

- Smaller hospitals (49 beds or fewer) had the highest average percent positive response on all 12 patient safety culture composites.
- Large hospitals (400-499 beds) scored lowest on the percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (70 percent positive for 400-499 beds compared with 79 percent positive for 25-49 beds).
- There were no noticeable differences on number of events reported based on bed size (all differences were 3 percentage points or less).

Teaching Status and Ownership and Control

- Non-teaching hospitals had a higher average percent positive response on *Handoffs and Transitions* than teaching hospitals (46 percent positive compared with 41 percent positive).
- There were no noticeable differences on the patient safety culture composites based on ownership and control (all differences were 3 percentage points or less).
- There were no noticeable differences on patient safety grade or number of events reported based on teaching status or ownership and control (all differences were 2 percentage points or less).

Geographic Region*

- East South Central hospitals had the highest average percent positive response across the composites (66 percent positive); Mid-Atlantic/New England hospitals had the lowest (60 percent positive).
- West South Central hospitals scored highest on the percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (78 percent).
- Pacific hospitals had the highest percentage of respondents who reported one or more events in the past year (53 percent); the lowest percentage of respondents reporting events was in the West South Central region (41 percent).

Results by Respondent Characteristics

Results on the survey’s patient safety culture composites, patient safety grade, and number of events reported by respondent characteristics (work area/unit, staff position, interaction with patients) are highlighted. A 5 percentage point difference in percent positive scores was used as a rule of thumb to identify meaningful differences in scores.

Work Area/Unit

- Respondents in *Rehabilitation* had the highest average percent positive response across the composites (68 percent positive); *Emergency* had the lowest (57 percent positive).
- *Rehabilitation* had the highest percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (84 percent); *Emergency* had the lowest percentage (62 percent).

* NOTE: States are categorized into AHA-defined regions as follows:

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

South Atlantic: DC, DE, FL, GA, MD, NC, SC, VA, WV

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: AK, CA, HI, OR, WA

- *ICU (any type)* had the highest percentage of respondents reporting one or more events in the past year (65 percent); *Anesthesiology* had the lowest percentage of respondents reporting events (40 percent).

Staff Position

- Respondents in *Administration/Management* had the highest average percent positive response across the composites (73 percent positive); *Pharmacists* had the lowest (58 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” (85 percent); *Pharmacists* had the lowest percentage (65 percent).
- *Pharmacists* had the highest percentage of respondents reporting one or more events in the past year (72 percent); *Unit Assistants/Clerks/Secretaries* and *Dietitians* had the lowest percentage reporting events (19 percent).

Interaction With Patients

- Respondents *with* direct patient interaction were 8 percent more positive on *Handoffs and Transitions* compared with those *without* direct patient interaction (46 percent positive compared with 38 percent positive).
- Respondents *without* direct patient interaction were 6 percent more positive about *Management Support for Patient Safety* than those *with* direct patient interaction (77 percent positive compared with 71 percent positive).
- Respondents *without* direct patient interaction had the highest percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (79 percent) compared with those *with* direct patient interaction (74 percent).
- More respondents *with* direct patient interaction reported one or more events in the past year (52 percent) than respondents *without* direct patient interaction (31 percent).

Trending: Comparing Results Over Time

This report highlights results regarding changes over time on the patient safety culture composites, patient safety grade, and number of events reported for the 321 hospitals (of the 885 total database hospitals) that administered the survey and submitted data more than once. When comparing results over time, a 5 percentage point difference in percent positive scores between the previous and most recent survey administrations was used as a rule of thumb to identify meaningful changes in scores over time.

Trending Hospitals

- There were 321 trending hospitals in the 2010 database.
- For the 321 hospitals with trending data, the average length of time between previous and most recent survey administrations was 19 months (range: 6 months to 46 months).
- The distribution of the 321 trending hospitals by bed size, teaching status, and ownership and control is similar to the distribution of the 885 database hospitals.

Trending: Overall Summary Statistics

- The average change in percent positive scores between administrations on the patient safety culture composites was a slight increase of 2 percentage points (ranging from 1 to 3 percentage points).
- There were no noticeable differences over time in the percentage of respondents who gave their work area/unit a patient safety grade of “A-Excellent” and “B-Very Good” (average percentage increased by 4 percentage points).
- There were no noticeable differences over time in the number of events reported by respondents in the past 12 months (average percentage increased by only 1 percentage point).

Trending: Largest Increases and Decreases

- Most hospitals changed less than 5 percentage points on the 12 composites (ranging from 46 percent to 63 percent of hospitals on each of the composites).
- The composites with the largest percentage of hospitals that increased 5 percentage points or more were *Management Support for Patient Safety* and *Staffing* (38 percent of trending hospitals increased by at least 5 percentage points).
- The composite with the largest percentage of hospitals that decreased 5 percentage points or more was *Handoffs and Transitions* (23 percent of trending hospitals decreased by at least 5 percentage points).
- In 41 percent of trending hospitals, the percentage of respondents providing patient safety grades of “A-Excellent” or “B-Very Good” *increased* by 5 percentage points or more. However, almost as many (40 percent) had changes of less than 5 percentage points.
- In 23 percent of trending hospitals, the percentage of respondents reporting one or more events *increased* by at least 5 percentage points. However, 29 percent of trending hospitals *decreased* by 5 percentage points or more.

Trending: Number of Composites That Changed Over Time

- Most hospitals (77 percent) *increased* by 5 percentage points or more on at least one composite.
- About half of the hospitals (48%) changed less than 5 percentage points on 7 or more composites.
- About half of the hospitals (51%) *decreased* by 5 percentage points or more on at least one composite.

Additional Trending Analyses

This report highlights quantitative and qualitative data on changes in patient safety culture over time. Quantitative data include questionnaire data on actions taken by the trending hospitals to improve their patient safety culture. Qualitative data consist of findings from nine interviews conducted with staff of trending hospitals, who provided potential explanations for increases and decreases in their hospitals' survey scores.

Trending Results by Hospital Characteristics

Results for the 321 trending hospitals regarding changes over time by hospital characteristics (e.g., bed size, ownership, and teaching status) are highlighted. When comparing results over time, a 5 percentage point change in percent positive scores between the previous and most recent survey administrations was used as a rule of thumb to identify meaningful changes in scores. Types of hospitals with the greatest increases in scores over time are highlighted.

Trending: Bed Size

- Large hospitals (400-499 beds) had the greatest increases in percent positive response over time on 7 of the 12 composites (average increase of 5 percentage points across these 7 composites).
- Small hospitals (6-24 beds) had the greatest increase in percentage of respondents who gave their work area/unit a patient safety grade of "Excellent" or "Very Good" (a 7 percentage point increase, from 73 percent in the previous administration to 80 percent in the most recent administration).

Trending: Teaching Status and Ownership and Control

- There were no noticeable changes over time on the patient safety culture composites by teaching status or ownership and control (all changes were 4 percentage points or less).

Trending Results by Respondent Characteristics

Results for the 321 trending hospitals regarding changes over time by respondent characteristics are highlighted. When comparing results over time, a 5 percentage point difference in percent positive scores between the previous and most recent survey administrations was used as a rule of thumb to identify meaningful changes in scores. Groups with the greatest increases or decreases in scores over time are highlighted.

Trending: Work Area/Unit

- *Obstetrics* had the greatest increase in percent positive response on 5 of the 12 patient safety culture composites (average increase of 6 percentage points across these 5 composites).
- *ICU, Pediatrics, and Pharmacy* had the greatest increases over time in average percentage of respondents giving their work area/unit a patient safety grade of “Excellent” or “Very Good” (each increased by 6 percentage points).
- There were no noticeable increases in the average percentage of respondents reporting one or more events in the past year. The largest decrease was in *Anesthesiology* (a 10 percentage point decrease).

Trending: Staff Position

- *Administration/Management* had the greatest increase in percent positive response over time on 7 of the 12 patient safety culture composites (average increase across the 7 composites was 5 percentage points).
- *Therapists* had the largest increase over time in average percentage of respondents giving their work area/unit a patient safety grade of “Excellent” or “Very Good” (5 percentage point increase).

Trending: Interaction With Patients

- There were no noticeable changes over time on the patient safety culture composites by level of interaction with patients (all changes were 4 percentage points or less).

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 other hospitals on the *Hospital Survey on Patient Safety Culture (hospital survey)*, the Agency for Healthcare Research and Quality (AHRQ) established the *Hospital Survey on Patient Safety Culture Comparative Database*. The first user comparative database report was released in 2007 and included data from 382 U.S. hospitals. Subsequent reports in 2008 and 2009 included data from more hospitals and respondents.

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- 538 hospitals that submitted data for the 2010 report.

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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 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.

This report presents statistics (averages, standard deviations, minimum and maximum scores, and percentiles) on the patient safety culture areas or composites assessed in the survey and on survey items. In addition, the 2010 report includes a chapter on trending that describes patient safety culture change over time for the 321 hospitals that submitted data from their previous and most recent safety culture surveys.

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

Appendixes C and D show trends over time for the 321 hospitals that administered the survey and submitted data more than once. Average percent positive scores from the most recent and previous administrations are shown on the survey composites and items. Appendix C shows scores broken down by hospital characteristics (bed size, teaching status, ownership and control). Appendix D shows scores broken down by respondent characteristics (hospital work area/unit, staff position, interaction with patients).

Note: Because several hospital geographic region breakout categories had fewer than 20 trending hospitals, trending results are not shown by hospital geographic region to ensure hospital confidentiality.

2010 User Comparative Database Report

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.

Development of the Survey

Recognizing the need for a measurement tool to assess the culture of patient safety in health care organizations, the Medical Errors Workgroup of the Quality Interagency Coordination Task Force (QuIC) sponsored the development of a hospital survey focusing on patient safety culture. The Agency for Healthcare Research and Quality (AHRQ) funded and supervised development of the *Hospital Survey on Patient Safety Culture (hospital survey)*. 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 survey was pilot tested and revised and then released by AHRQ in November 2004. It was designed to assess hospital staff opinions about patient safety issues, medical error, and event reporting and 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, are given feedback about changes implemented, and discuss ways to prevent errors
3. Frequency of events reported	Mistakes of the following types are reported: (1) mistakes caught and corrected before affecting the patient, (2) mistakes with no potential to harm the patient, and (3) mistakes that could harm the patient but do not
4. Handoffs and transitions	Important patient care information is transferred across hospital units and during shift changes
5. Management support for patient safety	Hospital management provides a work climate that promotes patient safety and shows that patient safety is a top priority
6. Nonpunitive response to error	Staff feel that their mistakes and event reports are not held against them and that mistakes are not kept in their personnel file

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

Patient Safety Culture Composite	Definition: <i>The extent to which....</i>
7. Organizational learning—Continuous improvement	There is a learning culture in which mistakes lead 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 one another, treat one another 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 have 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, etc). The survey’s toolkit materials are available at the AHRQ Web site (<http://www.ahrq.gov/qual/patientsafetyculture/>) and include the survey, survey items and dimensions, user’s guide, feedback report template, information about acquiring the Microsoft Excel™ Data Entry and Analysis Tool, an article about safety culture assessment, and a series of three national technical assistance conference calls. 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 2010 Comparative Database and Report

Since its release, the hospital survey has been widely implemented across the United States. Hospitals administering the survey have expressed interest in comparing their results with other hospitals as an additional source of information to help them identify areas of strength and areas for improvement. In response to these requests, AHRQ funded the *Hospital Survey on Patient Safety Culture Comparative Database* to enable hospitals to compare their most recent survey results with other hospitals and to examine trends in patient safety culture over time. Hospitals interested in submitting to the database should go to the AHRQ Web site for more information (<http://www.ahrq.gov/qual/hospsurveydb/y2dbsubmission.htm>).

What’s New in the 2010 User Comparative Database Report?

The *Hospital Survey on Patient Safety Culture 2010 User Comparative Database Report* is an update of the 2009 report, presenting the most current survey data and trending data available. The 2010 report includes 321 trending hospitals that submitted data to the comparative database more than once, which provides substantially more data to analyze trends in patient safety culture over time. On average, hospitals show small increases in the patient safety culture

composites and survey items over time. The average increase in composite scores across the 321 trending hospitals is 2 percent (ranging from 1 percent to 3 percent). In addition, the 2010 report contains questionnaire data on actions taken by 292 trending hospitals to improve patient safety culture.

In addition, we enacted several new rules regarding a minimum number of responses for calculating the percent positive scores. First, we only calculated percent positive scores for hospitals that had at least 10 completed surveys. Second, item-level results were only calculated 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. Third, if a hospital had fewer than five respondents in a breakout category (e.g., work area/unit, staff position, direct interaction with patients), no statistics were calculated for that breakout category (i.e., all scores were set to missing). These minimums also apply to the statistics displayed in Appendixes B and D (results by respondent characteristics).

Data Limitations

The survey results presented in this report represent the largest compilation of hospital survey data currently available and therefore provide a useful reference for comparison. However, there are several limitations to these data that 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. 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 U.S. hospitals registered with the American Hospital Association (AHA) and are described further in Chapter 3.

Second, hospitals that administered the survey were not required to undergo any training and administered it in different ways. Some hospitals used a paper-only survey, others used Web-only surveys, and others used a combination of these two methods to collect the data. It is possible that these different modes could lead to differences in survey responses; further research is needed to determine whether mode of administration affects the results.

In addition, some hospitals conducted a census, surveying all hospital staff, while others administered the survey to a sample of staff. In cases in which 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 out-of-range values (e.g., invalid response values due to data entry errors) and blank records (where responses to all survey items were missing). In addition, some logic checks were made. 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 on the 2010 database hospitals regarding how they conducted the survey.

Highlights

- The 2010 database consists of data from 338,607 hospital staff respondents across 885 participating hospitals.
- The average hospital response rate was 56 percent, with an average of 383 completed surveys per hospital.
- Most hospitals (45 percent) administered Web surveys, which resulted in lower response rates (50 percent) compared with response rates from paper (63 percent) or mixed-mode surveys (56 percent).
- Most hospitals (75 percent) administered the survey to all staff or a sample of all staff from all hospital departments.

The 2010 database consists of survey data from 885 hospitals with a total of 338,607 hospital staff respondents. Participating hospitals administered the hospital survey to their staff between January 2006 and July 2009 and voluntarily submitted their data for inclusion in the database.

Hospitals do not necessarily administer the hospital patient safety culture survey every year. They may administer it on an 18-month, 24-month, or other cycle. Therefore, the comparative database is a “rolling” indicator. Data from prior years are retained in the database when a hospital does not have new data to submit, older data are replaced with more recent data when available, and data are added from hospitals submitting for the first time.

In order to keep the database current, data more than 3½ years old are removed. Thus, 65 hospitals that administered the survey prior to January 1, 2006, were dropped from the 2010 database.

Overall statistics for the hospitals included in the 2010 database are shown in Table 2-1a, according to when the data were submitted. The 2010 database includes 347 hospitals carried over from the 2009 report and new data submissions from 538 hospitals. Previous or old data from hospitals that submitted more than once were replaced by data from their readministration, so the database reflects their most recent survey data. As shown in Table 2-1b, the 2010 database includes 564 hospitals that submitted data to the database once and 321 trending hospitals that submitted data to the database more than once.

Table 2-1a. Overall Statistics for the 2010 Database Participating Hospitals

Overall Statistic	Retained from the 2009 Database	Submitted for the 2010 Database	Total 2010 Database
Number of hospitals	347	538	885
Number of individual survey respondents	100,106	238,501	338,607

Table 2-1b. Statistics for Nontrending and Trending Hospitals in 2010 Database

Overall Statistic	Nontrending (submitted once)	Trending (submitted more than once)	Total 2010 Database
Number of hospitals	564	321	885
Number of individual survey respondents	210,654	127,953	338,607

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

Table 2-2. Summary Statistics for 2010 Database Participating Hospitals

Average number of completed surveys per hospital (range: 10 to 3,710)	383
Average number of surveys administered per hospital (range: 10 to 8,500)	936
Average hospital response rate (range: 3% to 100%)	56%

Most hospitals administered only Web surveys (45 percent), followed by paper only (32 percent) and mixed-mode administration involving both paper and Web surveys (23 percent) (Table 2-3).

Table 2-3. Survey Administration Statistics

Survey Administration Mode	2010 Database Hospitals		2010 Database Respondents	
	Number	Percent	Number	Percent
Paper only	280	32%	56,413	17%
Web only	401	45%	185,889	55%
Both paper and Web	204	23%	96,305	28%
TOTAL	885	100%	338,607	100%

Table 2-4 shows average response rate by survey mode. Paper survey administration had a higher average response rate than Web or mixed mode. It is therefore still an overall recommendation that hospitals conduct the hospital survey as a paper survey. But each hospital should consider its prior experience with survey modes and response rates when determining which mode is best.

Table 2-4. Average Hospital Response Rate by Mode

Survey Administration Mode	Average Hospital Response Rate
Paper only	63%
Web only	50%
Both Web and paper	56%

Most hospitals (75 percent) administered the survey to a census of all hospital staff, or a sample of staff, from all hospital work areas/units. Fewer hospitals (19 percent) administered the survey to a subset of selected staff or work areas/units. Fifty-two hospitals (6 percent) administered the survey to a subset of selected staff and selected work areas/units (Table 2-5).

Table 2-5. Types of Staff or Work Areas/Units Surveyed

Types of Staff or Work Areas/Units Surveyed	2010 Database Hospitals		2010 Database Respondents	
	Number	Percent	Number	Percent
All staff, or a sample of all staff, from all work areas/units	665	75%	277,610	82%
Selected staff only	131	15%	33,568	10%
Selected work areas/units only	37	4%	6,408	2%
Selected staff <u>and</u> selected work areas/units	52	6%	21,021	6%
TOTAL	885	100%	338,607	100%

Chapter 3. Characteristics of Participating Hospitals

As background for understanding the survey results, 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 U.S. hospitals registered with the American Hospital Association (AHA). The characteristics of database hospitals by AHA-defined categories of bed size, teaching status, ownership and control, and geographic region are presented in the following tables.ⁱ Database hospitals and survey respondents are described, as well as the distribution of U.S. AHA-registered hospitals included in the 2006 AHA Annual Survey of Hospitals.ⁱⁱ

Highlights

- Participating hospitals represent a range of bed sizes and geographic regions.
- Most hospitals are nonteaching (68 percent) and non-government owned (voluntary/nonprofit or proprietary/investor owned) (81 percent).
- Overall, the characteristics of the 885 database hospitals are fairly consistent with the distribution of U.S. 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. The largest group of database hospitals (21 percent) falls into the bed size category of 100 to 199 beds. Most of the database hospitals (64 percent) have fewer than 200 beds, which is similar to the percentage of AHA-registered U.S. hospitals (74 percent).

It is important to note that while smaller hospitals are more prevalent in the database, they account for fewer respondents than larger hospitals. Hospitals with fewer than 200 beds account for a little over 30 percent of all database respondents (103,976 respondents), whereas hospitals with 200 or more beds account for more than twice as many respondents (234,631 respondents, or 69 percent).

ⁱ To ensure hospital confidentiality, a rule was established requiring at least 20 hospitals to be in a particular breakout category before data would be displayed for that category. Therefore, some of the standard AHA categories have been combined.

ⁱⁱ Data for AHA-registered hospitals were obtained from the 2004 AHA Annual Survey of Hospitals Database or the 2006 AHA Annual Survey of Hospitals Database, © 2007 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 and teaching status.

Table 3-1. Distribution of Database Hospitals and Respondents by Bed Size Compared With AHA-Registered U.S. Hospitals

Bed Size	AHA-Registered U.S. Hospitals		2010 Database Hospitals		2010 Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
6-24 beds	607	10%	73	8%	4,692	1%
25-49 beds	1,374	22%	161	18%	18,049	5%
50-99 beds	1,329	21%	151	17%	24,457	7%
100-199 beds	1,341	21%	189	21%	56,778	17%
200-299 beds	704	11%	129	15%	66,220	20%
300-399 beds	402	6%	70	8%	51,011	15%
400-499 beds	205	3%	47	5%	38,312	11%
500 or more beds	318	5%	65	7%	79,088	23%
TOTAL	6,280	100%	885	100%	338,607	100%

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

Teaching Status

As shown in Table 3-2, most database hospitals were nonteaching (68 percent), which is similar to the distribution of AHA-registered U.S. hospitals.

Table 3-2. Distribution of Database Hospitals and Respondents by Teaching Status Compared With AHA-Registered U.S. Hospitals

Teaching Status	AHA-Registered U.S. Hospitals		2010 Database Hospitals		2010 Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Teaching	1,442	23%	285	32%	172,122	51%
Nonteaching	4,838	77%	600	68%	166,485	49%
TOTAL	6,280	100%	885	100%	338,607	100%

Ownership and Control

As shown in Table 3-3, most database hospitals were non-government owned (81 percent), which is similar to the distribution of AHA-registered U.S. hospitals.

Table 3-3. Distribution of Database Hospitals and Respondents by Ownership and Control Compared With AHA-Registered U.S. Hospitals

Ownership and Control	AHA-Registered U.S. Hospitals		2010 Database Hospitals		2010 Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Government (Federal or non-Federal)	1,645	26%	172	19%	36,658	11%
Nongovernment (voluntary/nonprofit or proprietary/investor owned)	4,635	74%	713	81%	301,949	89%
TOTAL	6,280	100%	885	100%	338,607	100%

Geographic Region

Table 3-4 shows the distribution of database hospitals by AHA-defined geographic regions.* The largest percentages of database hospitals are from the East North Central region (23 percent), followed by the South Atlantic (15 percent) and West North Central regions (14 percent). The database distribution underrepresents Mid-Atlantic/New England and West South Central hospitals and overrepresents East North Central hospitals compared with the distribution of AHA-registered U.S. hospitals.

Table 3-4. Distribution of Database Hospitals and Respondents by Geographic Region Compared With AHA-Registered U.S. Hospitals

Region	AHA-Registered U.S. Hospitals		2010 Database Hospitals		2010 Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Mid-Atlantic/New England	878	14%	78	9%	44,482	13%
South Atlantic	963	15%	131	15%	52,663	16%
East North Central	905	14%	207	23%	82,308	24%
East South Central	534	9%	71	8%	20,512	6%
West North Central	794	13%	128	14%	29,600	9%
West South Central	1,063	17%	100	11%	40,911	12%
Mountain	484	8%	68	8%	26,231	8%
Pacific	659	10%	102	12%	41,900	12%
TOTAL	6,280	100%	885	100%	338,607	100%

* NOTE: States are categorized into AHA-defined regions as follows:

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

Chapter 4. Characteristics of Respondents

This chapter describes respondents within the participating hospitals. The data presented here are based on respondents' answers to survey questions about the hospital work area/unit where they spent most of their work time, their staff position, and their direct interaction with patients. In the tables presented in this chapter, respondents from hospitals that omitted one of these questions, or those who did not respond, are shown as missing in the tables and are excluded from total percentages.

Highlights

- There were 338,607 hospital staff respondents from 885 hospitals.
- One-third of respondents (33 percent) selected “Other” as their work area, followed by “Medicine” (10 percent) and “Surgery” (9 percent).
- More than one-third of respondents (36 percent) selected “Registered Nurse” or “Licensed Vocational Nurse/Licensed Practical Nurse (LVN/LPN)” as their staff position, followed by “Other” (21 percent) and “Technician (e.g., EKG, Lab, Radiology)” (11 percent).
- Most respondents (76 percent) indicated they had direct interaction with patients.

Work Area/Unit

One-third of respondents (33 percent) selected “Other” as their work area, followed by “Medicine” (10 percent) and “Surgery” (9 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 that 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. Distribution of Database Respondents by Work Area/Unit

Work Area/Unit	2010 Database Respondents	
	Number	Percent
Other	105,911	33%
Medicine	30,469	10%
Surgery	28,372	9%
Many different hospital units/No specific unit	25,491	8%
Intensive care unit (any type)	22,497	7%
Radiology	18,513	6%
Emergency	16,958	5%
Laboratory	15,954	5%
Obstetrics	13,133	4%
Rehabilitation	12,291	4%
Pediatrics	10,777	3%
Pharmacy	9,297	3%
Psychiatry/mental health	7,520	2%
Anesthesiology	1,914	1%
TOTAL	319,097	100%
Missing: Did not answer or were not asked the question	19,510	
Overall total	338,607	

Staff Position

More than one-third of respondents (36 percent) selected “Registered Nurse” or “Licensed Vocational Nurse/Licensed Practical Nurse (LVN/LPN)” as their staff position, followed by “Other” (21 percent) and “Technician (e.g., EKG, Lab, Radiology)” (11 percent) (Table 4-2). Similar to the work area/unit question, many respondents chose the “Other” response option that 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. Distribution of Database Respondents by Staff Position

Staff Position	2010 Database Respondents	
	Number	Percent
Registered Nurse (RN) or Licensed Vocational Nurse (LVN)/ Licensed Practical Nurse (LPN)	114,991	36%
Other	67,030	21%
Technician (EKG, Lab, Radiology)	34,845	11%
Administration/Management	23,961	8%
Unit Assistant/Clerk/Secretary	21,170	7%
Patient Care Asst/Hospital Aide/Care Partner	18,322	6%
Therapists (Respiratory, Physical, Occupational, or Speech)	16,282	5%
Attending/Staff Physician, Resident Physician/ Physician in Training, or Physician Assistant (PA)/Nurse Practitioner (NP)	15,127	5%
Pharmacist	5,524	2%
Dietitian	2,057	1%
TOTAL	319,309	100%
Missing: Did not answer or were not asked the question	19,298	
Overall total	338,607	

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

Interaction With Patients

The survey asked respondents whether they typically have direct interaction or contact with patients. As shown in Table 4-3, most respondents (76 percent) indicated “yes,” they had direct interaction with patients.

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

Interaction With Patients	2010 Database Respondents	
	Number	Percent
YES, have direct patient interaction	243,444	76%
NO, do NOT have direct patient interaction	77,355	24%
TOTAL	320,799	100%
Missing: Did not answer or were not asked the question	17,808	
Overall total	338,607	

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 of hospital characteristics 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. There are almost twice as many respondents from larger hospitals as those from smaller hospitals (as noted in Chapter 3).

Highlights

- *Teamwork Within Units*—the extent to which staff support each other, treat each other with respect, and work together as a team. This area was the patient safety culture composite with the highest average percent positive response (80 percent), indicating it is a strength for most hospitals.
- *Supervisor/Manager Expectations & Actions Promoting Patient Safety*—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. This area was the patient safety culture composite with the second highest average percent positive response (75 percent), indicating it is a strength for most hospitals.
- *Nonpunitive Response to Error*—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. This area was one of the two patient safety culture composites with the lowest average percent positive response (44 percent), indicating it is an area with potential for improvement for most hospitals.
- *Handoffs and Transitions*—the extent to which important patient care information is transferred across hospital units and during shift changes. This area was the other patient safety culture composite with the lowest average percent positive response (44 percent), indicating it is also an area with potential for improvement for most hospitals.
- On average, most respondents within hospitals (74 percent) gave their work area or unit a grade of “A-Excellent” (27 percent) or “B-Very Good” (47 percent) on patient safety; this was identified as an area of strength for most hospitals.
- On average, most respondents within hospitals (53 percent) reported no events in their hospital over the past 12 months. It is likely that this represents underreporting of events and was identified as an area for improvement for most hospitals.

Results: Composite and Item-Level Charts

The methods for calculating the percent positive scores at the item and composite level are described in the Notes section of this document. However, 46 hospitals did not administer the entire survey; they excluded one or more of the nondemographic survey items. These 46 hospitals were excluded from the composite calculations because they omitted one or more of the items within a particular composite.

Composite-Level Results

The composite-level results in Chart 5-1 show the average percent positive response for each of the 12 patient safety culture composites, across all hospitals in the database. The patient safety culture composites are shown in order from the highest average percent positive response to the lowest.

Teamwork Within Units—the extent to which staff support one another, treat one another with respect, and work together as a team. This area was the patient safety culture composite with the highest average percent positive response (80 percent), indicating it is an area of strength across the database hospitals (Chart 5-1).

Nonpunitive Response to Error—the extent to which staff feel that event reports and their own mistakes are not held against them and that mistakes are not kept in their personnel file. This area was one of the two patient safety culture composites with the lowest average percent positive response (44 percent), indicating it is an area with potential for improvement across the database hospitals (Chart 5-1).

Handoffs and Transitions—the extent to which important patient care information is transferred across hospital units and during shift changes. This area was the other patient safety culture composite with the lowest average percent positive response (44 percent), indicating it is also an area with potential for improvement for most hospitals (Chart 5-1).

Item-Level Results

The item-level results in Chart 5-2 show 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. The survey items with the highest average percent positive response (86 percent) 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.”

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

Patient Safety Grade—Results from the item that asked respondents to give their hospital work area/unit an overall grade on patient safety are shown in Chart 5-3. The chart shows the average percentage of respondents within each hospital providing grades from “A-Excellent” to “E-Failing.” On average across hospitals, most respondents were positive, with 74 percent giving their work area or unit a patient safety grade of “A-Excellent” (27 percent) or “B-Very Good” (47 percent). Very few (5 percent) gave their work area/unit a “Poor” (4 percent) or “Failing” (1 percent) grade.

Number of Events Reported—Results from the item that asked respondents to indicate the number of events they had reported over the past 12 months are shown in Chart 5-4. The chart shows the average percentage of respondents within each hospital who indicated that they reported “No event reports” up to “21 or more event reports.” On average across hospitals, most respondents (53 percent) reported no events in their hospital over the past 12 months. Event reporting was identified as an area for improvement for most hospitals. Underreporting of events means potential patient safety problems may not be recognized or identified and therefore may not be addressed.

Chart 5-1. Composite-Level Average Percent Positive Response—Across All 2010 Database Hospitals

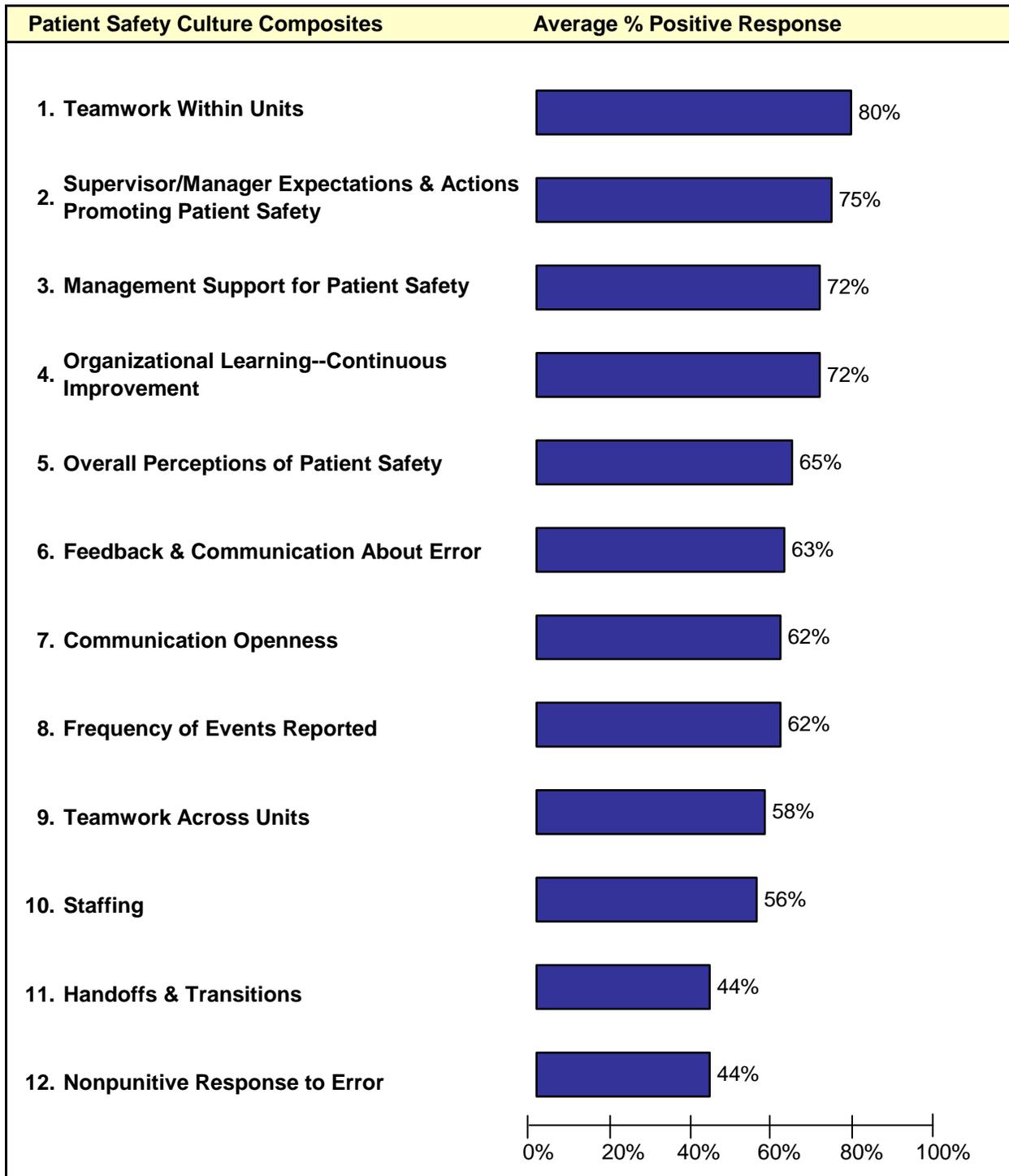
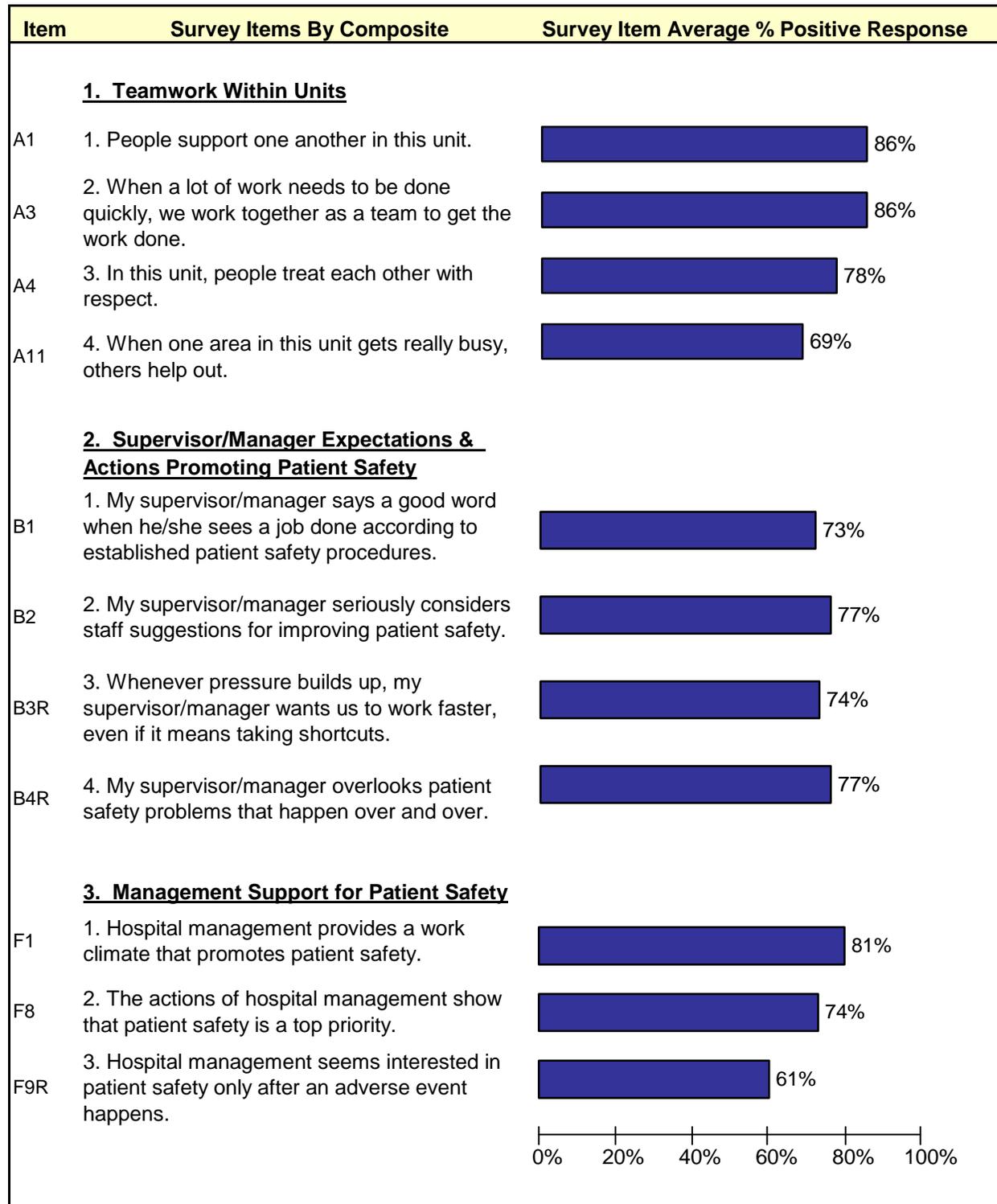
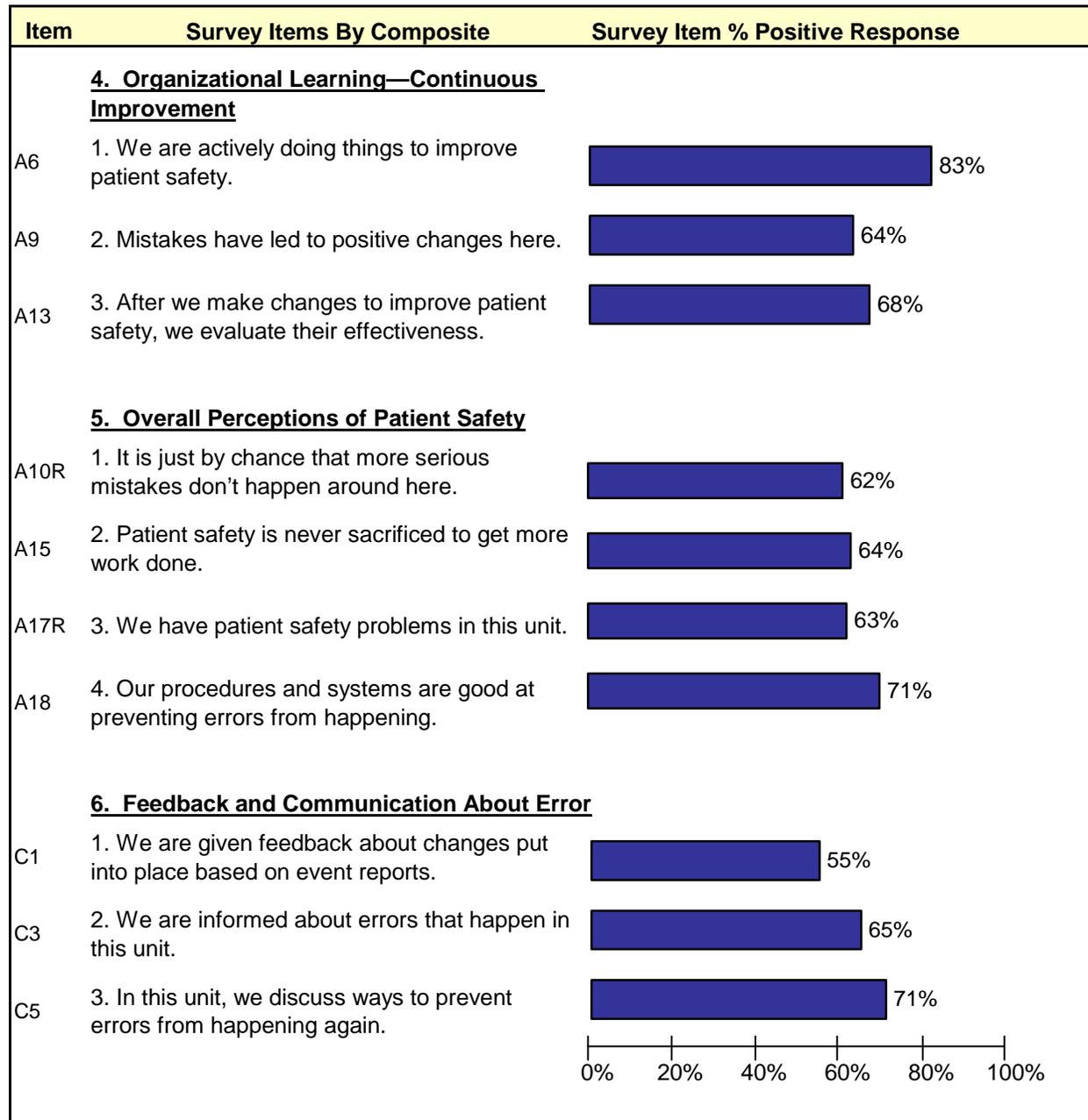


Chart 5-2. Item-Level Average Percent Positive Response—Across All 2010 Database Hospitals (Page 1 of 4)



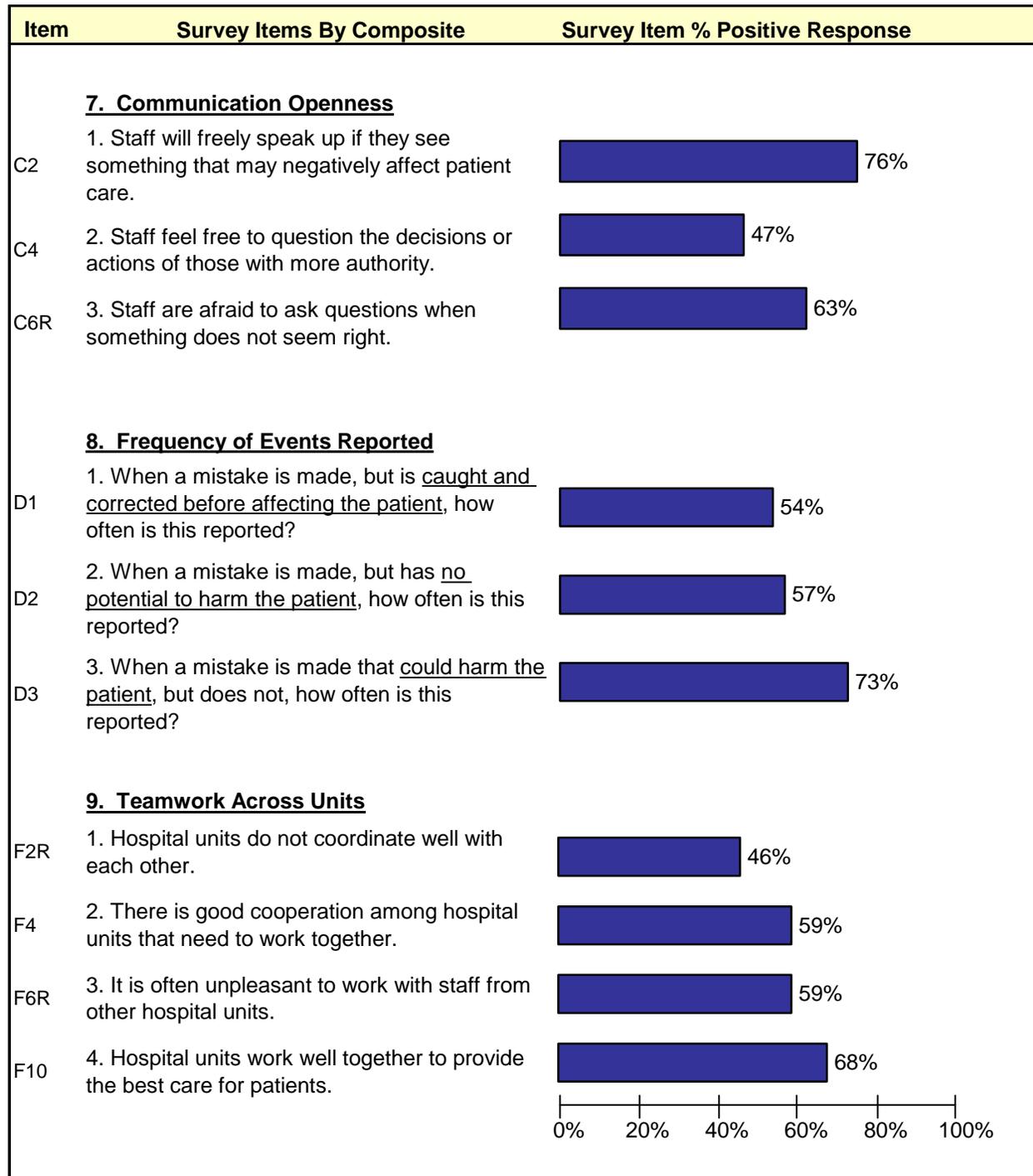
Note: The item’s survey location is shown to the left. An “R” indicates a negatively worded item, where the percent positive response is based on those who responded “Strongly disagree” or “Disagree,” or “Never” or “Rarely” (depending on the response category used for the item).

Chart 5-2. Item-Level Average Percent Positive Response—Across All 2010 Database Hospitals (Page 2 of 4)



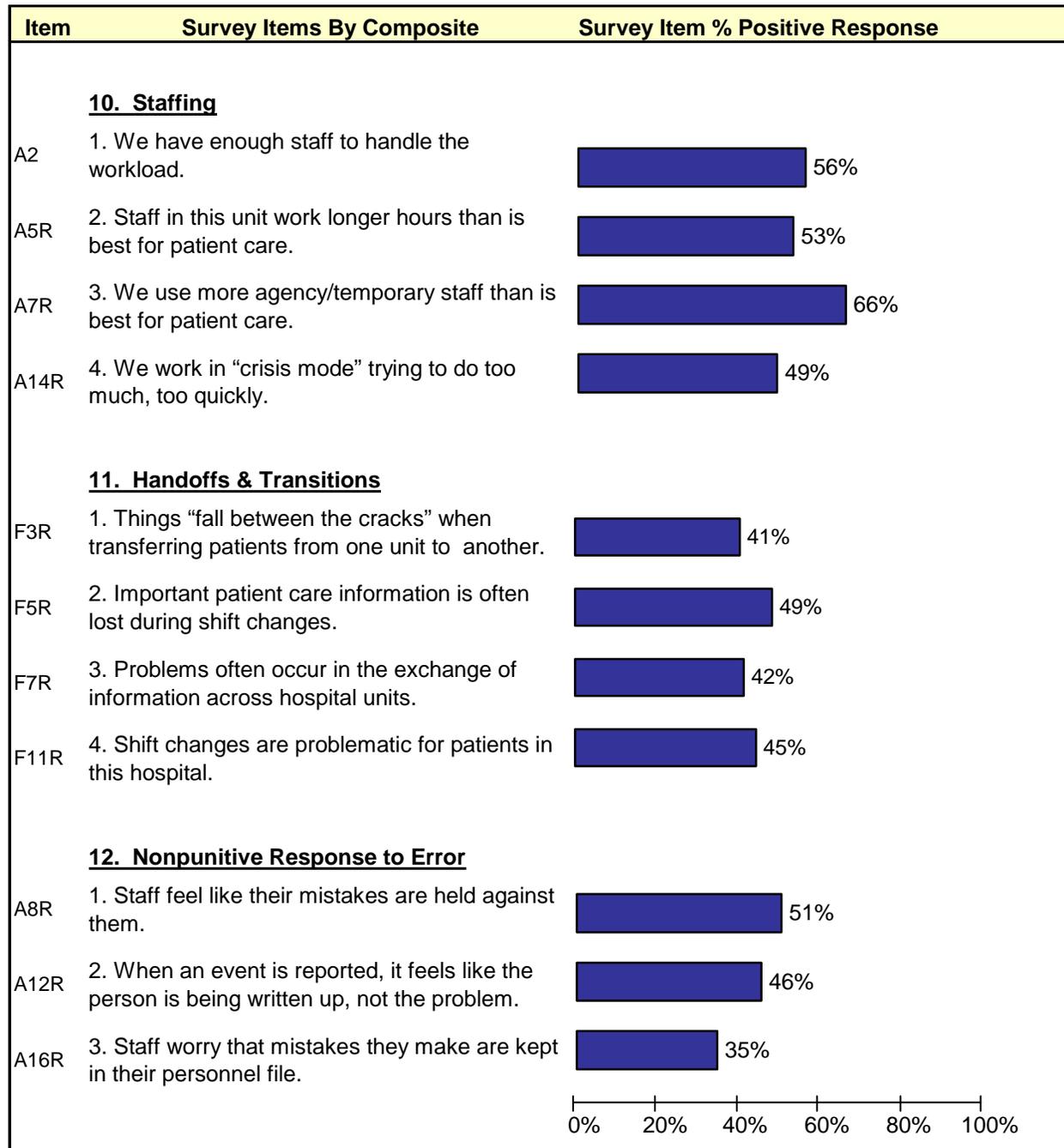
Note: The item's survey location is shown to the left. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

Chart 5-2. Item-Level Average Percent Positive Response—Across All 2010 Database Hospitals (Page 3 of 4)



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).

Chart 5-2. Item-Level Average Percent Positive Response—Across All 2010 Database Hospitals (Page 4 of 4)



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).

Chart 5-3. Average Percentage of Respondents Giving Their Work Area/Unit Each Patient Safety Grade—Across All 2010 Database Hospitals

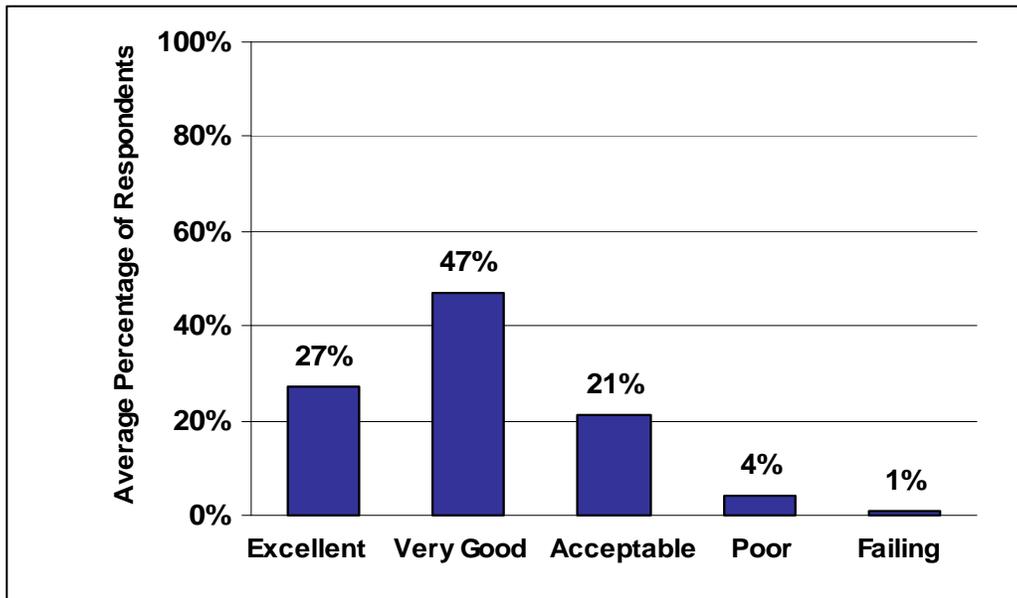
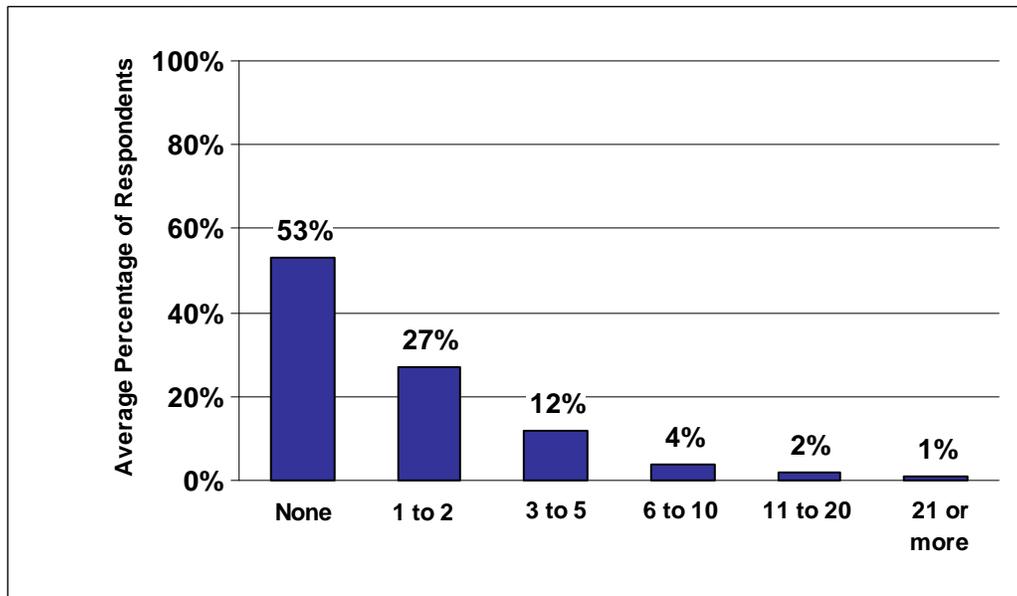


Chart 5-4. Average Percentage of Respondents Reporting Events in the Past 12 Months—Across All 2010 Database Hospitals



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

Chapter 6. Comparing Your Results

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

When comparing your hospital's results with results from the database, keep in mind that the database only provides *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 shown in 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 to identify areas of strength and areas on which to focus efforts to improve patient safety culture.

Highlights

- There was considerable variability in the range of hospital scores (lowest to highest) across the 12 patient safety culture composites. The standard deviation around the average percent positive scores ranged from 5.86 percent to 11.66 percent on the composites and ranged from 5.58 percent to 13.39 percent on the items.
- Patient safety grades also had a wide range of response. In at least one hospital, none of the respondents (0 percent) provided their unit with a patient safety grade of "A-Excellent." At another, 65 percent did.
- The number of events reported showed a wide range of response as well. In one hospital, 82 percent of respondents had not reported a single event over the past 12 months, and at another, only 14 percent had not reported an event.

Description of Comparative Statistics

In addition to the average percent positive scores presented in the charts in Chapter 5, a number of statistics are provided in this report to facilitate comparisons with the database hospitals. A description of each statistic shown in the comparative results tables in this chapter is provided next.

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.ⁱⁱⁱ

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, the average would represent all their scores perfectly and the standard deviation would be 0.
- If scores from all hospitals were very close to the average, the standard deviation would be small and close to 0.
- If scores from many hospitals were very different from the average, 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, 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 samples 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

ⁱⁱⁱ As described in the Notes section, an alternative method would be to report a straight percentage of positive response across all respondents, but this method would give greater weight to respondents from larger hospitals since they account for almost twice as many responses as those from smaller hospitals.

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 to 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 “worse” than the database average. A 5 percentage point difference is likely to be statistically significant for most hospitals given the number of responses per hospital and is also a meaningful difference to consider.

Minimum and Maximum Scores

The minimum and maximum percent positive scores are presented for each composite and item. These scores provide information about the range of percent positive scores obtained by hospitals in the database 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 and the 10th percentile score, or between the 90th percentile score and the maximum).

Percentiles

The 10th, 25th, 50th (or median), 75th, and 90th percentile scores are displayed for the survey composites and items. Percentiles provide information about the distribution of hospital scores. To calculate percentile scores, all hospital percent positive scores were ranked in order from low to high. *A specific percentile score shows the percentage of hospitals that scored at or below a particular score.* For example, the 50th percentile, or median, is the percent positive score where 50 percent of the hospitals scored the same or lower and 50 percent of the hospitals scored higher. When the distribution of hospital scores follows a normal bell-shaped curve, the 50th percentile, or median, will be very similar to the average score. Interpret the percentile scores as shown in Table 6-1.

Table 6-1. Interpretation of Percentile Scores

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

Table 6-3. Composite-Level Comparative Results for the 2010 Database

Patient Safety Culture Composites	Average % Positive	s.d.	Composite % Positive Response						
			Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
1. Teamwork Within Units	80%	5.86%	47%	72%	76%	80%	83%	87%	95%
2. Supervisor/Manager Expectations & Actions Promoting Patient Safety	75%	6.57%	47%	67%	71%	75%	79%	83%	92%
3. Management Support for Patient Safety	72%	9.91%	37%	59%	65%	72%	79%	84%	97%
4. Organizational Learning-Continuous Improvement	72%	7.37%	39%	63%	67%	72%	77%	81%	93%
5. Overall Perceptions of Patient Safety	65%	8.75%	27%	54%	60%	65%	71%	76%	89%
6. Feedback & Communication About Error	63%	8.42%	32%	53%	59%	63%	69%	74%	91%
7. Communication Openness	62%	6.86%	24%	54%	58%	62%	66%	71%	98%
8. Frequency of Events Reported	62%	7.86%	33%	52%	56%	62%	67%	72%	85%
9. Teamwork Across Units	58%	10.75%	14%	45%	50%	57%	65%	72%	91%
10. Staffing	56%	9.72%	25%	44%	50%	55%	62%	69%	82%
11. Handoffs & Transitions	44%	11.66%	19%	31%	36%	43%	51%	61%	84%
12. Nonpunitive Response to Error	44%	8.80%	14%	34%	39%	43%	49%	56%	82%

Table 6-4. Item-Level Comparative Results for the 2010 Database (Page 1 of 4)

Item	Survey Items By Composite	Average		Survey Item % Positive Response						
		Positive %	s.d.	Min %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%	5.95%	46%	79%	82%	86%	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%	5.58%	54%	79%	83%	86%	90%	93%	100%
A4	3. In this unit, people treat each other with respect.	78%	7.24%	39%	69%	74%	79%	83%	87%	100%
A11	4. When one area in this unit gets really busy, others help out.	69%	7.75%	26%	59%	64%	69%	74%	78%	100%
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.	73%	7.85%	46%	63%	68%	73%	78%	83%	95%
B2	2. My supv/mgr seriously considers staff suggestions for improving patient safety.	77%	7.37%	41%	67%	72%	77%	82%	86%	97%
B3R	3. Whenever pressure builds up, my supv/mgr wants us to work faster, even if it means taking shortcuts.	74%	9.92%	5%	64%	68%	74%	80%	85%	100%
B4R	4. My supv/mgr overlooks patient safety problems that happen over and over.	77%	7.02%	52%	68%	72%	77%	81%	86%	100%
3. Management Support for Patient Safety										
F1	1. Hospital mgmt provides a work climate that promotes patient safety.	81%	9.32%	42%	68%	75%	82%	88%	92%	100%
F8	2. The actions of hospital mgmt show that patient safety is a top priority.	74%	10.21%	36%	60%	67%	75%	81%	86%	97%
F9R	3. Hospital mgmt seems interested in patient safety only after an adverse event happens.	61%	11.63%	15%	46%	53%	60%	68%	76%	93%

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 for the 2010 Database (Page 2 of 4)

Item	Survey Items By Composite	Average % Positive	s.d.	Survey Item % Positive Response						
				Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
4. Organizational Learning—Continuous Improvement										
A6	1. We are actively doing things to improve patient safety.	83%	6.77%	57%	74%	79%	84%	88%	91%	100%
A9	2. Mistakes have led to positive changes here.	64%	8.56%	33%	53%	59%	64%	69%	75%	94%
A13	3. After we make changes to improve patient safety, we evaluate their effectiveness.	68%	9.41%	12%	57%	63%	68%	75%	80%	94%
5. Overall Perceptions of Patient Safety										
A10 R	1. It is just by chance that more serious mistakes don't happen around here.	62%	9.99%	18%	49%	55%	61%	68%	74%	93%
A15	2. Patient safety is never sacrificed to get more work done.	64%	9.89%	27%	52%	58%	64%	71%	77%	100%
A17 R	3. We have patient safety problems in this unit.	63%	10.66%	19%	51%	57%	63%	70%	77%	93%
A18	4. Our procedures and systems are good at preventing errors from happening.	71%	8.58%	35%	60%	67%	72%	77%	81%	100%
6. Feedback & Communication About Error										
C1	1. We are given feedback about changes put into place based on event reports.	55%	10.35%	6%	42%	49%	55%	61%	67%	84%
C3	2. We are informed about errors that happen in this unit.	65%	9.32%	31%	53%	59%	64%	70%	77%	97%
C5	3. In this unit, we discuss ways to prevent errors from happening again.	71%	8.64%	33%	60%	66%	71%	77%	82%	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 for the 2010 Database (Page 3 of 4)

Item	Survey Items By Composite	Average % Positive	s.d.	Survey Item % Positive Response								
				Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max		
7.	Communication Openness											
C2	1. Staff will freely speak up if they see something that may negatively affect patient care.	76%	6.86%	37%	67%	72%	75%	80%	84%	100%		
C4	2. Staff feel free to question the decisions or actions of those with more authority.	47%	8.29%	9%	38%	42%	47%	53%	58%	94%		
C6R	3. Staff are afraid to ask questions when something does not seem right.	63%	8.25%	7%	54%	58%	63%	67%	73%	100%		
8.	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?	54%	9.52%	25%	42%	48%	54%	61%	66%	81%		
D2	2. When a mistake is made, but has no potential to harm the patient, how often is this reported?	57%	8.95%	21%	46%	51%	57%	63%	69%	86%		
D3	3. When a mistake is made that could harm the patient, but does not, how often is this reported?	73%	7.15%	45%	65%	69%	73%	78%	82%	100%		
9.	Teamwork Across Units											
F2R	1. Hospital units do not coordinate well with each other.	46%	12.60%	5%	31%	36%	44%	54%	62%	91%		
F4	2. There is good cooperation among hospital units that need to work together.	59%	11.46%	20%	45%	51%	58%	66%	74%	100%		
F6R	3. It is often unpleasant to work with staff from other hospital units.	59%	10.19%	7%	46%	52%	58%	65%	72%	91%		
F10	4. Hospital units work well together to provide the best care for patients.	68%	11.31%	19%	54%	60%	68%	76%	83%	100%		

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

Table 6-4. Item-Level Comparative Results for the 2010 Database (Page 4 of 4)

Item	Survey Items By Composite	Average		Survey Item % Positive Response						
		Positive %	s.d.	Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max
10. Staffing										
A2	1. We have enough staff to handle the workload.	56%	13.39%	14%	39%	47%	55%	65%	74%	97%
A5R	2. Staff in this unit work longer hours than is best for patient care.	53%	9.57%	22%	41%	46%	52%	59%	66%	85%
A7R	3. We use more agency/temporary staff than is best for patient care.	66%	11.40%	0%	52%	60%	66%	73%	79%	100%
A14R	4. We work in "crisis mode" trying to do too much, too quickly.	49%	11.88%	14%	35%	42%	48%	57%	66%	91%
11. Handoffs & Transitions										
F3R	1. Things "fall between the cracks" when transferring patients from one unit to another.	41%	13.34%	11%	25%	31%	38%	49%	60%	88%
F5R	2. Important patient care information is often lost during shift changes.	49%	10.93%	21%	37%	42%	48%	55%	63%	92%
F7R	3. Problems often occur in the exchange of information across hospital units.	42%	12.02%	0%	29%	34%	41%	50%	59%	86%
F11R	4. Shift changes are problematic for patients in this hospital.	45%	12.96%	17%	29%	35%	43%	52%	62%	94%
12. Nonpunitive Response to Error										
A8R	1. Staff feel like their mistakes are held against them.	51%	9.50%	15%	40%	45%	50%	56%	63%	88%
A12R	2. When an event is reported, it feels like the person is being written up, not the problem.	46%	9.30%	12%	36%	40%	45%	51%	58%	88%
A16R	3. Staff worry that mistakes they make are kept in their personnel file.	35%	9.45%	9%	24%	29%	34%	40%	48%	82%

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. Average Distribution of Work Area/Unit Patient Safety Grades—2010 Database Comparative Results

Work Area/Unit Patient Safety Grade	Average %	s.d.	Percentage of Responses						
			Min	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Max
A Excellent	27%	9.58%	0%	16%	21%	26%	33%	39%	65%
B Very Good	47%	7.52%	6%	38%	43%	47%	51%	56%	80%
C Acceptable	21%	7.63%	0%	11%	16%	21%	26%	31%	57%
D Poor	4%	3.55%	0%	0%	2%	3%	5%	8%	45%
E Failing	1%	1.05%	0%	0%	0%	0%	1%	2%	18%

Table 6-6. Average Distribution of Number of Events Reported in the Past 12 Months—2010 Database Comparative Results

Number of Events Reported by Respondents	Average %	s.d.	Percentage of Responses						
			Min	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Max
No events	53%	10.22%	14%	40%	47%	54%	60%	66%	82%
1 to 2 events	27%	6.32%	6%	20%	23%	27%	31%	35%	63%
3 to 5 events	12%	4.94%	0%	7%	9%	12%	15%	18%	42%
6 to 10 events	4%	2.56%	0%	2%	3%	4%	6%	7%	17%
11 to 20 events	2%	1.60%	0%	0%	1%	1%	2%	3%	14%
21 event reports or more	1%	1.20%	0%	0%	0%	1%	1%	3%	8%

Note: Average percent totals add to less than 100 percent due to rounding.

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

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/qual/hospsurvey10/>.

Note: New to the 2010 database, breakouts by respondent characteristics (Appendix B) were only calculated for hospitals that had at least five respondents in the breakout category. If a hospital had fewer than five respondents in a certain category, the hospital is not included in the statistics displayed for that category. (Further explanation is in Notes: Description of Data Cleaning and Calculations.)

Highlights From Appendix A: Overall Results by Hospital Characteristics

Bed Size (Tables A-1, A-3, A-4)

- Smaller hospitals (49 beds or fewer) had the highest average percent positive response on all 12 patient safety culture composites.
- Large hospitals (400-499 beds) scored lowest on the percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (70 percent positive for 400-499 beds compared with 79 percent positive for 25-49 beds).
- There were no noticeable differences in number of events reported based on bed size (all differences were 2 percentage points or less).

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

- Non-teaching hospitals had a higher average percent positive response on *Handoffs and Transitions* than teaching hospitals (46 percent positive compared with 41 percent positive).
- There were no noticeable differences in the patient safety culture composites based on ownership and control (all differences were 3 percentage points or less).
- There were no noticeable differences in patient safety grade or number of events reported based on teaching status or ownership and control (all differences were 3 percentage points or less).

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

- East South Central hospitals had the highest average percent positive response across the composites (66 percent positive); Mid-Atlantic/New England hospitals had the lowest (60 percent positive).
- West South Central hospitals scored highest on the percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (78 percent).
- Pacific hospitals had the highest percentage of respondents who reported one or more events in the past year (53 percent); the lowest percentage of respondents reporting events was in the West South Central region (41 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 (68 percent positive); *Emergency* had the lowest (57 percent positive).
- *Rehabilitation* had the highest percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (84 percent); *Emergency* had the lowest percentage (62 percent).
- *ICU (any type)* had the highest percentage of respondents reporting one or more events in the past year (65 percent); *Anesthesiology* had the lowest percentage of respondents reporting events (40 percent).

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

- Respondents in *Administration/Management* had the highest average percent positive response across the composites (73 percent positive); *Pharmacists* had the lowest (58 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” (85 percent); *Pharmacists* had the lowest percentage (65 percent).
- *Pharmacists* had the highest percentage of respondents reporting one or more events in the past year (72 percent); *Unit Assistants/Clerks/Secretaries* and *Dietitians* had the lowest percentage reporting events (19 percent).

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

- Respondents *with* direct patient interaction were 8 percent more positive on *Handoffs and Transitions* compared with those *without* direct patient interaction (46 percent positive compared with 38 percent positive).
- Respondents *without* direct patient interaction were 6 percent more positive about *Management Support for Patient Safety* than those *with* direct patient interaction (77 percent positive compared with 71 percent positive).
- Respondents *without* direct patient interaction had the highest percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (79 percent) compared with those *with* direct patient interaction (74 percent).
- More respondents *with* direct patient interaction reported one or more events in the past year (52 percent) than respondents *without* direct patient interaction (31 percent).

Chapter 7. Trending: Comparing Results Over Time

Many hospitals that have administered the hospital survey have indicated that they intend to readminister the survey on a regular basis to track changes in patient safety culture over time. Some of the hospitals that previously administered the survey and submitted data to the database then readministered the survey and submitted data again. The overall results presented earlier in this report reflect only the most recent survey data from all 885 participating hospitals. But we have data from two or more administrations of the survey for 321 hospitals, allowing us to examine trends over time for these hospitals. This chapter presents trending results from these 321 hospitals. Changes of 5 percentage points or more are highlighted.

Highlights

- For the 321 hospitals with trending data, the average time between previous and most recent survey administrations was 19 months (range: 6 months to 46 months).
- The average change in percent positive scores between administrations on the patient safety culture composites was a slight increase of 2 percentage points (ranging from 1 to 3 percentage point change).
- Thirty-eight percent of trending hospitals increased by 5 percentage points or more on *Management Support for Patient Safety and Staffing* (see Chart 7-1).
- Twenty-three percent of hospitals decreased by 5 percentage points or more on *Handoffs and Transitions* (see Chart 7-1).
- There were no noticeable differences over time in the percentage of respondents who gave their work area/unit a patient safety grade of “A-Excellent” and “B-Very Good” (average percentage increased by 4 percentage point).
- There were no noticeable differences over time in the number of events reported by respondents in the past 12 months.

When reviewing the results in this chapter, keep in mind that the trending results from these 321 hospitals represent approximately one-third of the total number of database hospitals. Therefore, the trending data should be viewed as preliminary. In addition, 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. It can be difficult to interpret changes in scores over time for a number of reasons. These include low survey response rates for the previous or most recent administration, changes in the number of staff asked to complete the survey, and changes in the types of staff asked to complete the survey.

Table 7-1 displays summary statistics from the previous and most recent survey administrations for the 321 trending hospitals. As shown in the table, the average number of completed surveys increased in the most recent survey administration (from an average of 357 to 399 respondents). The average response rate also increased (from 49 percent to 56 percent).

Table 7-1. Summary Statistics for Most Recent and Previous Data Submissions From the 321 Trending Hospitals

Summary Statistic	Most Recent Survey Administration	Previous Survey Administration
Total number of respondents	127,953	114,497
Number of completed surveys per hospital	Average: 399 Range: 14–3,710	Average: 357 Range: 11–3,908
Hospital response rate	Average: 56% Range: 6–100%	Average: 49% Range: 4–100%
Number of hospitals (out of 321) that administered the survey to all staff, or a sample of all staff, from all departments	252 (79%)	261 (81%)

Additional characteristics of the 321 trending hospitals follow:

- Most of the 321 trending hospitals (71 percent) administered the survey to the same types of staff in their previous and most recent administrations.
- The average change in response rate from the previous administration was 7 percent (range: one hospital had an 85 percent decrease in response rate and one had an 85 percent increase).
- The average time between the previous and most recent survey administrations was 19 months (range: 6 months to 46 months).

Note: Descriptive statistics of the 321 trending hospitals by bed size, teaching status, and ownership and control are provided in Appendix C (Tables C-1, C-2, and C-3).

Description of Trending Statistics

Before presenting results on the changes in survey scores over time, we provide an explanation of the trending statistics that are presented. Table 7-2a shows examples of the statistics shown 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 321 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 7-2a. Example of Trending Statistics

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

Table 7-2b shows additional trending statistics that are provided. The maximum increase and maximum decrease show the scores for the hospitals with the largest average percent positive score increase and the hospitals with the largest decrease. The average increase and decrease of percent positive scores across the 321 trending hospitals is also shown. The average increase was calculated by only including hospitals that had an 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 only including 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 7-2b. 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 7-3 presents trending results showing average percent positive scores on each of the 12 patient safety culture composites from the 321 trending hospitals. The table shows percent positive scores for the hospitals' most recent and previous data administration/submission. The table also shows the average change over time, the hospital scores with the maximum increase and maximum decrease, and the average increase and decrease over time across the 321 hospitals.

Table 7-3 also shows a slight overall increase in the average change in percent positive scores over time on the patient safety culture composites (average 2 percentage points, ranging from 1 to 3 percentage points). For hospitals with increases in scores over time, average increases ranged from 5 to 7 percentage points. For hospitals with decreases in scores, average decreases ranged from 4 to 6 percentage points.

The item-level trending results in Table 7-4 show that the average change in item-level percent positive scores over time on the patient safety culture items ranged from an increase of 1 percentage point to 4 percentage points. For hospitals with increases in item scores over time, average increases ranged from 6 to 10 percentage points. For hospitals with decreases in item scores, average decreases ranged from 4 to 8 percentage points.

Trending results from the item that asks respondents to give their hospital work area/unit an overall grade on patient safety are shown in Table 7-5. The average percentage of respondents giving their work area/unit a patient safety grade of “A-Excellent” and “B-Very Good” increased over time by 4 percentage points.

Trending results from the item that asked respondents to indicate the number of events they had reported over the past 12 months are shown in Table 7-6. The average percentage of respondents reporting one or more events decreased slightly over time by 1 percentage point.

Table 7-3. Trending: Composite-Level Results

Patient Safety Culture Composites	Composite Average % Positive Response					
	Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase / Average Decrease
1. Teamwork Within Units	80%	78%	2%	64%	-23%	6% / -4%
2. Supervisor/Manager Expectations & Actions Promoting Patient Safety	75%	74%	1%	39%	-18%	5% / -5%
3. Management Support for Patient Safety	72%	69%	3%	52%	-20%	7% / -6%
4. Organizational Learning-Continuous Improvement	72%	70%	2%	61%	-24%	7% / -5%
5. Overall Perceptions of Patient Safety	65%	62%	3%	44%	-16%	7% / -4%
6. Feedback & Communication About Error	64%	61%	3%	48%	-31%	7% / -5%
7. Communication Openness	62%	61%	1%	38%	-20%	6% / -5%
8. Frequency of Events Reported	63%	60%	3%	37%	-19%	6% / -5%
9. Teamwork Across Units	58%	56%	2%	36%	-22%	7% / -6%
10. Staffing	56%	53%	3%	40%	-21%	7% / -5%
11. Handoffs & Transitions	45%	44%	1%	28%	-29%	6% / -6%
12. Nonpunitive Response to Error	45%	43%	2%	24%	-22%	5% / -5%

Note: Based on data from 321 hospitals that repeated survey administration and data submission; the number of respondents was 127,953 in the most recent database and 114,497 in the previous database.

Table 7-4. Trending: Item-Level Results (Page 1 of 4)

Item	Survey Items By Composite	Item Average % Positive Response						
		Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase	Average Decrease
1. Teamwork Within Units								
A1	1. People support one another in this unit.	85%	83%	2%	75%	-29%	7%	-4%
A3	2. When a lot of work needs to be done quickly, we work together as a team to get the work done.	86%	84%	2%	72%	-28%	6%	-4%
A4	3. In this unit, people treat each other with respect.	78%	76%	2%	60%	-36%	6%	-5%
A11	4. When one area in this unit gets really busy, others help out.	69%	68%	1%	48%	-19%	7%	-6%
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.	73%	71%	2%	55%	-29%	8%	-6%
B2	2. My supv/mgr seriously considers staff suggestions for improving patient safety.	77%	75%	2%	62%	-27%	7%	-5%
B3R	3. Whenever pressure builds up, my supv/mgr wants us to work faster, even if it means taking shortcuts.	74%	73%	1%	51%	-23%	6%	-5%
B4R	4. My supv/mgr overlooks patient safety problems that happen over and over.	77%	75%	2%	60%	-19%	6%	-5%
3. Management Support for Patient Safety								
F1	1. Hospital mgmt provides a work climate that promotes patient safety.	81%	78%	3%	66%	-27%	8%	-6%
F8	2. The actions of hospital mgmt show that patient safety is a top priority.	74%	71%	3%	65%	-22%	8%	-6%
F9R	3. Hospital mgmt seems interested in patient safety only after an adverse event happens.	61%	58%	3%	35%	-25%	8%	-6%

Note: Based on data from 321 hospitals that repeated survey administration and data submission. The overall number of respondents was 127,953 in the most recent database and 114,497 in the previous database, 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 7-4. Trending: Item-Level Results (Page 2 of 4)

Item	Survey Items By Composite	Item Average % Positive Response						
		Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase	Average Decrease
4. Organizational Learning—Continuous Improvement								
A6	1. We are actively doing things to improve patient safety.	83%	81%	2%	81%	-27%	7%	-5%
A9	2. Mistakes have led to positive changes here.	64%	61%	3%	51%	-29%	8%	-6%
A13	3. After we make changes to improve patient safety, we evaluate their effectiveness.	69%	68%	1%	60%	-25%	8%	-6%
5. Overall Perceptions of Patient Safety								
A10R	1. It is just by chance that more serious mistakes don't happen around here.	61%	58%	3%	35%	-29%	8%	-6%
A15	2. Patient safety is never sacrificed to get more work done.	65%	62%	3%	42%	-21%	7%	-5%
A17R	3. We have patient safety problems in this unit.	64%	60%	4%	41%	-21%	8%	-6%
A18	4. Our procedures and systems are good at preventing errors from happening.	72%	69%	3%	63%	-21%	7%	-6%
6. Feedback and Communication About Error								
C1	1. We are given feedback about changes put into place based on event reports.	55%	53%	2%	47%	-48%	8%	-7%
C3	2. We are informed about errors that happen in this unit.	65%	63%	2%	47%	-31%	7%	-6%
C5	3. In this unit, we discuss ways to prevent errors from happening again.	71%	69%	2%	53%	-35%	8%	-6%

Note: Based on data from 321 hospitals that repeated survey administration and data submission. The overall number of respondents was 127,953 in the most recent database and 114,497 in the previous database, 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 7-4. Trending: Item-Level Results (Page 3 of 4)

Item	Survey Items By Composite	Item Average % Positive Response						
		Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase	Average Decrease
7.	Communication Openness							
C2	1. Staff will freely speak up if they see something that may negatively affect patient care.	75%	74%	1%	60%	-27%	6%	-5%
C4	2. Staff feel free to question the decisions or actions of those with more authority.	48%	46%	2%	25%	-28%	7%	-6%
C6R	3. Staff are afraid to ask questions when something does not seem right.	62%	61%	1%	39%	-45%	7%	-7%
8.	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?	56%	52%	4%	37%	-26%	8%	-6%
D2	2. When a mistake is made, but has no potential to harm the patient, how often is this reported?	59%	55%	4%	36%	-24%	7%	-6%
D3	3. When a mistake is made that <u>could harm the patient</u> , but does not, how often is this reported?	74%	72%	2%	43%	-22%	7%	-5%
9.	Teamwork Across Units							
F2R	1. Hospital units do not coordinate well with each other.	46%	44%	2%	41%	-46%	8%	-7%
F4	2. There is good cooperation among hospital units that need to work together.	59%	57%	2%	61%	-26%	8%	-6%
F6R	3. It is often unpleasant to work with staff from other hospital units.	59%	57%	2%	33%	-36%	7%	-6%
F10	4. Hospital units work well together to provide the best care for patients.	69%	66%	3%	55%	-21%	8%	-6%

Note: Based on data from 321 hospitals that repeated survey administration and data submission. The overall number of respondents was 127,953 in the most recent database and 114,497 in the previous database, 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 7-4. Trending: Item-Level Results (Page 4 of 4)

Item	Survey Items By Composite	Item Average % Positive Response						
		Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase	Average Decrease
10. Staffing								
A2	1. We have enough staff to handle the workload.	56%	52%	4%	57%	-27%	10%	-7%
A5R	2. Staff in this unit work longer hours than is best for patient care.	53%	50%	3%	53%	-37%	7%	-6%
A7R	3. We use more agency/temporary staff than is best for patient care.	66%	63%	3%	64%	-37%	10%	-7%
A14R	4. We work in "crisis mode" trying to do too much, too quickly.	50%	47%	3%	59%	-42%	7%	-6%
11. Handoffs & Transitions								
F3R	1. Things "fall between the cracks" when transferring patients from one unit to another.	41%	41%	0%	35%	-38%	6%	-6%
F5R	2. Important patient care information is often lost during shift changes.	49%	49%	0%	30%	-32%	7%	-7%
F7R	3. Problems often occur in the exchange of information across hospital units.	43%	42%	1%	32%	-35%	7%	-6%
F11R	4. Shift changes are problematic for patients in this hospital.	45%	44%	1%	33%	-31%	7%	-8%
12. Nonpunitive Response to Error								
A8R	1. Staff feel like their mistakes are held against them.	51%	50%	1%	27%	-29%	6%	-6%
A12R	2. When an event is reported, it feels like the person is being written up, not the problem.	47%	44%	3%	32%	-24%	7%	-6%
A16R	3. Staff worry that mistakes they make are kept in their personnel file.	36%	34%	2%	27%	-28%	6%	-6%

Note: Based on data from 321 hospitals that repeated survey administration and data submission. The overall number of respondents was 127,953 in the most recent database and 114,497 in the previous database, 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 7-5. Trending: Average Distribution of Work Area/Unit Patient Safety Grades

Work Area/Unit Patient Safety Grade	Average Percentage of Respondents Within Hospitals					
	Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase / Average Decrease
A Excellent	27%	24%	3%	25%	-27%	6% / -6%
B Very Good	47%	46%	1%	74%	-42%	6% / -6%
C Acceptable	22%	24%	-2%	15%	-30%	5% / -7%
D Poor	4%	5%	-1%	44%	-51%	3% / -3%
E Failing	1%	1%	0%	18%	-18%	1% / -2%

Note: Based on data from 321 hospitals that repeated survey administration and data submission. The overall number of respondents was 127,953 in the most recent database and 114,497 in the previous database. Average percentage totals in the table may not add to 100 percent due to rounding.

Table 7-6. Trending: Average Distribution of Number of Events Reported in the Past 12 Months

Number of Events Reported by Respondents	Average Percentage of Respondents Within Hospitals					
	Most Recent	Previous	Change	Maximum Increase	Maximum Decrease	Average Increase / Average Decrease
No events	54%	53%	1%	30%	-45%	6% / -6%
1 to 2 events	27%	27%	0%	28%	-25%	5% / -5%
3 to 5 events	12%	12%	0%	32%	-17%	3% / -4%
6 to 10 events	4%	4%	0%	10%	-13%	2% / -2%
11 to 20 events	2%	2%	0%	12%	-13%	1% / -2%
21 event reports or more	1%	1%	0%	5%	-6%	1% / -1%

Note: Based on data from 321 hospitals that repeated survey administration and data submission. The overall number of respondents was 127,953 in the most recent database and 114,497 in the previous database. Average percentage totals in the table may not add to 100 percent due to rounding.

Bar Charts of Trending Results

The bar charts in Chart 7-1 show the percentage of hospitals that increased, decreased, or did not change by 5 percentage points or more for each of the 12 patient safety culture composites. These charts show that:

- Most hospitals changed less than 5 percentage points on the 12 composites (ranging from 46 percent to 63 percent of hospitals on each of the composites).
- The composites with the largest percentage of hospitals that increased 5 percentage points or more were *Management Support for Patient Safety* and *Staffing* (38 percent of trending hospitals increased by at least 5 percentage points).
- The composite with the largest percentage of hospitals that decreased 5 percentage points or more was *Handoffs and Transitions* (23 percent of trending hospitals decreased by at least 5 percentage points).

Chart 7-2 displays trending results for the percentage of respondents providing patient safety grades of “A-Excellent” or “B-Very Good” and shows that:

- 41 percent of hospitals *increased* by 5 percentage points or more;
- 40 percent of hospitals changed less than 5 percentage points; and
- 19 percent of hospitals *decreased* by 5 percentage points or more.

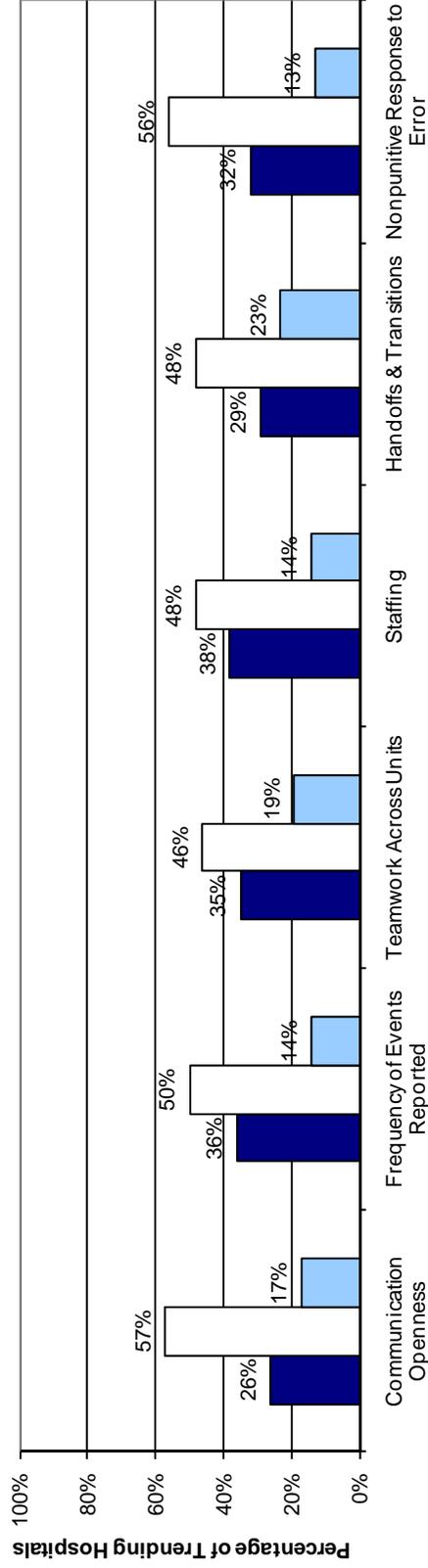
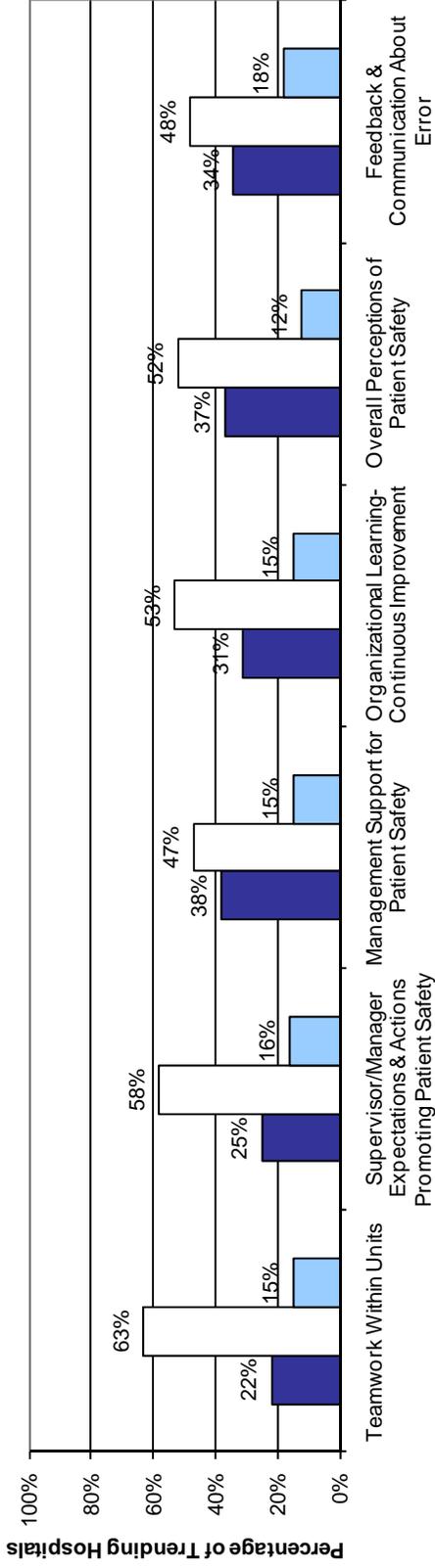
Chart 7-3 displays trending results for the percentage of respondents reporting one or more events and shows that:

- 23 percent of hospitals *increased* by 5 percentage points or more;
- 48 percent of hospitals changed less than 5 percentage points; and
- 29 percent of hospitals *decreased* by 5 percentage points or more.

Chart 7-4 displays the number of composites on which hospitals increased, decreased, or did not change:

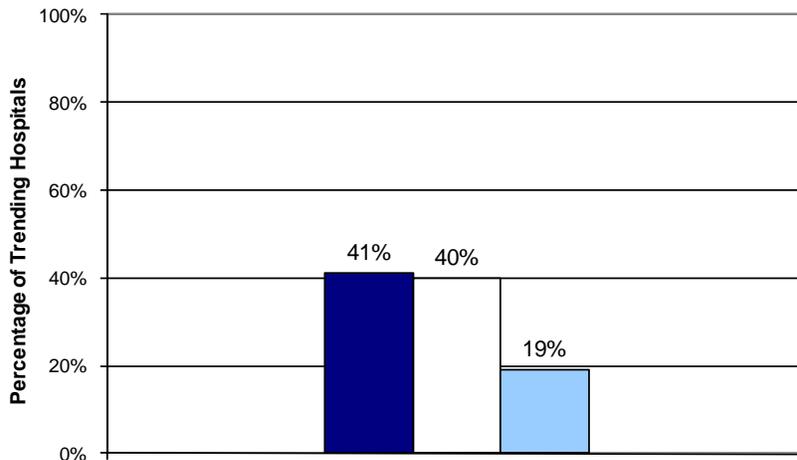
- Most hospitals (77 percent) *increased* by 5 percentage points or more on at least one composite.
- About half of the hospitals (51%) *decreased* by 5 percentage points or more on at least one composite.
- About half of the hospitals (48%) changed less than 5 percentage points on 7 or more composites.

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



Note: Based on data from 321 hospitals that repeated survey administration and data submission. Percentages may not add to 100 percent due to rounding.

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



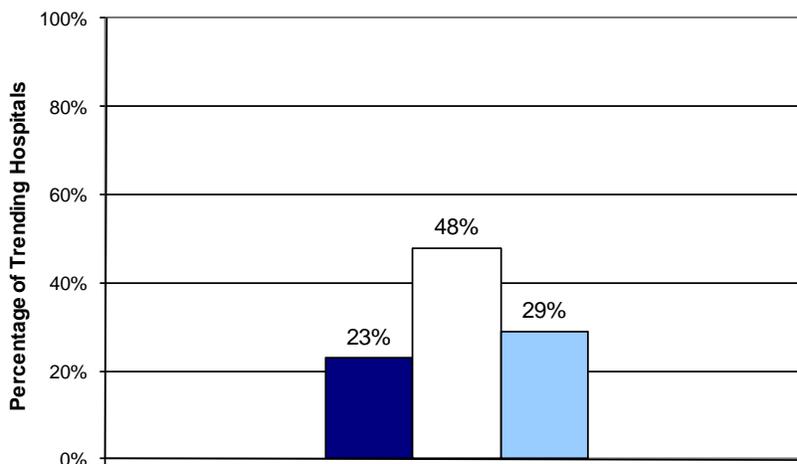
Increased
 (by 5 percentage points or more)

Did Not Change
 (increased or decreased by less than 5 percentage points)

Decreased
 (by 5 percentage points or more)

Note: Based on data from 321 hospitals that repeated survey administration and data submission. For each hospital, change over time was calculated for the percentage of respondents reporting a grade of “Excellent” or “Very Good”.

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



Increased
 (by 5 percentage points or more)

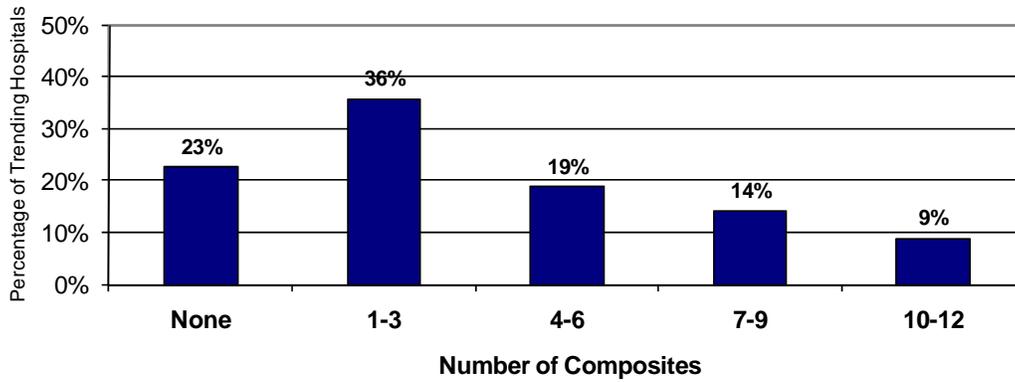
Did Not Change
 (increased or decreased by less than 5 percentage points)

Decreased
 (by 5 percentage points or more)

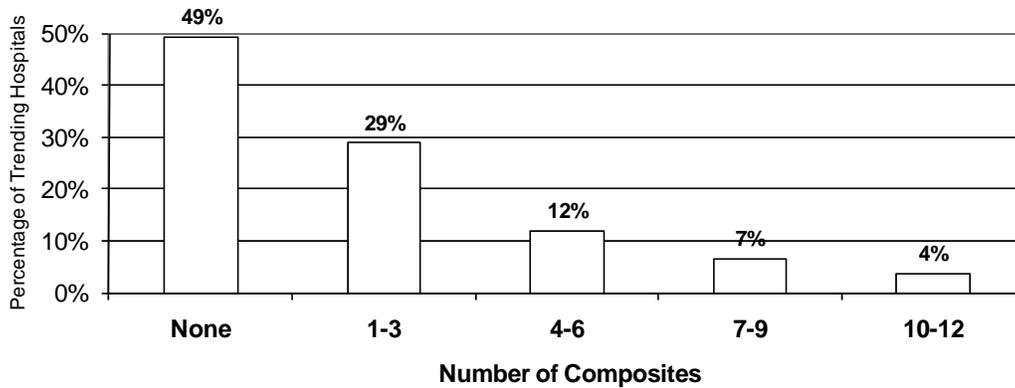
Note: Based on data from 321 hospitals that repeated survey administration and data submission. For each hospital, change over time was calculated for the percentage of respondents who reported one or more events over the past 12 months.

Chart 7-4. Trending: Distribution of Hospitals by Number of Composites That Increased, Decreased, or Did Not Change

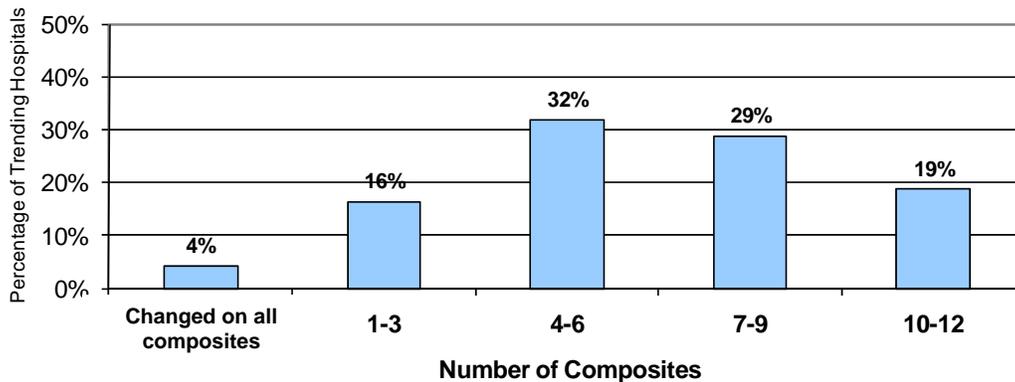
Distribution of Hospitals by Number of Composites That Increased



Distribution of Hospitals by Number of Composites That Decreased



Distribution of Hospitals by Number of Composites That Did Not Change



Note: Based on data from 305 trending hospitals that measured all 12 survey dimensions. Sixteen hospitals that did not measure all 12 survey dimensions are not included. Percentages may not add to 100% due to rounding.

Additional Trending Analyses

The following sections present quantitative and qualitative data on changes in patient safety culture over time. The quantitative data include questionnaire data on actions taken by the trending hospitals to improve their patient safety culture. The qualitative data consist of findings from nine interviews conducted with staff at trending hospitals and suggest explanations for increases and decreases in hospitals' hospital survey scores.

Actions Taken by the Trending Hospitals

About 91 percent (292) of the 321 trending hospitals (hospitals that administered the patient safety culture survey and submitted data more than once) provided basic information about the types of patient safety actions they had taken in between their previous and most recent survey administrations.

Table 7-7 shows the percentages of trending hospitals that shared their previous survey results with various groups of people. Most of the trending hospitals (94 percent) that provided such information reported that they had shared their previous survey results with hospital administrators. In addition, 83 percent reported they had shared their previous survey results with department managers, and 72 percent reported they had shared their previous survey results with hospital staff. Fewer hospitals reported they had shared the results with physicians (53 percent) or their Board of Directors (52 percent). Nine hospitals (3 percent) reported that they had not shared their previous survey results yet.

Table 7-8 shows the percentages of trending hospitals that reported they had implemented various types of actions. The action most frequently taken was implementing the Situation-Background-Assessment-Recommendation (SBAR) technique (65 percent).

Most of the trending hospitals (92 percent) implemented more than one action.

Table 7-7. Groups of People With Whom Survey Results Were Shared by the Trending Hospitals

Group With Whom Survey Results Were Shared	Trending Hospitals*	
	Number	Percent
Hospital administrators	274	94%
Department managers	242	83%
Hospital staff	210	72%
Physicians	155	53%
Board of directors	152	52%
Have not shared results yet	9	3%

*Only 292 of the 321 trending hospitals provided information about groups of people with whom they shared results.

Table 7-8. Types of Patient Safety Actions Taken by the Trending Hospitals

Type of Action Taken	Trending Hospitals*	
	Number	Percent
Implemented SBAR Communication (Situation-Background-Assessment-Recommendation)	190	65%
Made changes to policies/procedures	180	62%
Improved compliance with Joint Commission National Patient Safety Goals	171	59%
Conducted chart audits	166	57%
Improved error reporting system	158	54%
Improved fall prevention program	156	53%
Implemented patient safety walkarounds	136	47%
Purchased new hospital equipment	131	45%
Conducted root cause analysis	127	43%
Held education/patient safety fair for staff	123	42%
Conducted training	120	41%
Implemented "Ticket to Ride" communication tool to reduce handoff risk	82	28%
Formed a committee	71	24%
Implemented patient safety briefings	70	24%
Took other action	57	20%
Conducted followup interviews/focus groups	49	17%
Implemented patient safety bulletin board/suggestion box/hotline	35	12%
Implemented TeamSTEPPS	32	11%
Developed action plans but have not implemented them yet	31	11%

*Only 292 of the 321 trending hospitals provided information about patient safety actions they had taken.

Interview Findings

To gain a better understanding of changes in patient safety culture and patient care practices over time, hour-long telephone interviews were conducted with staff from nine hospitals that administered the hospital survey more than once. The interviews were conducted in fall 2008. Six of the hospitals experienced notable increases in their scores, and three hospitals experienced notable decreases. Most interview participants were quality/risk managers, and one was a chief executive officer. The nine hospitals varied with respect to system affiliation, bed size, teaching status, ownership, and geographic region.

Explanations for notable increases in hospital survey scores. During the interviews, participants were asked why their hospitals' survey scores increased. Some participants mentioned specific actions, including:

- Implementing the SBAR communication tool for unit-to-unit transfers,
- Hiring a consultant group to work with department directors on targeted patient safety problems,
- Addressing staffing requirements such as filling nursing vacancies and improving patient/staff ratios, and
- Using and displaying scorecards to monitor progress on hospital initiatives.

Generally, various themes emerged from their responses. These themes are shared here, along with participants' comments about actions their hospitals took to improve patient safety culture and safe patient care practices. Four main themes emerged from those hospitals with notable increases in their hospital survey scores.

Theme 1: Hospitals improved their communication between management and staff on patient safety.

Sample Actions and Illustrative Quotes

- Conducted walkarounds to learn about staff concerns about patient safety
- Focused on patient safety during staff meetings
 - One participant attributed her hospital's improvement to *“the engagement of our department heads and nursing coordinators in making sure patient safety culture is on everyone's mind.”*
- Started conducting monthly staff meetings
- Implemented Open Book Management and participated in biweekly “huddles” to review the hospital budget, financial statements, and patient safety issues and concerns
 - *“Open Book Management has had the biggest impact of all their initiatives...affected everything we do...employees are much more aware.”*

Theme 2: Hospitals focused on improving error reporting systems, responding appropriately to reports, and applying nonpunitive “Just Culture” principles.

Sample Actions and Illustrative Quotes

- Educated hospital leaders on making error reporting anonymous, easy, and convenient
 - *“When we went from a paper system to an electronic system, our reporting increased about 40 percent – part of it was education, because we had to do a lot of education as we rolled out the electronic system – part of it...is because it's very easy.”*
- Set up a hotline for reporting errors and developed anonymous reporting forms for medical errors
 - *“We got management to buy into that it was o.k. for a staff person to not provide their name, so they wouldn't be afraid to report.”*
- Trained staff to use the new reporting systems
- Provided training on “Just Culture” and taught managers to use an algorithm when examining patient safety error incidents
 - *“The algorithm helps management more than anything else.”*

Theme 3: Hospitals engaged staff in developing solutions to patient safety problems.

Sample Actions and Illustrative Quotes

- Directly involved staff in designing solutions to handoff problems
- Started an employee engagement committee that includes senior leaders

- Instituted nursing peer review to promote open communication
 - *“I personally think it is a combination of the employee engagement committee where employees have a voice. I think it’s the peer review...having peers to go to, to voice your concerns.”*
- Assigned staff to a scheduling team to accommodate staff preferences
- Allocated resources for safety needs identified by staff—for example, buying safer beds

Theme 4: Hospitals developed, implemented, and monitored action plans, in some cases focusing on specific survey items.

Sample Action

- Charged department managers with developing and implementing an annual action plan and held them accountable

Explanations for notable decreases in hospital survey scores. Interview participants provided the following explanations as possible reasons for decreases in their scores in their most recent administration of the survey. Explanations for decreases in scores tended to be quite specific and unique to the hospital being probed:

- Experienced issues among staff with specific managers and management styles, especially regarding managers’ response to incident reports and lack of followup on staff feedback
 - *“They felt like the managers really didn’t act on them [incident reports] or hear them or do anything about them...”*
- Had contracting issues and high turnover for managers and frontline staff—staff have had to get used to new unit managers; some new managers not familiar with hospital policies on “Just Culture”
- Needed to temporarily shut down hospital services because contract and financial constraints led to a large shortage of professional providers
 - *“The staffing issue came up as part of contract problems. We’re in a fairly isolated area, and we have a vacancy rate in the professional provider staff of about 40%. During this timeframe, we also changed financial management systems. We’re not able to hire contractors with the speed that we had in the past. We ended up running very short and ended up closing beds and shutting services down for about an 18-month period.”*
- Drilled down in the survey data and observed that scores were lower for larger than smaller units—attributed the lower scores to less frequent and personal communications, weaker sense of accountability to coworkers
- Were in the middle of union negotiations and staff were feeling hostile
- Struggled with organizational learning and how much information could be fed back to staff given confidentiality requirements and concerns
 - *“As we run into significant adverse events for patients, how much do we feed the information back to frontline staff? Where’s that line of keeping it confidential yet sharing our learnings with staff?”*

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

Part III of the report contains Appendixes C and D that show trends over time for the 321 hospitals that administered the survey and submitted data more than once. Average percent positive scores from the most recent and previous administrations are shown on the survey composites and items, broken down by the following hospital and respondent characteristics:

Appendix C: Trending Results by Hospital Characteristics

- Bed size
- Teaching status
- Ownership and control

Appendix D: Trending Results by Respondent Characteristics

- Work area/unit
- Staff position
- Interaction with patients

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/qual/hospsurvey10/>.

Note 1: Because there were fewer than 20 trending hospitals in several hospital region breakout categories, trending results are not shown by hospital region, to ensure hospital confidentiality.

Note 2: New to the 2010 database, breakouts by respondent characteristics (Appendix D) were only calculated for hospitals that had at least five respondents in the breakout category. If a hospital had fewer than five respondents in a certain category, the hospital is not included in the statistics displayed for that category. (Further explanation is in Notes: Description of Data Cleaning and Calculations.)

Highlights From Appendix C: Trending Results by Hospital Characteristics

Bed Size (Tables C-4, C-6, C-7)

- Large hospitals (400-499 beds) had the greatest increases in percent positive response over time on 7 of the 12 composites (average increase of 5 percentage points across these 7 composites).
- Small hospitals (6-24 beds) had the greatest increase in percentage of respondents who gave their work area/unit a patient safety grade of “Excellent” or “Very Good” (a 7 percentage point increase, from 73 percent in the previous administration to 80 percent in the most recent administration).

Teaching Status and Ownership and Control (Tables C-8, C-10, C-11)

- There were no noticeable changes over time on the patient safety culture composites by teaching status or ownership and control (all changes were 4 percentage points or less).

Highlights From Appendix D: Trending Results by Respondent Characteristics

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

- *Obstetrics* had the greatest increase in percent positive response on 5 of the 12 patient safety culture composites (average increase of 6 percentage points across these 5 composites).
- *ICU, Pediatrics, and Pharmacy* shared the greatest increase over time in average percentage of respondents giving their work area/unit a patient safety grade of “Excellent” or “Very Good” (each increased by 6 percentage points).
- There were no noticeable increases in the average percentage of respondents reporting one or more events in the past year. The largest decrease was in *Anesthesiology* (a 10 percentage point decrease).

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

- *Administration/Management* had the greatest increase in positive response over time on 7 of the 12 patient safety culture composites (average increase across the 7 composites was 5 percentage points).
- *Therapists* had the largest increase over time in average percentage of respondents giving their work area/unit a patient safety grade of “Excellent” or “Very Good” (5 percentage point increase).

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

- There were no noticeable changes over time in the patient safety culture composites by level of interaction with patients (all changes were 4 percentage points or less).

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 & Waclawski, 1998).

Highlights

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

Seven Steps of Action Planning

Administering the hospital survey can be considered an “intervention,” a means of educating hospital staff and building awareness about issues of concern related to patient safety. But it should not be the only goal of conducting the survey. Administering the survey is not enough. Keep in mind that the delivery of survey results is not the *end point* in the survey process; it is actually just the *beginning*. Often, the perceived failure of surveys as a means for creating lasting change is actually due to faulty or nonexistent action planning or survey followup. Seven steps of action planning are provided to help your hospital go beyond simply conducting a survey to realizing patient safety culture change.

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 to three areas for improvement at the hospital level. While your hospital may want to improve in almost all areas, it is better 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/or at the department or unit level. However, to ensure respondent anonymity and confidentiality, it is important to only report data if there are enough respondents in a particular category or group. One common rule of thumb recommends not reporting data if there are fewer than 10 respondents in a category. For example, if there are only four respondents from a department, 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 and department- 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

Identify funding or other resources needed to implement action plans. It is also important to identify quantitative and qualitative measures that can be used to evaluate progress and the impact of changes implemented.

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 that 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 (IHI, 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, et al., 1996) is a pilot-study approach to change that involves four steps:

1. Develop a small-scale plan to test a proposed change (Plan),
2. Carry out the plan (Do),
3. Observe and learn from the consequences (Study), and
4. Determine 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.

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 reveal 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 dropping the effort completely, try to determine why it failed and whether adjustments might be worth trying.

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 whether they result from surveying different staff each time.

Step # 7: Share What Works

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

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Notes: Description of Data Cleaning and Calculations

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

Data Cleaning

Each participating hospital was asked to submit cleaned, individual-level survey data. However, as an additional check, 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 their data frequencies for the hospitals to verify that the data set received was correct.

NEW: In order to keep the database current, data more than 3½ years old are removed from the database. Thus, 65 hospitals that administered the survey prior to January 1, 2006, were dropped from the database.

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 or those who were not employed at the hospital during data collection.

As a data cleaning step, we examined whether any individual survey records submitted to the database were missing responses on all of the nondemographic survey items (indicating the respondent did not answer any of the main survey questions). Records where all nondemographic survey items were left blank by the respondent were found (even though these blank records should not have been submitted to the database). We therefore removed these blank records from the larger data set and adjusted any affected hospital's response rate numerator and overall response rate accordingly.

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*). The other nine composites use the agreement response option.

Item-Level Percent Positive Response

Both positively worded items (such as "People support one another in this work area") and negatively worded items (such as "We have patient safety problems in this work area") 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 work area," 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 work area," 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 3-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.^{iv}

^{iv} Note that this method for calculating composite scores is slightly different 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. The Survey User's Guide will eventually be updated to reflect this slight change in methodology.

Item and Composite Percent Positive Scores

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

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

Table 1. Example of Computing Item and Composite Percent Positive Scores

Four items measuring "Overall Perceptions of Patient Safety"	For positively worded items, number of "Strongly agree" or "Agree" responses	For negatively worded items, number of "Strongly disagree" or "Disagree" responses	Total number of responses to the item	Percent positive response on item
Item A15-positively worded "Patient safety is never sacrificed to get more work done"	120	NA*	260	120/260=46%
Item A18-positively worded "Our procedures and systems are good at preventing errors from happening"	130	NA*	250	130/250=52%
Item A10-negatively worded "It is just by chance that more serious mistakes don't happen around here"	NA*	110	240	110/240=46%
Item A17-negatively worded "We have patient safety problems in this unit"	NA*	140	250	140/250= 56%
* NA = Not applicable Composite Score % Positive = (46% + 52% + 46% + 56%) / 4 = 50%				

In this example, there were 4 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.

Once you calculate your hospital's percent positive response for each of the 12 safety culture composites, you can compare your results with the composite-level results from the 885 database hospitals.

Minimum Number of Responses

New to the 2010 database report, we enacted several new rules regarding a minimum number of responses for calculating the percent positive scores. First, we only calculated percent positive scores for hospitals that had at least 10 completed surveys. Second, item-level results were only calculated 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. Third, if a hospital had fewer than five respondents in a breakout category (e.g., work area/unit, staff position, direct interaction with patients), no statistics were calculated for that breakout category (i.e., all scores were set to missing). For example, if a hospital had five respondents indicating they worked in the Anesthesiology unit and four respondents indicating they worked in Pharmacy, that hospital would be included in the statistics displayed for Anesthesiology units but not in those displayed for Pharmacy units. These minimums also apply to the statistics displayed in Appendixes B and D (results by respondent characteristics).

Percentiles

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

For example, to calculate the 10th percentile, one would multiply 885 (the total number of hospitals) by .10 (10th 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 jth position plus the percent positive value of the hospital in the jth + 1 position, divided by 2 $[(X_{(j)} + X_{(j+1)})/2]$. If "g" is not equal to 0, the percentile is equal to the percent positive value of the hospital in the jth + 1 position.

The following examples show how the 10th and 50th percentiles would be computed using a sample of percent positive scores from 12 hospitals (using fake data shown in Table 2). First, the percent positive scores are sorted from low to high on Composite "A."

Table 2. Data Table for Example of How To Compute Percentiles

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

←10th percentile score = 48%

←50th percentile score = 65%

10th percentile

- For the 10th 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 10th percentile score is equal to the percent positive value of the hospital in the jth +1 position:
 - "j" equals 1.
 - The 10th percentile equals the value for the hospital in the 2nd position = 48%.

50th percentile

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