



NURSING  
HOME  
SURVEY ON  
PATIENT SAFETY  
CULTURE:  
2011 User  
Comparative  
Database Report



Agency for Healthcare Research and Quality  
Advancing Excellence in Health Care • [www.ahrq.gov](http://www.ahrq.gov)

**PATIENT  
SAFETY**

The authors of this report are responsible for its content. Statements in the report should not be construed as endorsement by the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

# **Nursing Home Survey on Patient Safety Culture: 2011 Comparative Database Report**

**Prepared for:**

Agency for Healthcare Research and Quality  
U.S. Department of Health and Human Services  
540 Gaither Road  
Rockville, MD 20850  
<http://www.ahrq.gov>

**Contract No. HHSA 290200710024C**

**Managed and prepared by:**

Westat, Rockville, MD  
Joann Sorra, Ph.D.  
Theresa Famolaro, M.P.S.  
Naomi Dyer, Ph.D.  
Kabir Khanna, M.A.  
Dawn Nelson

**AHRQ Publication No. 11-0071  
August 2011**

This document is in the public domain and may be used and reprinted without permission except those copyrighted materials noted for which further reproduction is prohibited without specific permission of copyright holders.

**Suggested Citation:**

Sorra J, Famolaro T, Dyer N, et al. Nursing Home Survey on Patient Safety Culture: 2011 comparative database report. (Prepared by Westat, Rockville, MD, under Contract No. HHSA 290200710024C). Rockville, MD: Agency for Healthcare Research and Quality; August 2011. AHRQ Publication No. 11-0071.

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

## Table of Contents

<b>Executive Summary .....</b>	<b>1</b>
Survey Content.....	1
Survey Administration Statistics.....	1
Characteristics of Participating Nursing Homes.....	2
Characteristics of Respondents .....	2
Areas of Strength for Most Nursing homes .....	2
Areas With Potential for Improvement for Most Nursing homes.....	3
Results by Nursing Home Characteristics .....	3
Results by Respondent Characteristics .....	3
Action Planning for Improvement .....	5
<b>Purpose and Use of This Report .....</b>	<b>7</b>
<b>Chapter 1. Introduction .....</b>	<b>9</b>
Survey Development and Content .....	9
2011 Nursing Home Comparative Database and Report.....	11
<b>Chapter 2. Survey Administration Statistics.....</b>	<b>13</b>
<b>Chapter 3. Characteristics of Participating Nursing Homes .....</b>	<b>15</b>
Bed Size .....	15
Ownership.....	16
Geographic Region .....	16
Additional Nursing Home Characteristics .....	17
<b>Chapter 4. Characteristics of Respondents .....</b>	<b>19</b>
Job Title .....	19
Work Area.....	20
Interaction With Residents.....	20
Additional Respondent Characteristics.....	21
<b>Chapter 5. Overall Results .....</b>	<b>23</b>
Results: Composite and Item-Level Charts .....	23
<b>Chapter 6. Comparing Your Results .....</b>	<b>31</b>
Description of Comparative Statistics .....	31
Composite and Item-Level Comparative Tables .....	34
Appendixes A and B: Overall Results by Nursing Home and Respondent Characteristics .....	41
<b>Chapter 7. What's Next? Action Planning for Improvement.....</b>	<b>45</b>
Seven Steps of Action Planning.....	45
<b>References .....</b>	<b>51</b>
<b>Notes: Description of Data Cleaning and Calculations .....</b>	<b>53</b>

## List of Tables

Table 1-1. Patient Safety Culture Composites and Definitions .....	10
Table 2-1. Overall Statistics for Participating Nursing Homes .....	13
Table 2-2. Survey Administration Statistics .....	14
Table 2-3. Average Nursing Home Response Rate by Mode.....	14
Table 3-1. Distribution of Database Nursing Homes and Respondents by Bed Size .....	15
Table 3-2. Distribution of Database Nursing Homes and Respondents by Type of Ownership ...	16
Table 3-3. Distribution of Database Nursing Homes and Respondents by Region.....	16
Table 3-4. Distribution of Database Nursing Homes and Respondents by Ownership by Multifacility Organization .....	17
Table 3-5. Distribution of Database Nursing Homes and Respondents by Resident and/or Family Councils .....	17
Table 3-6. Distribution of Database Nursing Homes and Respondents by Participation in Quality Indicator Survey .....	18
Table 4-1. Distribution of Database Respondents by Job Title .....	19
Table 4-2. Distribution of Database Respondents by Work Area .....	20
Table 4-3. Distribution of Database Respondents by Interaction With Residents .....	20
Table 6-1. Interpretation of Percentile Scores .....	33
Table 6-2. Sample Percentile Statistics.....	34
Table 6-3. Composite-Level Comparative Results for the 2011 Database.....	35
Table 6-4. Item-Level Comparative Results for the 2011 Database.....	36
Table 6-5. Average Distribution of Willingness To Recommend Nursing Home—2011 Database Comparative Results .....	40
Table 6-6. Average Distribution of Overall Rating on Resident Safety—2011 Database Comparative Results .....	40

## List of Charts

Chart 4-1. Distribution of Database Respondents by Tenure in Current Nursing Home .....	21
Chart 4-2. Distribution of Database Respondents by Usual Hours Worked per Week .....	21
Chart 4-3. Distribution of Database Respondents by Shift Worked Most Often.....	22
Chart 4-4. Distribution of Database Respondents by Staffing Agency Status .....	22
Chart 5-1. Composite-Level Average Percent Positive Response—Across All 2011 Database Nursing Homes .....	25
Chart 5-2. Item-Level Average Percent Positive Response—Across All 2011 Database Nursing Homes .....	26
Chart 5-3. Average Percentage of Respondents Willing To Recommend their Nursing Home— Across All 2011 Database Nursing Homes .....	30
Chart 5-4. Average Percentage of Respondents for Overall Rating on Resident Safety—Across All 2011 Database Nursing Homes.....	30
Chart 7-1. Plan-Do-Study-Act Cycle.....	49

Appendixes cited in this report are provided electronically at  
<http://www.ahrq.gov/qual/nhsurvey11/>.

## Executive Summary

The *Nursing Home Survey on Patient Safety Culture*, released in 2008, is an expansion of the *Hospital Survey on Patient Safety Culture* from the Agency for Healthcare Research and Quality (AHRQ). The nursing home survey is specifically designed to measure the culture of resident safety in nursing homes from a staff perspective. The *Nursing Home Survey on Patient Safety Culture: 2011 Comparative Database Report* consists of data from 226 nursing homes and 16,155 nursing home staff respondents who completed the survey.

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

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

## Survey Content

The nursing home survey is designed to assess nursing home staff opinions about resident safety issues, medical errors, and event reporting. The survey includes 42 items that measure 12 areas, or composites, of patient safety culture:

1. Communication openness.
2. Compliance with procedures.
3. Feedback and communication about incidents.
4. Handoffs.
5. Management support for resident safety.
6. Nonpunitive response to mistakes.
7. Organizational learning.
8. Overall perceptions of resident safety.
9. Staffing.
10. Supervisor expectations and actions promoting resident safety.
11. Teamwork.
12. Training and skills.

The survey also includes two questions that ask respondents whether they would tell friends that this is a safe nursing home for their family (also called “willingness to recommend”) and to provide an overall rating on resident safety for their nursing home.

## Survey Administration Statistics

- The average nursing home response rate was 67 percent, with an average of 71 completed surveys per nursing home.

- Most nursing homes (83 percent) administered paper surveys. On average, nursing homes administering a paper survey had higher response rates (70 percent) compared with response rates from Web (49 percent) or mixed-mode surveys (56 percent).
- All nursing homes but one administered the survey to all staff or a sample of all staff.

## Characteristics of Participating Nursing Homes

- The nursing homes represent a range of bed sizes and geographic regions.
- Just under half the nursing homes are for profit (48 percent).
- Overall, the characteristics of the 226 database nursing homes are similar to the distribution of U.S. nursing homes in the Centers for Medicare & Medicaid’s Nursing Home Compare database.

## Characteristics of Respondents

- There were 16,155 nursing home staff respondents from 226 nursing homes.
- The top three job titles of respondents were:
  - Nursing Assistant/Aide (35 percent).
  - Support Staff (18 percent).
  - Licensed Nurse (17 percent).
- The top three work areas of respondents were:
  - Skilled Nursing (21 percent).
  - Other (20 percent).
  - Alzheimer’s/Dementia (7 percent).
- Most respondents (71 percent) indicated that they had direct interaction with residents.

## Areas of Strength for Most Nursing homes

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., “Staff support one another in this nursing home”) or negative responses (e.g., Disagree, Strongly disagree) to negatively worded items (e.g., “Staff use shortcuts to get their work done faster”).

***Overall Perceptions of Resident Safety (average 86 percent positive response)*** — This composite is defined as the extent to which residents are well cared for and safe. This composite had the highest average percent positive response.

***Feedback and Communication About Incidents (average 84 percent positive response)*** — This composite is defined as the extent to which staff discuss ways to keep residents safe, tell someone if they see something that might harm a resident, and talk about ways to keep incidents from happening again. This composite had the second highest average percent positive response.



## Areas With Potential for Improvement for Most Nursing homes

***Nonpunitive Response to Mistakes (average 51 percent positive response)*** — This composite is defined as the extent to which staff are not blamed when a resident is harmed, are treated fairly when they make mistakes, and feel safe reporting their mistakes. This composite had the lowest average percent positive response.

***Staffing (average 52 percent positive response)*** — This composite is defined as the extent to which there are enough staff to handle the workload, meet residents’ needs during shift changes, and keep residents safe because there is not much staff turnover. This composite had the second lowest average percent positive response.

## Results by Nursing Home Characteristics

### Bed Size

- Small nursing homes (*49 or fewer beds*) had the highest average percent positive response on 10 of the 12 patient safety culture composites.
- Small nursing homes (*49 or fewer beds*) had the highest percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (88 percent for *49 or fewer beds* versus 74 percent for *100-199 beds*).
- Small nursing homes (*49 or fewer beds*) had the highest percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (77 percent for *49 or fewer beds* versus 59 percent for *100-199 beds* and *200 beds or more*).

### Ownership

- *Nonprofit/government* nursing homes had a higher average percent positive response than *for profit* nursing homes on all 12 patient safety culture composites.
- *Nonprofit/government* nursing homes had a higher percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (80 percent) than *for profit* nursing homes (72 percent).
- *Nonprofit/government* nursing homes had a higher percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (66 percent) than *for profit* nursing homes (57 percent).

## Results by Respondent Characteristics

### Job Title

- *Administrators/Managers* and *Physicians* had the highest average percent positive response across the patient safety culture composites (79 percent positive); *Nursing Assistants/Aides* had the lowest (63 percent positive).
- *Administrators/Managers* and *Physicians* had the highest percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (93 percent); *Nursing Assistants/Aides* had the lowest (72 percent).

- *Administrators/Managers* had the highest percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (81 percent); *Other Providers* had the lowest (56 percent).

## Work Area

- Results for the patient safety culture composites and willingness to recommend were quite similar across work areas.
- Respondents who indicated they worked in *Many different areas in this nursing home/No specific area or unit* had the highest percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (63 percent); *Alzheimer’s/Dementia Unit* and *Rehab Unit* had the lowest (58 percent).

## Interaction With Residents

- Respondents *without* direct interaction with residents were more positive on 11 of the 12 patient safety composites than those *with* direct interaction with residents. The average response across all 12 composites was 73 percent positive for respondents *without* direct interaction with residents and 66 percent positive for respondents *with* direct interaction with residents.
- Respondents *without* direct interaction with residents had a higher percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (81 percent) than respondents *with* direct interaction with residents (75 percent).
- Respondents *without* direct interaction with residents had a higher percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (69 percent) than respondents *with* direct interaction with residents (60 percent).

## Shift Worked Most Often

- Respondents working *day shifts* had the highest average percent positive response on 11 of the 12 patient safety culture composites. The average percent positive response across all 12 composites was 69 percent positive for respondents working day shifts versus 62 percent positive for respondents working *nights*.
- Respondents working *day shifts* had the highest percentage who indicated they would tell their friends that this is a safe nursing home for their family (79 percent for respondents working *days* versus 74 percent for respondents working *evenings* and 70 percent for respondents working *nights*).
- Respondents working *day shifts* had the highest percentage who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (65 percent for respondents working *days* versus 60 percent for respondents working *evenings* and 51 percent for respondents working *nights*).

## 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 nursing homes 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

The *Nursing Home Survey on Patient Safety Culture*, released in 2008, is an expansion of the *Hospital Survey on Patient Safety Culture* from the Agency for Healthcare Research and Quality (AHRQ). The nursing home survey is specifically designed to measure the culture of resident safety in nursing homes from a staff perspective. The *Nursing Home Survey on Patient Safety Culture: 2011 Comparative Database Report* consists of data from 226 nursing homes and 16,155 nursing home staff respondents who completed the survey.

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

- **Comparison**—To allow nursing homes to compare their patient safety culture survey results with those from other nursing homes.
- **Assessment and Learning**—To provide data to nursing homes to facilitate internal assessment and learning in the patient safety improvement process.
- **Supplemental Information**—To provide supplemental information to help nursing homes identify their strengths and areas with potential for improvement in patient safety culture.

The report presents statistics (averages, standard deviations, minimum and maximum scores, and percentiles) on the patient safety culture composites and items from the survey.

Appendixes A and B present overall results by nursing home characteristics (bed size and ownership) and respondent characteristics (job title, nursing home work area, interaction with residents, and shift worked most often).



# Chapter 1. Introduction

## Survey Development and Content

To develop the *Nursing Home Survey on Patient Safety Culture*, researchers conducted a review of the literature pertaining to resident safety in nursing homes, health care quality, medical errors, error reporting, safety climate and culture, and organizational climate and culture. In addition, they reviewed existing nursing home surveys. The researchers then consulted more than two dozen experts in long-term care and nursing home safety to identify a potential list of dimensions to include in the survey.

Researchers then developed draft survey items to measure the key dimensions. The survey draft was iteratively pretested with nursing home staff to ensure that the items were easy to understand and answer and were relevant to resident safety in nursing homes. The Flesch-Kincaid score for the pilot test instrument was below a seventh-grade reading level.

The pilot test version of the nursing home survey was administered in late 2007 to more than 5,000 staff working in 40 nursing homes across the United States. Participating nursing homes varied by bed size, geographic region, urbanicity, and ownership.

At the end of data collection, more than 3,700 surveys were received. Analysts examined item statistics and the reliability of the safety culture dimensions. Exploratory and confirmatory factor analyses were conducted to examine the factor structure of the survey. Based on these analyses, the survey was revised so that the final items and dimensions in the *Nursing Home Survey on Patient Safety Culture* have sound psychometric properties. The final survey includes 42 items that measure 12 areas, or composites, of patient safety culture. Each of the 12 patient safety culture composites is listed and defined in Table 1-1.

**Table 1-1. Patient Safety Culture Composites and Definitions**

<b>Patient Safety Culture Composite</b>	<b>Definition: <i>The extent to which....</i></b>
1. Communication openness	Staff speak up about problems and their ideas and suggestions are valued
2. Compliance with procedures	Staff follow standard procedures to care for residents and do not use shortcuts to get their work done faster
3. Feedback and communication about incidents	Staff discuss ways to keep residents safe, tell someone if they see something that might harm a resident, and talk about ways to keep incidents from happening again
4. Handoffs	Staff are told what they need to know before taking care of a resident or when a resident’s care plan changes, and have all the information they need when residents are transferred from the hospital
5. Management support for resident safety	Nursing home management provides a work climate that promotes resident safety and shows that resident safety is a top priority
6. Nonpunitive response to mistakes	Staff are not blamed when a resident is harmed, are treated fairly when they make mistakes, and feel safe reporting their mistakes
7. Organizational learning	There is a learning culture that facilitates making changes to improve resident safety and evaluates changes for effectiveness
8. Overall perceptions of resident safety	Residents are well cared for and safe
9. Staffing	There are enough staff to handle the workload, meet residents’ needs during shift changes, and keep residents safe because there is not much staff turnover
10. Supervisor expectations and actions promoting safety	Supervisors listen to staff ideas and suggestions about resident safety, praise staff who follow the right procedures, and pay attention to safety problems
11. Teamwork	Staff treat each other with respect, support one another, and feel like they are part of a team
12. Training and skills	Staff get the training they need, have enough training on how to handle difficult residents, and understand the training they get in the nursing home

The survey also includes two questions that ask respondents whether they would tell friends that this is a safe nursing home for their family (also called “willingness to recommend”) and to provide an overall rating on resident safety for their nursing home. In addition, respondents are asked to provide limited background demographic information about themselves.

The survey’s toolkit materials are available at the AHRQ Web site ([www.ahrq.gov/qual/patientsafetyculture/nhsurvindex.htm](http://www.ahrq.gov/qual/patientsafetyculture/nhsurvindex.htm)) and include the survey, survey items and dimensions, user’s guide, feedback report template, information about the Microsoft® Excel® Data Entry and Analysis Tool, and the Nursing Home Patient Safety Improvement Resource List. The toolkit provides nursing homes with the basic knowledge and tools needed to conduct a patient safety culture assessment and ideas regarding how to use the data.



## 2011 Nursing Home Comparative Database and Report

Since its release, the nursing home survey has been implemented in hundreds of nursing homes across the United States. Nursing homes administering the survey have expressed interest in comparing their results with results from other nursing homes 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 *Nursing Home Survey on Patient Safety Culture Comparative Database* to enable nursing homes to compare their most recent survey results with those from other nursing homes and to eventually examine trends in safety culture over time. Nursing homes interested in submitting to the database should go to the AHRQ Web site for more information (<http://www.ahrq.gov/qual/patientsafetyculture/nhsurvindex.htm>).

### Data Limitations

The survey results presented in this report represent the largest compilation of survey data currently available on nursing home resident safety culture and therefore provide a useful reference for comparison. However, several limitations to these data should be kept in mind.

First, the nursing homes that submitted data to the database are not a statistically selected sample of all U.S. nursing homes, since only nursing homes that voluntarily administered the survey and were willing to submit their data for inclusion in the database are represented. However, the characteristics of the database nursing homes are similar to the distribution of nursing homes in the Nursing Home Compare database of the Centers for Medicare & Medicaid Services, as described further in Chapter 3.

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

In addition, some nursing homes conducted a census, surveying all 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 obtained about the database nursing homes, such as survey administration modes and response rates, are provided in Chapter 2.

Finally, the data submitted by nursing homes 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 how the 2011 database nursing homes conducted survey administration.

### *Highlights*

- The 2011 database consists of data from 16,155 nursing home staff respondents across 226 participating nursing homes.
- The average nursing home response rate was 67 percent, with an average of 71 completed surveys per nursing home.
- Most nursing homes (83 percent) administered paper surveys, which resulted in higher response rates (70 percent) compared with response rates from Web (49 percent) or mixed-mode surveys (56 percent).
- All nursing homes but one administered the survey to all staff or a sample of all staff from all nursing home departments.

The 2011 database consists of survey data from 226 nursing homes with a total of 16,155 nursing home staff respondents. Participating nursing homes administered the nursing home survey to their staff between January 2008 and February 2011 and voluntarily submitted their data for inclusion in the database. All nursing homes but one administered the survey to all staff or a sample of all staff from all nursing home departments.

Overall statistics for nursing homes included in the 2011 database are shown in Table 2-1. An average of 71 completed surveys were submitted per nursing home (range: 10 to 1,187), with an average nursing home response rate of 67 percent (range: 8 to 100 percent).

**Table 2-1. Overall Statistics for Participating Nursing Homes**

<b>Overall Response Rate Information</b>	<b>Statistic</b>
Number of respondents	16,155
Number of surveys administered	24,995
Overall response rate	65%
<b>Average Response Rate Information</b>	<b>Statistic</b>
Average number of respondents per nursing home (range: 10 to 1,187)	71
Average number of surveys administered per nursing home (range: 12 to 1,440)	111
Overall average nursing home response rate (range: 8% to 100%)	67%

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

**Table 2-2. Survey Administration Statistics**

Survey Administration Mode	Database Nursing Homes		Database Respondents	
	Number	Percent	Number	Percent
Paper only	187	83%	11,519	71%
Web only	26	12%	1,509	9%
Both paper and Web	13	6%	3,127	19%
TOTAL	226	100%	16,155	100%

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

Table 2-3 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 nursing homes conduct the nursing home survey as a paper survey. But each nursing home should consider its prior experience with survey modes and response rates when determining which mode is best.

**Table 2-3. Average Nursing Home Response Rate by Mode**

Survey Administration Mode	Average Nursing Home Response Rate
Paper only	70%
Web only	49%
Both Web and paper	56%

## Chapter 3. Characteristics of Participating Nursing Homes

This chapter presents information about the distribution of database nursing homes by bed size, ownership, geographic region, and additional nursing home characteristics. Although the nursing homes that voluntarily submitted data to the *Nursing Home Survey on Patient Safety Culture (NH SOPS) Comparative Database* do not constitute a statistically selected sample, the characteristics of these nursing homes are fairly consistent with the distribution of nursing homes included in the Nursing Home Compare database of the Centers for Medicare & Medicaid Services (CMS). The characteristics of NH SOPS database nursing homes by bed size, ownership, geographic region, and additional characteristics are presented in the following tables and are compared to the distribution of nursing homes included in the CMS Nursing Home Compare database.<sup>i</sup>

### Highlights

- Database nursing homes represent a range of bed sizes and geographic regions.
- Just under half the database nursing homes are for profit (48 percent).
- Overall, the characteristics of the 226 database nursing homes are similar to the distribution of nursing homes in Nursing Home Compare.

### Bed Size

Table 3-1 shows the distribution of database nursing homes and respondents by nursing home bed size. Overall, the distribution of database nursing homes by bed size is similar to the distribution of nursing homes in Nursing Home Compare.

**Table 3-1. Distribution of Database Nursing Homes and Respondents by Bed Size**

Bed Size	CMS Nursing Home Compare Nursing Homes		NH SOPS Database Nursing Homes		NH SOPS Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
1-49 beds	2,048	13%	26	12%	814	5%
50-99 beds	5,732	37%	78	35%	3,974	25%
100-199 beds	6,939	44%	100	44%	6,650	41%
200 or more beds	972	6%	22	10%	4,717	29%
TOTAL	15,691	100%	226	100%	16,155	100%

**Note:** Percentages may not add to 100 due to rounding. CMS = Centers for Medicare & Medicaid Services. NH SOPS = Nursing Home Survey on Patient Safety Culture.

<sup>i</sup> CMS Nursing Home Compare data were obtained from the Nursing Home Compare – About the Nursing Home database, available at: [www.medicare.gov/Download/DownloadDB.asp?%20language=Englishversion=default](http://www.medicare.gov/Download/DownloadDB.asp?%20language=Englishversion=default) (accessed February 17, 2011).

## Ownership

As shown in Table 3-2, just under half the database nursing homes are for profit (48 percent), which is a much smaller percentage than in the Nursing Home Compare database.

**Table 3-2. Distribution of Database Nursing Homes and Respondents by Type of Ownership**

Type of Ownership	CMS Nursing Home Compare Nursing Homes		NH SOPS Database Nursing Homes		NH SOPS Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
For profit	10,763	69%	109	48%	5,897	37%
Nonprofit/government	4,928	31%	117	52%	10,258	63%
TOTAL	15,691	100%	226	100%	16,155	100%

**Note:** Percentages may not add to 100 due to rounding. CMS = Centers for Medicare & Medicaid Services. NH SOPS = Nursing Home Survey on Patient Safety Culture.

## Geographic Region

Table 3-3 shows the distribution of database nursing homes by geographic regions defined by the U.S. Census Bureau.<sup>ii</sup> Overall, the distribution of database nursing homes by region is similar to the distribution of nursing homes in Nursing Home Compare.

**Table 3-3. Distribution of Database Nursing Homes and Respondents by Region**

Census Bureau Region	CMS Nursing Home Compare Nursing Homes		NH SOPS Database Nursing Homes		NH SOPS Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Northeast	2,685	17%	27	12%	4,753	29%
Midwest	5,170	33%	64	28%	3,716	23%
South	5,398	34%	86	38%	5,365	33%
West	2,438	16%	49	22%	2,321	14%
TOTAL	15,691	100%	226	100%	16,155	100%

**Note:** Percentages may not add to 100 due to rounding. CMS = Centers for Medicare & Medicaid Services. NH SOPS = Nursing Home Survey on Patient Safety Culture.

<sup>ii</sup> NOTE: States are categorized into regions defined by the U.S. Census Bureau as follows:

Northeast: CT, MA, ME, NH, NJ, NY, PA, RI, VT

Midwest: IA, IL, IN, KS, MI, MN, MO, NE, ND, OH, SD, WI

South: AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV

West: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY

## Additional Nursing Home Characteristics

Tables 3-4 to 3-6 show the distribution of database nursing homes by whether owned or leased by multifacility organizations, presence of resident/family councils, and participation in the Quality Indicator Survey (QIS).<sup>iii</sup> Compared with the population of nursing homes in the Nursing Home Compare database, more NH SOPS database nursing homes were owned or leased by a multifacility organization and participated in the QIS. The percentages of nursing homes with resident and/or family councils are similar across the two databases.

**Table 3-4. Distribution of Database Nursing Homes and Respondents by Ownership by Multifacility Organization**

Ownership by Multifacility Organization	CMS Nursing Home Compare Nursing Homes		NH SOPS Database Nursing Homes		NH SOPS Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Owned or leased by multifacility organization	8,569	55%	147	66%	9,837	67%
Not owned or leased by multifacility organization	7,122	45%	72	34%	4,784	33%
<b>TOTAL</b>	<b>15,691</b>	<b>100%</b>	<b>219</b>	<b>100%</b>	<b>14,621</b>	<b>100%</b>

**Note:** Data missing for seven database nursing homes with 1,534 respondents. Percentages may not add to 100 due to rounding. CMS = Centers for Medicare & Medicaid Services. NH SOPS = Nursing Home Survey on Patient Safety Culture.

**Table 3-5. Distribution of Database Nursing Homes and Respondents by Resident and/or Family Councils**

Resident and/or Family Councils	CMS Nursing Home Compare Nursing Homes		NH SOPS Database Nursing Homes		NH SOPS Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Both resident and family councils	5,104	33%	80	37%	6,768	46%
Resident council only	9,971	64%	133	61%	7,523	51%
Family council only	52	<1%	2	1%	87	1%
None	564	4%	4	2%	243	2%
<b>TOTAL</b>	<b>15,691</b>	<b>100%</b>	<b>219</b>	<b>100%</b>	<b>14,621</b>	<b>100%</b>

**Note:** Data missing for seven database nursing homes with 1,534 respondents. Percentages may not add to 100 due to rounding. CMS = Centers for Medicare & Medicaid Services. NH SOPS = Nursing Home Survey on Patient Safety Culture.

<sup>iii</sup> The Quality Indicator Survey (QIS) is a computer-assisted long-term care survey used by the Centers for Medicare & Medicaid Services and selected State Survey Agencies to determine if Medicare- and Medicaid-certified nursing homes are meeting Federal requirements. The QIS is a two-staged process whereby surveyors systematically review specific nursing home requirements and objectively investigate any regulatory areas that are triggered. More information on the QIS is available at: [www.cms.gov/SurveyCertificationGenInfo/downloads/SCLetter08-21.pdf](http://www.cms.gov/SurveyCertificationGenInfo/downloads/SCLetter08-21.pdf).

**Table 3-6. Distribution of Database Nursing Homes and Respondents by Participation in Quality Indicator Survey**

Participation in Quality Indicator Survey	CMS Nursing Home Compare Nursing Homes		NH SOPS Database Nursing Homes		NH SOPS Database Respondents	
	Number	Percent	Number	Percent	Number	Percent
Yes	2,979	19%	65	30%	2,904	20%
No	12,712	81%	154	70%	11,717	80%
TOTAL	15,691	100%	219	100%	14,621	100%

**Note:** Data missing for seven database nursing homes with 1,534 respondents. Percentages may not add to 100 due to rounding. CMS = Centers for Medicare & Medicaid Services. NH SOPS = Nursing Home Survey on Patient Safety Culture.



## Chapter 4. Characteristics of Respondents

This chapter describes respondents within the participating nursing homes. The data presented here are based on respondents' answers to survey questions about their job title, the nursing home work area/unit where they spent most of their work time, their direct interaction with residents, and additional respondent characteristics. In the tables presented in this chapter, respondents from nursing homes 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 16,155 nursing home staff respondents from 226 nursing homes.
- The top three job titles of respondents were: Nursing Assistant/Aide (35 percent), Support Staff (18 percent), and Licensed Nurse (17 percent).
- The top three work areas of respondents were: Skilled Nursing (21 percent), Other (20 percent), and Alzheimer's/Dementia (7 percent).
- Most respondents (71 percent) indicated they had direct interaction with residents.

### Job Title

More than one-third of respondents (35 percent) selected "Nursing Assistant/Aide" as their job title, followed by "Support Staff" (18 percent), and "Licensed Nurse" (17 percent), as shown in Table 4-1.

**Table 4-1. Distribution of Database Respondents by Job Title**

Job Title	Database Respondents	
	Number	Percent
Nursing Assistant/Aide	5,154	35%
Support Staff	2,671	18%
Licensed Nurse	2,574	17%
Administrator/Manager	1,477	10%
Direct Care Staff	1,387	9%
Administrative Support Staff	711	5%
Other	551	4%
Physician (MD, DO)	135	1%
Other Provider	79	1%
<b>TOTAL</b>	<b>14,739</b>	<b>100%</b>
Missing: No answer	1,416	
<b>Overall total</b>	<b>16,155</b>	

**Note:** Percentages may not add to 100 due to rounding. DO = doctor of osteopathy. MD = doctor of medicine.

## Work Area

Most respondents (46 percent) indicated they work in many different areas or no specific area of the nursing home; 21 percent worked in the “Skilled nursing unit” (Table 4-2). The *Nursing Home Survey on Patient Safety Culture* uses generic categories for nursing home work areas and units. Therefore, a large percentage of respondents chose the “Other” response option, which allowed them to note their specific work area or unit. Participating nursing homes 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 4-2. Distribution of Database Respondents by Work Area**

Work Area	Database Respondents	
	Number	Percent
Many different areas in this nursing home/No specific area or unit	6,641	46%
Skilled nursing unit	2,977	21%
Other area or unit	2,960	20%
Alzheimer’s/Dementia unit	956	7%
Rehab unit	938	6%
TOTAL	14,472	100%
Missing: No answer	1,683	
Overall total	16,155	

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

## Interaction With Residents

As shown in Table 4-3, most respondents (71 percent) indicated they had direct interaction with residents.

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

Respondent Interaction With Residents	Database Respondents	
	Number	Percent
YES, I work directly with residents most of the time	10,882	71%
NO, I do NOT work directly with residents most of the time	4,349	29%
TOTAL	15,231	100%
Missing: No answer or question was not asked	924	
Overall total	16,155	

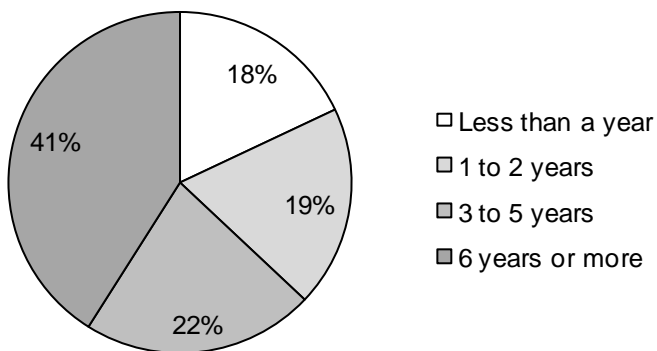
**Note:** Percentages may not add to 100 due to rounding.

## Additional Respondent Characteristics

Charts 4-1 through 4-4 display the following additional workplace characteristics reported by database respondents:

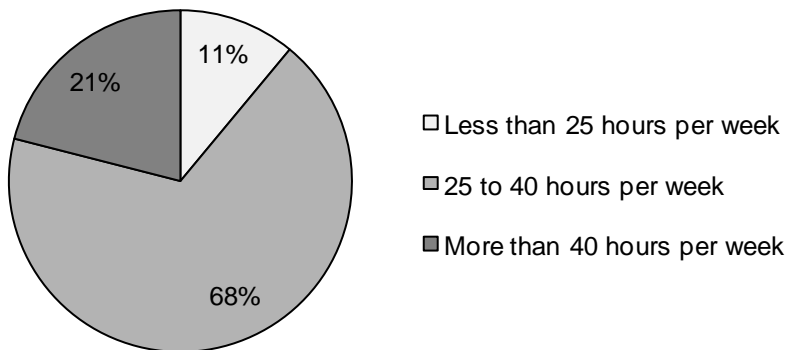
- Tenure in current nursing home.
- Usual hours worked per week.
- Shift worked most often.
- Staffing agency status.

**Chart 4-1. Distribution of Database Respondents by Tenure in Current Nursing Home**



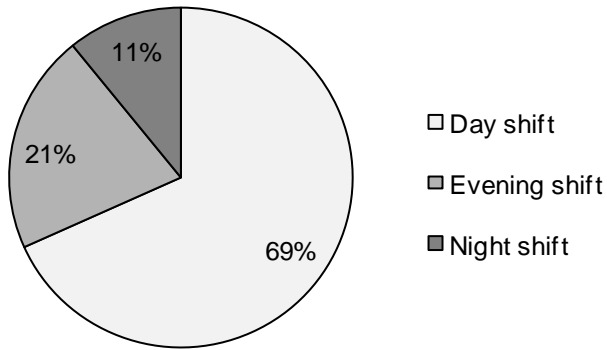
**Note:** Percentages may not add to 100 due to rounding.

**Chart 4-2. Distribution of Database Respondents by Usual Hours Worked per Week**



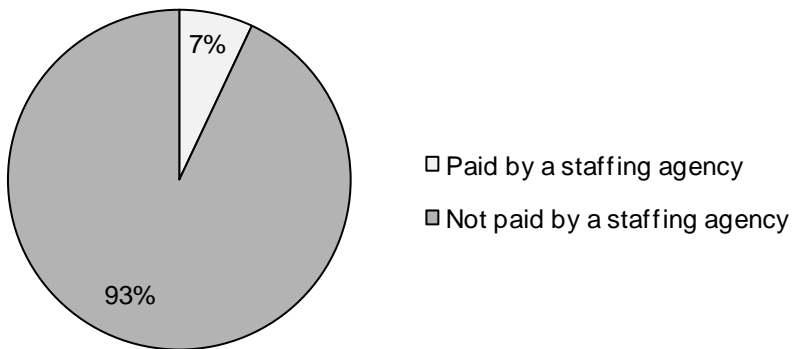
**Note:** Percentages may not add to 100 due to rounding.

**Chart 4-3. Distribution of Database Respondents by Shift Worked Most Often**



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

**Chart 4-4. Distribution of Database Respondents by Staffing Agency Status**



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

## Chapter 5. Overall Results

This chapter presents the overall survey results for the database, showing the average percentage of positive responses across the database nursing homes on each of the survey's items and composites. Reporting the average across nursing homes ensures that each nursing home receives an equal weight that contributes to the overall average. Reporting the data at the nursing home level in this way is important because culture is considered to be a group characteristic and is not considered to be a solely individual characteristic. An alternative method would be to report a straight percentage of positive responses across all respondents, but this method would give greater weight to respondents from larger nursing homes. (There are more than twice as many respondents from larger nursing homes as those from smaller nursing homes.)

### *Highlights*

- *Overall Perceptions of Resident Safety*—This composite had the highest average percent positive response (86 percent), indicating it is a strength for most nursing homes.
- *Feedback and Communication About Incidents*—This composite had the second highest average percent positive response (84 percent), indicating it is a strength for most nursing homes.
- *Nonpunitive Response to Mistakes*—This composite had the lowest average percent positive response (51 percent), indicating it is an area with potential for improvement for many nursing homes.
- *Staffing*—This composite had the second lowest average percent positive response (52 percent), indicating it is an area with potential for improvement for many nursing homes.
- On average, most respondents within nursing homes (76 percent) indicated they would tell their friends that this is a safe nursing home for their family.
- On average, most respondents within nursing homes (62 percent) gave their nursing home a rating of “Excellent” (25 percent) or “Very Good” (37 percent) on resident safety; this was identified as an area of strength for most nursing homes.

### Results: Composite and Item-Level Charts

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

## Composite-Level Results<sup>iv</sup>

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

### Areas of Strength

- ***Overall Perceptions of Resident Safety***—the extent to which residents are well cared for and safe. This patient safety culture composite had the highest average percent positive response (86 percent), indicating it is an area of strength across the database nursing homes.
- ***Feedback and Communication About Incidents***—the extent to which staff discuss ways to keep residents safe, tell someone if they see something that might harm a resident, and talk about ways to keep incidents from happening again. This patient safety culture composite had the second highest average percent positive response (84 percent).

### Areas With Potential for Improvement

- ***Nonpunitive Response to Error***—the extent to which staff are not blamed when a resident is harmed, are treated fairly when they make mistakes, and feel safe reporting their mistakes. This patient safety culture composite had the lowest average percent positive response (51 percent), indicating it is an area with potential for improvement across the database nursing homes.
- ***Staffing***—the extent to which there are enough staff to handle the workload, meet residents' needs during shift changes, and keep residents safe because there is not much staff turnover. This patient safety culture composite had the second lowest average percent positive response (52 percent).

## Item-Level Results

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

### Areas of Strength

- The survey item with the highest average percent positive response (87 percent) was from the patient safety culture composite *Feedback and Communication About Incidents*: “Staff tell someone if they see something that might harm a resident.”

---

<sup>iv</sup> Some nursing homes excluded one or more survey items and are therefore excluded from composite-level calculations when the omitted items pertain to a particular composite. For this 2011 report, 10 nursing homes were excluded from one or more composite-level calculations for this reason.

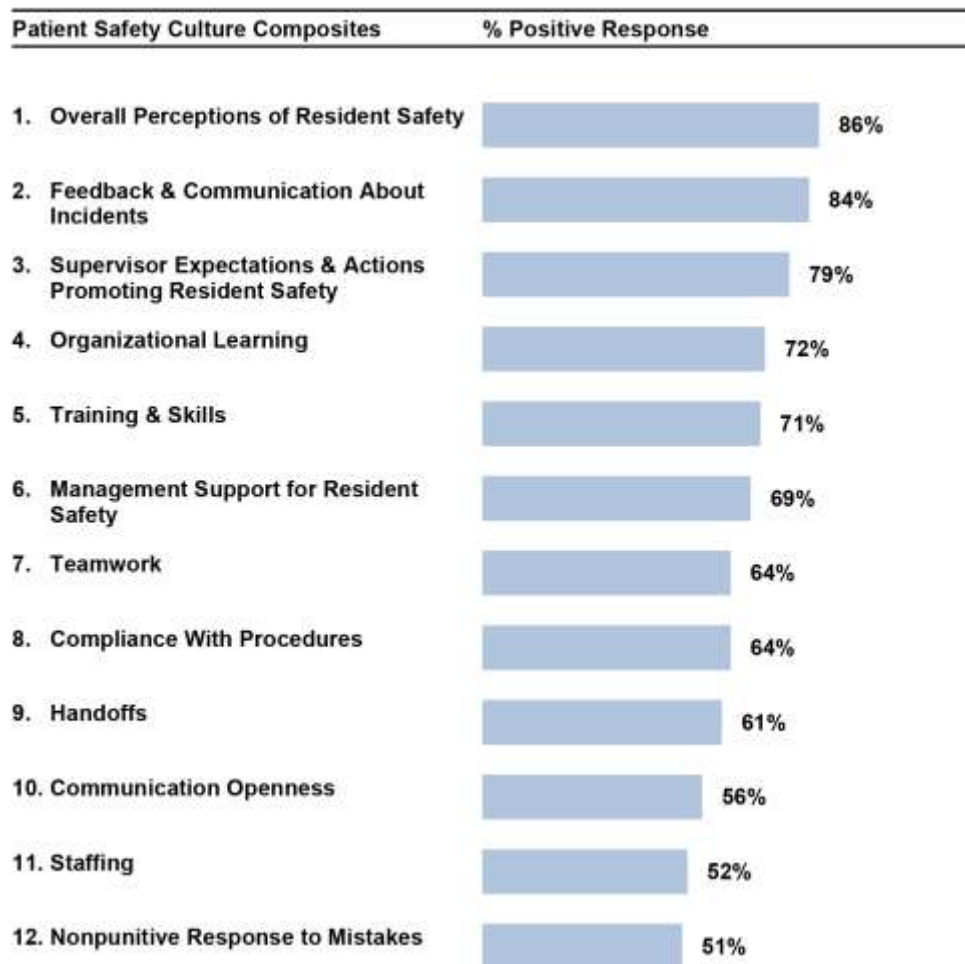
## Area With Potential for Improvement

- The survey item with the lowest average percent positive response (35 percent) was from the patient safety culture composite *Staffing*: “Staff have to hurry because they have too much work to do” (that is, an average of only 35 percent of respondents in each nursing home *Strongly disagreed* or *Disagreed* with this negatively worded item).

**Nursing Home Recommendation**— Chart 5-3 shows the results from the item that asked respondents whether they would tell their friends that this is a safe nursing home for their family. On average across nursing homes, most respondents were positive, with 76 percent saying yes.

**Overall Rating on Resident Safety**—Chart 5-4 shows the results from the item that asked respondents to give their nursing home an overall rating on resident safety. On average across nursing homes, most respondents were positive, with 62 percent giving their nursing home a rating of “Excellent” (25 percent) or “Very Good” (37 percent).

**Chart 5-1. Composite-Level Average Percent Positive Response—Across All 2011 Database Nursing Homes**



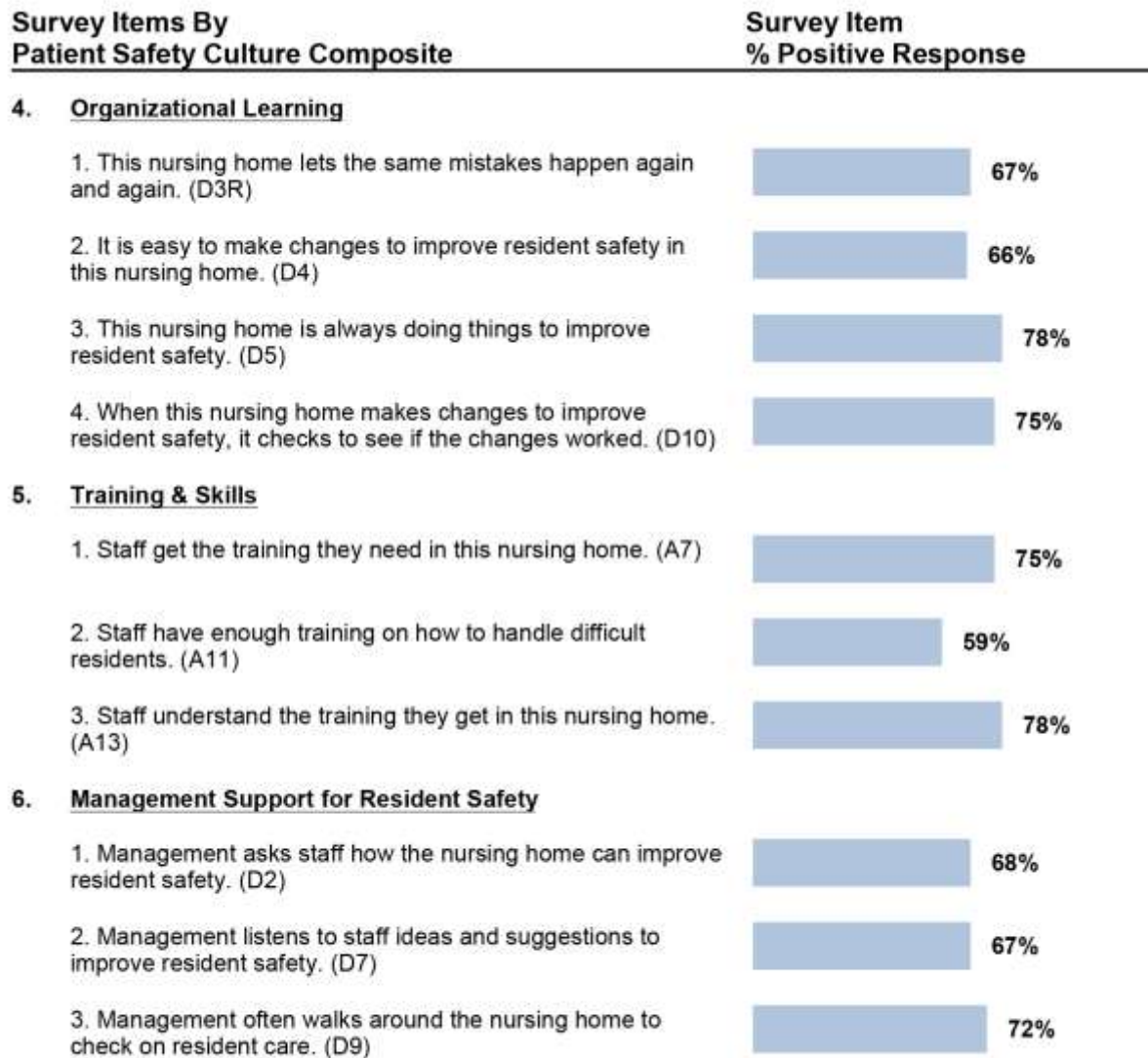
**Chart 5-2. Item-Level Average Percent Positive Response—Across All 2011 Database Nursing Homes (Page 1 of 4)**

<b>Survey Items By Patient Safety Culture Composite</b>	<b>Survey Item % Positive Response</b>
<b>1. Overall Perceptions of Resident Safety</b>	
1. Residents are well cared for in this nursing home. (D1)	86%
2. This nursing home does a good job keeping residents safe. (D6)	84%
3. This nursing home is a safe place for residents. (D8)	86%
<b>2. Feedback &amp; Communication About Incidents</b>	
1. When staff report something that could harm a resident, someone takes care of it. (B4)	80%
2. In this nursing home, we talk about ways to keep incidents from happening again. (B5)	83%
3. Staff tell someone if they see something that might harm a resident. (B6)	87%
4. In this nursing home, we discuss ways to keep residents safe from harm. (B8)	84%
<b>3. Supervisor Expectations &amp; Actions Promoting Resident Safety</b>	
1. My supervisor listens to staff ideas and suggestions about resident safety. (C1)	79%
2. My supervisor says a good word to staff who follow the right procedures. (C2)	73%
3. My supervisor pays attention to resident safety problems in this nursing home. (C3)	85%

**Note:** The item’s survey location is shown after the item text. 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).

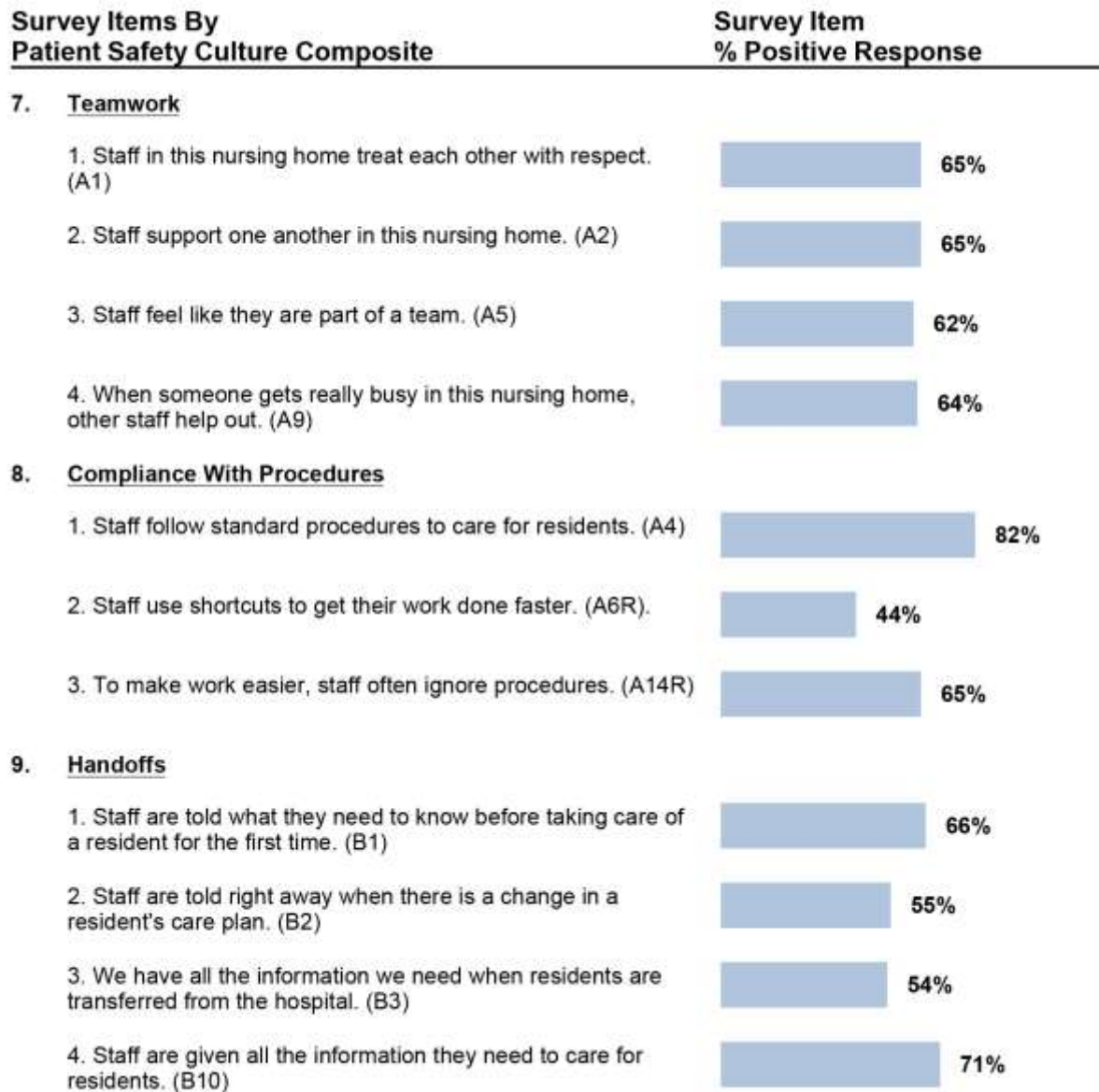


**Chart 5-2. Item-Level Average Percent Positive Response—Across All 2011 Database Nursing Homes (Page 2 of 4)**



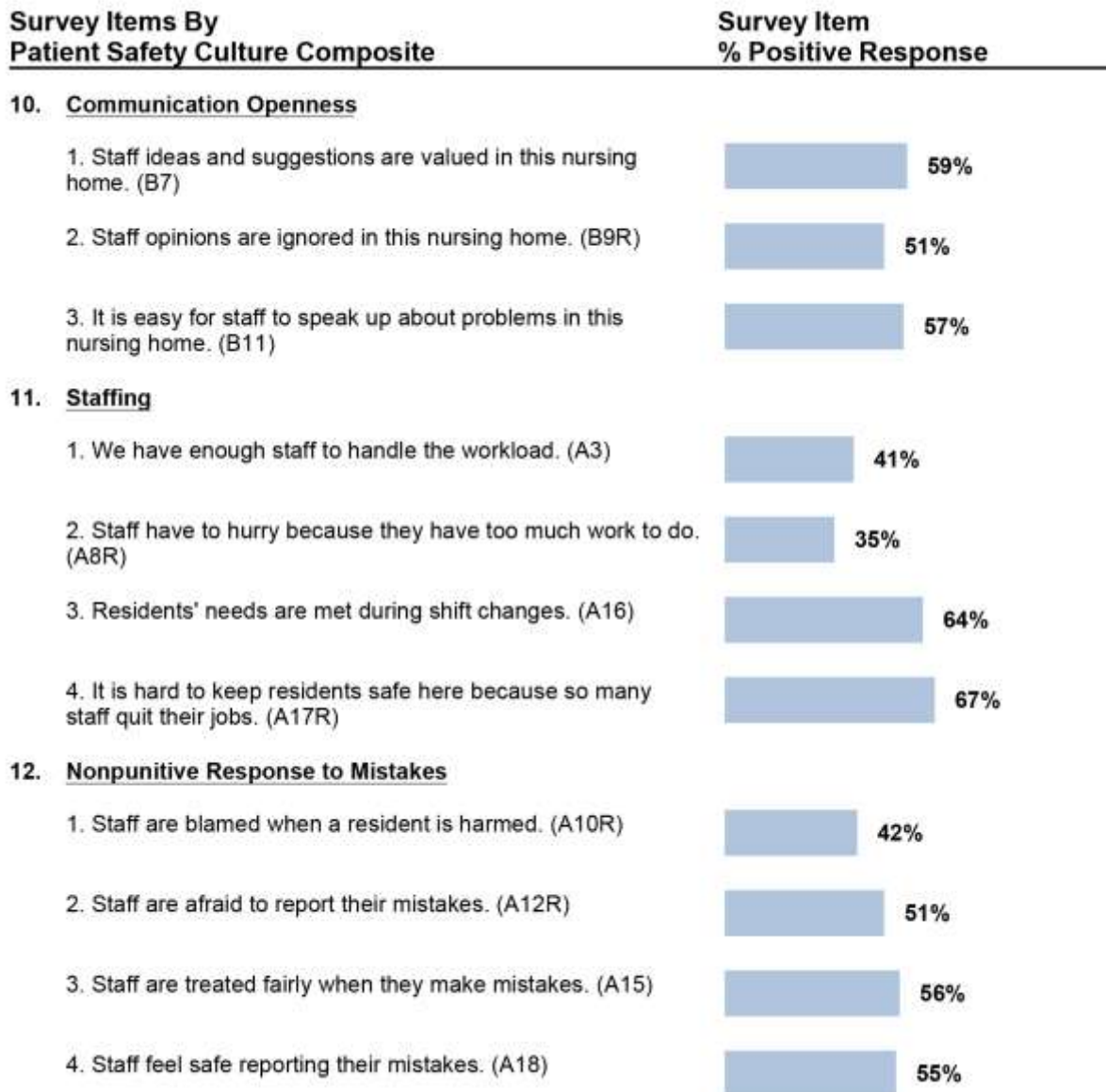
**Note:** The item’s survey location is shown after the item text. An “R” indicates a negatively worded item, where the percent positive response is based on those who responded “Strongly disagree” or “Disagree,” or “Never” or “Rarely” (depending on the response category used for the item).

**Chart 5-2. Item-Level Average Percent Positive Response—Across All 2011 Database Nursing Homes (Page 3 of 4)**



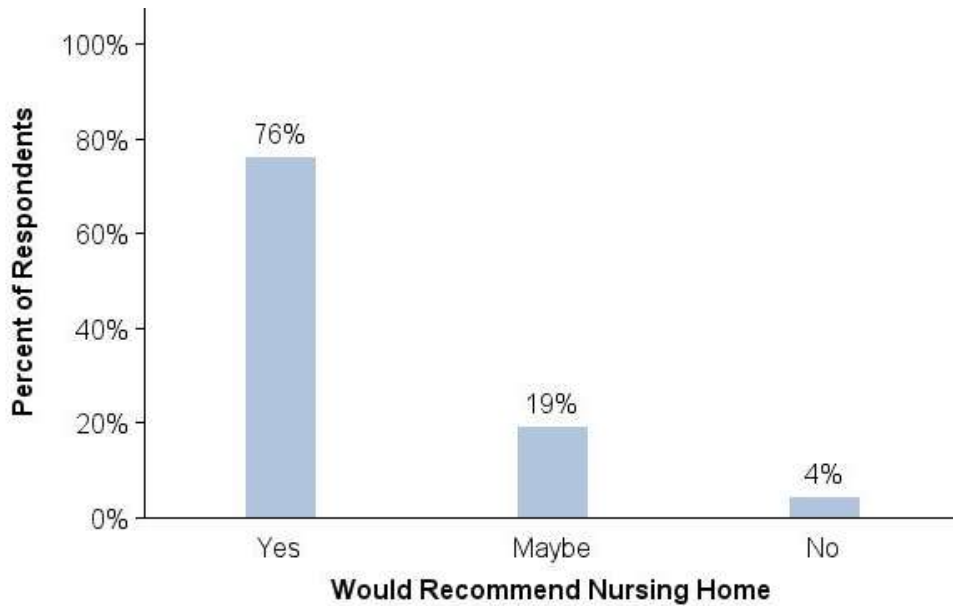
**Note:** The item's survey location is shown after the item text. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

**Chart 5-2. Item-Level Average Percent Positive Response—Across All 2011 Database Nursing Homes (Page 4 of 4)**



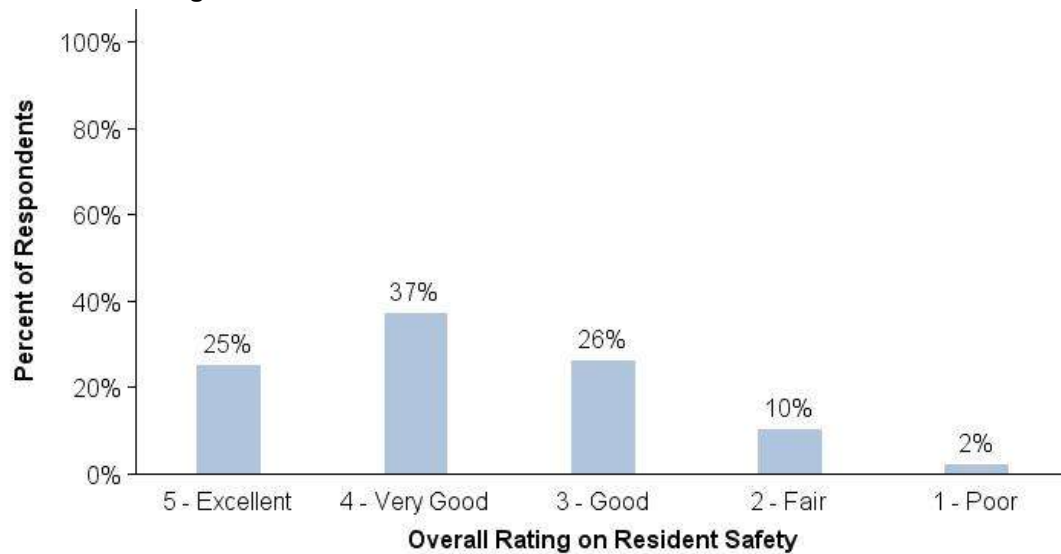
**Note:** The item's survey location is shown after the item text. An "R" indicates a negatively worded item, where the percent positive response is based on those who responded "Strongly disagree" or "Disagree," or "Never" or "Rarely" (depending on the response category used for the item).

**Chart 5-3. Average Percentage of Respondents Willing To Recommend Their Nursing Home—Across All 2011 Database Nursing Homes**



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

**Chart 5-4. Average Percentage of Respondents for Overall Rating on Resident Safety—Across All 2011 Database Nursing Homes**



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

## Chapter 6. Comparing Your Results

To compare your nursing home's survey results with the results from the database, you will need to calculate your nursing home's percent positive response on the survey's 42 items and 12 composites (plus the two questions on resident 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 nursing home's results with the database averages and examine the percentile scores to place your nursing home's results relative to the distribution of database nursing homes.

When comparing your nursing home's results with results from the database, keep in mind that the database provides only *relative* comparisons. Even though your nursing home'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 nursing home in an *absolute* sense. As you will notice from the database results, there are some patient safety composites that even the highest scoring nursing homes could improve on. Therefore, the comparative data provided in this report should be used to supplement your nursing home's own efforts toward identifying areas of strength and areas on which to focus patient safety culture improvement efforts.

### ***Highlights***

- There was considerable variability in the range of nursing home scores (lowest to highest) across the 12 patient safety culture composites.
- Willingness to recommend one's nursing home also had a wide range of response. In one nursing home, 28 percent of respondents indicated that they were willing to recommend their nursing home, yet at another nursing home, 100 percent did.
- Overall rating on resident safety showed a wide range of response as well. In at least one nursing home, none of the respondents (0 percent) provided their unit with a rating of "Excellent," and at another nursing home, 82 percent did.

## **Description of Comparative Statistics**

In addition to the average percent positive scores presented in Chapter 5, a number of other statistics are provided to facilitate comparisons with the database nursing homes. A description of each statistic shown 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 recommending this nursing home and overall rating on resident safety) 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 nursing homes in the database, as well as averaging item-level percent positive scores across nursing homes. Since the percent positive is displayed as an overall average, scores from each nursing home are weighted equally in their contribution to the calculation of the average.<sup>v</sup>

## Standard Deviation

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

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

When the distribution of nursing home 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 nursing home scores. For example, if an average percent positive score across the database nursing homes were 70 percent with a standard deviation of 10 percent (and scores were normally distributed), then about 68 percent of all the database nursing homes 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 (nursing home bed size, ownership, etc.). Statistical significance is greatly influenced by sample size, so as the number of observations in comparison groups gets larger, small differences in scores will be statistically significant. While a 1 percentage point difference between percent positive scores might be “statistically” significant (that is, not due to chance), the difference is not likely to be meaningful or “practically” significant.

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

- **Use a 5 percentage point difference as a rule of thumb when comparing your nursing home’s results with the database averages.** Your nursing home’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

---

<sup>v</sup> 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 nursing homes since they account for more than twice as many responses as those from smaller nursing homes.

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

## Minimum and Maximum Scores

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

## Percentiles

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

**Table 6-1. Interpretation of Percentile Scores**

Percentile Score	Interpretation
<b>10<sup>th</sup> percentile</b> This score represents the lowest scoring nursing homes.	10% of the nursing homes scored the same or lower. 90% of the nursing homes scored higher.
<b>25<sup>th</sup> percentile</b> This score represents lower scoring nursing homes.	25% of the nursing homes scored the same or lower. 75% of the nursing homes scored higher.
<b>50<sup>th</sup> percentile (or median)</b> This score represents the middle of the distribution of nursing homes.	50% of the nursing homes scored the same or lower. 50% of the nursing homes scored higher.
<b>75<sup>th</sup> percentile</b> This score represents higher scoring nursing homes.	75% of the nursing homes scored the same or lower. 25% of the nursing homes scored higher.
<b>90<sup>th</sup> percentile</b> This score represents the highest scoring nursing homes.	90% of the nursing homes scored the same or lower. 10% of the nursing homes scored higher.

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

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

**Table 6-2. Sample Percentile Statistics**

Survey Item	Survey Item % Positive Response							
	Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max	
Item 1	8%	10%	25%	35%	49%	62%	96%	
If your nursing home's score is 55%, your score falls here:							↑	
If your nursing home's score is 65%, your score falls here:							↑	

- If your nursing home's score is 55 percent positive, it falls above the 75<sup>th</sup> percentile (but below the 90<sup>th</sup>), meaning that your nursing home scored higher than at least 75 percent of the nursing homes in the database.
- If your nursing home's score is 65 percent positive, it falls above the 90<sup>th</sup> percentile, meaning your nursing home scored higher than at least 90 percent of the nursing homes in the database.

## Composite and Item-Level Comparative Tables

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

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

The comparative results in Tables 6-3 and 6-4 show considerable variability in the range of nursing home scores (lowest to highest) across the 12 patient safety culture composites. The standard deviation around the average percent positive scores ranged from 9.4 percent to 14.9 percent on the composites and ranged from 8.15 percent to 18.33 percent on the items.

Willingness to recommend one's nursing home, shown in Table 6-5, had a wide range of response. In one nursing home, 28 percent of respondents indicated that they were willing to recommend their nursing home, yet at another nursing home, 100 percent did.

Overall ratings on resident safety also had a wide range of response, as shown in Table 6-6, from at least one nursing home where none of the respondents (0 percent) provided their unit with a rating of "Excellent" to a nursing home where 82 percent did.



**Table 6-3. Composite-Level Comparative Results for the 2011 Database**

Patient Safety Culture Composites	Average % Positive		Composite % Positive Response						
	s.d.	Min	10th %ile	25th %ile	Median/ 50th %ile	75th %ile	90th %ile	Max	
<b>1. Overall Perceptions of Resident Safety</b>	86%	10.68%	39%	73%	81%	88%	94%	96%	100%
<b>2. Feedback and Communication About Incidents</b>	84%	9.40%	52%	70%	79%	85%	90%	94%	99%
<b>3. Supervisor Expectations &amp; Actions Promoting Resident Safety</b>	79%	10.46%	47%	65%	72%	80%	86%	93%	100%
<b>4. Organizational Learning</b>	72%	13.09%	35%	53%	63%	73%	81%	88%	97%
<b>5. Training &amp; Skills</b>	71%	12.59%	34%	53%	63%	72%	80%	86%	96%
<b>6. Management Support for Resident Safety</b>	69%	13.53%	30%	49%	59%	71%	79%	84%	95%
<b>7. Teamwork</b>	64%	14.90%	23%	43%	54%	65%	75%	82%	94%
<b>8. Compliance With Procedures</b>	64%	12.37%	26%	46%	55%	64%	72%	79%	93%
<b>9. Handoffs</b>	61%	14.37%	14%	43%	53%	62%	71%	79%	94%
<b>10. Communication Openness</b>	56%	14.89%	18%	34%	46%	56%	66%	75%	92%
<b>11. Staffing</b>	52%	13.87%	20%	35%	42%	52%	61%	69%	92%
<b>12. Nonpunitive Response to Mistakes</b>	51%	12.68%	25%	35%	41%	51%	60%	68%	84%

**Table 6-4. Item-Level Comparative Results for the 2011 Database (Page 1 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
<b>1.</b>	<b>Overall Perceptions of Resident Safety</b>									
1.	Residents are well cared for in this nursing home. (D1)	86%	11.22%	39%	71%	80%	88%	94%	98%	100%
2.	This nursing home does a good job keeping residents safe. (D6)	84%	11.46%	39%	68%	79%	87%	93%	96%	100%
3.	This nursing home is a safe place for residents. (D8)	86%	10.62%	40%	73%	80%	89%	95%	97%	100%
<b>2.</b>	<b>Feedback and Communication About Incidents</b>									
1.	When staff report something that could harm a resident, someone takes care of it. (B4)	80%	11.97%	41%	61%	73%	81%	89%	93%	100%
2.	In this nursing home, we talk about ways to keep incidents from happening again. (B5)	83%	11.14%	36%	68%	77%	85%	91%	95%	100%
3.	Staff tell someone if they see something that might harm a resident. (B6)	87%	8.15%	62%	76%	83%	88%	93%	96%	100%
4.	In this nursing home, we discuss ways to keep residents safe from harm. (B8)	84%	10.21%	53%	69%	78%	87%	92%	95%	100%
<b>3.</b>	<b>Supervisor Expectations &amp; Actions Promoting Resident Safety</b>									
1.	My supervisor listens to staff ideas and suggestions about resident safety. (C1)	79%	11.25%	45%	65%	71%	80%	88%	93%	100%
2.	My supervisor says a good word to staff who follow the right procedures. (C2)	73%	12.52%	36%	55%	65%	73%	81%	90%	100%
3.	My supervisor pays attention to safety problems in this nursing home. (C3)	85%	10.38%	41%	71%	80%	87%	93%	96%	100%

**Note:** The item's survey location is shown after the item text. 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 2011 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
<b>4.</b>	<b>Organizational Learning</b>									
1.	This nursing home lets the same mistakes happen again and again. (D3R)	67%	16.68%	23%	43%	57%	69%	79%	88%	100%
2.	It is easy to make changes to improve resident safety in this nursing home. (D4)	66%	13.22%	29%	47%	58%	68%	75%	82%	96%
3.	This nursing home is always doing things to improve resident safety. (D5)	78%	13.69%	33%	56%	71%	80%	88%	93%	100%
4.	When this nursing home makes changes to improve resident safety, it checks to see if the changes worked. (D10)	75%	14.08%	31%	55%	65%	77%	86%	91%	100%
<b>5.</b>	<b>Training &amp; Skills</b>									
1.	Staff get the training they need in this nursing home. (A7)	75%	13.90%	34%	58%	68%	77%	86%	92%	100%
2.	Staff have enough training on how to handle difficult residents. (A11)	59%	15.10%	15%	39%	49%	59%	70%	78%	96%
3.	Staff understand the training they get in this nursing home. (A13)	78%	12.10%	36%	60%	70%	80%	86%	93%	100%
<b>6.</b>	<b>Management Support for Resident Safety</b>									
1.	Management asks staff how the nursing home can improve resident safety. (D2)	68%	14.12%	22%	48%	59%	70%	78%	86%	96%
2.	Management listens to staff ideas and suggestions to improve resident safety. (D7)	67%	15.21%	23%	47%	57%	69%	79%	86%	98%
3.	Management often walks around the nursing home to check on resident care. (D9)	72%	15.64%	25%	50%	62%	72%	84%	90%	100%

**Note:** The item's survey location is shown after the item text. 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 2011 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
<b>7.</b>	<b>Teamwork</b>									
1.	Staff in this nursing home treat each other with respect. (A1)	65%	16.57%	21%	43%	55%	66%	78%	85%	98%
2.	Staff support one another in this nursing home. (A2)	65%	15.99%	21%	44%	54%	67%	77%	85%	100%
3.	Staff feel like they are part of a team. (A5)	62%	16.39%	19%	39%	51%	63%	74%	83%	96%
4.	When someone gets really busy in this nursing home, other staff help out. (A9)	64%	14.70%	22%	45%	54%	64%	75%	81%	100%
<b>8.</b>	<b>Compliance With Procedures</b>									
1.	Staff follow standard procedures to care for residents. (A4)	82%	11.01%	36%	68%	76%	83%	90%	94%	100%
2.	Staff use shortcuts to get their work done faster. (A6R)	44%	14.87%	11%	26%	34%	43%	54%	64%	82%
3.	To make work easier, staff often ignore procedures. (A14R)	65%	14.55%	27%	45%	55%	65%	75%	83%	100%
<b>9.</b>	<b>Handoffs</b>									
1.	Staff are told what they need to know before taking care of a resident for the first time. (B1)	66%	16.02%	15%	47%	57%	67%	76%	86%	100%
2.	Staff are told right away when there is a change in a resident's care plan. (B2)	55%	16.69%	9%	34%	43%	56%	66%	76%	91%
3.	We have all the information we need when residents are transferred from the hospital. (B3)	54%	15.56%	9%	33%	44%	55%	64%	71%	100%
4.	Staff are given all the information they need to care for residents. (B10)	71%	14.01%	15%	55%	63%	72%	81%	88%	100%

**Note:** The item's survey location is shown after the item text. 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 2011 Database (Page 4 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		
<b>10. Communication Openness</b>												
1.	Staff ideas and suggestions are valued in this nursing home. (B7)	59%	15.40%	19%	38%	48%	60%	70%	78%	94%		
2.	Staff opinions are ignored in this nursing home. (B9R)	51%	16.11%	6%	31%	39%	51%	63%	71%	93%		
3.	It is easy for staff to speak up about problems in this nursing home. (B11)	57%	15.51%	19%	36%	46%	58%	68%	77%	100%		
<b>11. Staffing</b>												
1.	We have enough staff to handle the workload. (A3)	41%	18.33%	0%	18%	27%	41%	54%	64%	94%		
2.	Staff have to hurry because they have too much work to do. (A8R)	35%	15.63%	6%	15%	24%	33%	43%	57%	86%		
3.	Residents' needs are met during shift changes. (A16)	64%	15.09%	25%	41%	55%	66%	74%	84%	100%		
4.	It is hard to keep residents safe here because so many staff quit their jobs. (A17)	67%	16.35%	21%	44%	55%	68%	79%	86%	100%		
<b>12. Nonpunitive Response to Mistakes</b>												
1.	Staff are blamed when a resident is harmed. (A10R)	42%	13.78%	6%	25%	32%	41%	50%	59%	81%		
2.	Staff are afraid to report their mistakes. (A12R)	51%	15.08%	17%	33%	41%	50%	63%	72%	89%		
3.	Staff are treated fairly when they make mistakes. (A15)	56%	14.49%	18%	35%	46%	56%	66%	75%	100%		
4.	Staff feel safe reporting their mistakes. (A18)	55%	14.82%	20%	35%	43%	57%	66%	73%	90%		

**Note:** The item's survey location is shown after the item text. 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 Willingness To Recommend Nursing Home—2011 Database Comparative Results**

Willingness To Recommend Nursing Home	Average %	s.d.	Percentage of Responses						
			Min	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Max
<b>Yes</b>	76%	16.44%	28%	53%	68%	78%	89%	96%	100%
<b>Maybe</b>	19%	12.97%	0%	4%	9%	18%	28%	37%	62%
<b>No</b>	4%	5.54%	0%	0%	0%	3%	6%	11%	31%

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

**Table 6-6. Average Distribution of Overall Rating on Resident Safety—2011 Database Comparative Results**

Work Area/Unit Resident Safety Grade	Average %	s.d.	Percentage of Responses						
			Min	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Max
<b>Excellent</b>	25%	15.41%	0%	6%	13%	23%	33%	46%	82%
<b>Very Good</b>	37%	11.60%	4%	25%	29%	35%	44%	52%	73%
<b>Good</b>	26%	10.85%	0%	11%	18%	27%	34%	39%	55%
<b>Poor</b>	10%	9.27%	0%	0%	4%	7%	15%	23%	52%
<b>Failing</b>	2%	3.06%	0%	0%	0%	0%	3%	5%	18%

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

## **Appendixes A and B: Overall Results by Nursing Home and Respondent Characteristics**

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

### Appendix A: Results by Nursing Home Characteristics

- Bed size
- Ownership

### Appendix B: Results by Respondent Characteristics

- Job title
- Work area
- Interaction with residents
- Shift worked most often

The breakout tables are included as appendixes because there are a large number of them. Highlights of the findings from the breakout tables in these appendixes are provided on the following pages. The appendixes are available on the Web at: [www.ahrq.gov/qual/nhsurvey11/](http://www.ahrq.gov/qual/nhsurvey11/).

## Highlights from Appendix A: Overall Results by Nursing Home Characteristics

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

- Small nursing homes (*49 or fewer beds*) had the highest average percent positive response on 10 of the 12 patient safety culture composites.
- Small nursing homes (*49 or fewer beds*) had the highest percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (88 percent for *49 or fewer beds* versus 74 percent for *100-199 beds*).
- Small nursing homes (*49 or fewer beds*) had the highest percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (77 percent for *49 or fewer beds* versus 59 percent for *100-199 beds* and *200 beds or more*).

### Ownership (Tables A-5, A-7, A-8)

- *Nonprofit/government* nursing homes had a higher average percent positive response than *for profit* nursing homes on all 12 patient safety culture composites.
- *Nonprofit/government* nursing homes had a higher percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (80 percent) than *for profit* nursing homes (72 percent).
- *Nonprofit/government* nursing homes had a higher percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (66 percent) than *for profit* nursing homes (57 percent).

## Highlights from Appendix B: Overall Results by Respondent Characteristics

### Job Title (Tables B-1, B-3, B-4)

- *Administrators/Managers* and *Physicians* had the highest average percent positive response across the patient safety culture composites (79 percent); *Nursing Assistants/Aides* had the lowest (63 percent).
- *Administrators/Managers* had the highest percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (93 percent); *Nursing Assistants/Aides* had the lowest (72 percent).
- *Administrators/Managers* had the highest percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (81 percent); *Other Providers* had the lowest (56 percent).

### Work Area (Tables B-5, B-7, B-8)

- The results for the patient safety culture composites and willingness to recommend were quite similar across work areas.
- Respondents who indicated they worked in *Many different areas in this nursing home/No specific area or unit* had the highest percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (63 percent); *Alzheimer’s/Dementia Unit* and *Rehab Unit* had the lowest (58 percent).



### **Interaction With Residents** (Tables B-9, B-11, B-12)

- Respondents *without* direct interaction with residents were more positive on 11 of the 12 patient safety composites than those *with* direct interaction with residents. The average response across all 12 composites was 73 percent positive for respondents *without* direct interaction with residents and 66 percent positive for respondents *with* direct interaction with residents.
- Respondents *without* direct interaction with residents had a higher percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (81 percent) than respondents *with* direct interaction with residents (75 percent).
- Respondents *without* direct interaction with residents had a higher percentage of respondents who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (69 percent) than respondents *with* direct interaction with residents (60 percent).

### **Shift Worked Most Often** (Tables B-13, B-15, B-16)

- Respondents working *day shifts* had the highest average percent positive response on 11 of the 12 patient safety culture composites. The average response across all 12 composites was 69 percent positive for respondents working *days* versus 62 percent positive for respondents working *nights*.
- Respondents working *day shifts* had the highest percentage who indicated they would tell their friends that this is a safe nursing home for their family (79 percent for respondents working *days* versus 74 percent for respondents working *evenings* and 70 percent for respondents working *nights*).
- Respondents working *day shifts* had the highest percentage who gave their nursing home an overall rating on resident safety of “Excellent” or “Very Good” (65 percent for respondents working *days* versus 60 percent for respondents working *evenings* and 51 percent for respondents working *nights*).



## Chapter 7. 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 nursing homes guidance on next steps to take to turn their survey results into actual patient safety culture improvement.

### **Seven Steps of Action Planning**

Administering the nursing home survey can be considered an “intervention,” a means of educating staff and building awareness about issues of concern related to resident 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 (Chart 7-1) are provided to help your nursing home go beyond simply conducting a survey to realizing patient safety culture change.

The seven steps of action planning are:

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

## **Step #1: Understand Your Survey Results**

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

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

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

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

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

- Did your nursing home have an increase in its scores on any of the survey composites or items?
- Did your nursing home have a decrease in its scores?
- When you consider the types of resident safety actions that your nursing home 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 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 nursing home shows your commitment to the survey and improvement process.

Use survey feedback as an impetus for change. Feedback can be provided at the nursing home level and/or at the work area or unit level. However, to ensure respondent anonymity/confidentiality, it is important to report data only if there are enough respondents in a particular category or group. As a rule of thumb, reporting data is not recommended if there are fewer than three respondents in a category. For example, if there are only two respondents in a work area, that work area's data should not be reported separately because there are too few respondents to provide complete assurance of anonymity/confidentiality.

Summaries of the survey results should be distributed throughout the nursing home 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 nursing home. 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. Nursing home-wide, department-based, or unit-based action plans can be developed. Major goals can be established as nursing home-wide action plans. Unit-specific goals can be fostered by encouraging and empowering staff to develop action plans at the unit level.

Encourage action plans that are “SMART”:

- Specific.
- Measurable.
- Achievable.
- Relevant.
- Time bound.

When deciding whether a particular action plan or initiative would be a good fit in your facility, you may find that the guide *Will It Work Here? A Decisionmaker’s Guide to Adopting Innovations* (Brach, Lenfestey, Roussel, et al., 2008) is a useful resource (available at: [www.innovations.ahrq.gov/guide/InnovationAdoptionGuide.pdf](http://www.innovations.ahrq.gov/guide/InnovationAdoptionGuide.pdf)). The guide helps users answer the four overarching questions:

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

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

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

#### **Step #4: Communicate Action Plans and Deliverables**

Once action plans have been developed, the plans, deliverables, and expected outcomes of the plans need to be communicated. Those directly involved or affected will need to know their roles and responsibilities, as well as the timeframe for implementation. Action plans and goals should also be shared widely so that their transparency encourages further accountability and demonstrates the nursing home-wide commitments being made in response to the survey results.

At this step it is important for senior nursing home 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.

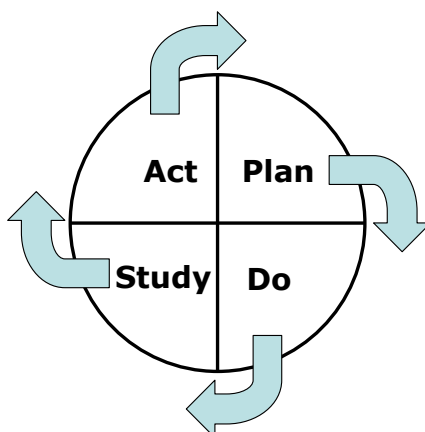
#### **Step #5: Implement Action Plans**

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 (2006) suggests, actions do not have to be major permanent changes. In fact, it is worthwhile to strive to implement easier smaller changes that are likely to have a positive impact rather than big changes with unknown probability of success.

The “Plan-Do-Study-Act” cycle (Langley, Nolan, Nolan, et al., 1996) (Chart 7-2) is a pilot-study approach to change that involves first developing a small-scale plan to test a proposed change (Plan), carrying out the plan (Do), observing and learning from the consequences (Study), and determining what modifications should be made to the plan (Act). Implementation of action plans can occur on a small scale, within a single unit, to examine impact and refine plans before rolling out the changes on a larger scale to other units or nursing homes.

**Chart 7-1. Plan-Do-Study-Act Cycle**



### **Step #6: Track Progress and Evaluate Impact**

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

### **Step #7: Share What Works**

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





## References

Agency for Healthcare Research and Quality. Hospital Survey on Patient Safety Culture. Available at: [www.ahrq.gov/qual/patientsafetyculture](http://www.ahrq.gov/qual/patientsafetyculture).

Brach C, Lenfestey N, Roussel A, et al. *Will It Work Here? A Decisionmaker's Guide to Adopting Innovations*. (Prepared by RTI International under Contract No. 233-02-0090.) Rockville, MD: Agency for Healthcare Research and Quality; September 2008. AHRQ Publication No. 08-0051. Available at: [www.innovations.ahrq.gov/guide/InnovationAdoptionGuide.pdf](http://www.innovations.ahrq.gov/guide/InnovationAdoptionGuide.pdf).

Church AH, Waclawski J. Designing and using organizational surveys: a seven-step process. San Francisco: Jossey-Bass; 1998.

Institute for Healthcare Improvement. Improvement methods: the Plan-Do-Study-Act (PDSA) cycle. Washington, DC: Institute for Healthcare Improvement; 2006. Available at: <http://www.ihl.org/IHI/Topics/Improvement/ImprovementMethods/HowToImprove>.

Langley C, Nolan K, Nolan T, et al. The improvement guide: a practical approach to improving organizational performance. San Francisco: Jossey-Bass; 1996.



## Notes: Description of Data Cleaning and Calculations

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

### Data Cleaning

Each participating nursing home was asked to submit cleaned individual-level survey data. As an additional check, once the data were submitted, response frequencies were automatically run on each nursing home's data to look for out-of-range values, missing variables, or other data anomalies. When data problems were found, data submitters were required to make corrections and resubmit their data. All submitters were shown a copy of their data frequencies to verify that the dataset received was correct.

### Response Rates

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

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

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

**Denominator** = The total number of surveys distributed minus ineligibles. Ineligibles include deceased individuals and those who were not employed at the nursing home 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 missing were excluded from the nursing home's numerator. Nursing homes were included in the database only if they had a numerator of at least 10 after this data cleaning step.

### 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 (*Handoffs, Feedback and Communication About*

*Incidents, and Communication Openness*), while the other 9 composites use the agreement response option.

### Item-Level Percent Positive Response

Both positively worded items (such as “Staff support one another in this nursing home”) and negatively worded items (such as “Staff use shortcuts to get their work done faster”) 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 nursing home 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 “Staff support one another in this nursing home,” if 50 percent of respondents within a nursing home *Strongly agree* and 25 percent *Agree*, the item-level percent positive response for that nursing home would be  $50\% + 25\% = 75\%$  positive.

- **For negatively worded items**, percent positive response is the combined percentage of respondents within a nursing home 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 “Staff use shortcuts to get their work done faster,” if 60 percent of respondents within a nursing home *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 staff use shortcuts to get their work done faster).

### 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 nursing home by averaging the percent positive response on the items within a composite. For example, for a three-item composite, if the item-level percent positive responses were 50 percent, 55 percent, and 60 percent, the nursing home’s composite-level percent positive response would be the average of these three percentages, or 55% positive.

### Item and Composite Percent Positive Scores

To calculate your nursing home’s composite score, simply average the percentage of positive response to each item in the composite. Here is an example of computing a composite score for *Nonpunitive Response to Mistakes*:

1. There are four items in this composite—two are positively worded (items #A15 and #A18) and two are negatively worded (items #A10 and #A12). Keep in mind that *disagreeing* with a negatively worded item indicates a *positive* response.
2. Calculate the percentage of positive responses at the item level. (See example in Table 1.)

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

Four Items Measuring "Nonpunitive Response to Mistakes"	For Positively Worded Items, # of "Strongly Agree" or "Agree" Responses	For Negatively Worded Items, # of "Strongly Disagree" or "Disagree" Responses	Total # of Responses to Item	Percent Positive Response on Item
<b>Item A10: negatively worded</b>				
"Staff are blamed when a resident is harmed"	NA*	120	260	120/260=46%
<b>Item A12: negatively worded</b>				
"Staff are afraid to report their mistakes"	NA*	130	250	130/250=52%
<b>Item A15: positively worded</b>				
"Staff are treated fairly when they make mistakes"	110	NA*	240	110/240=46%
<b>Item A18: positively worded</b>				
"Staff feel safe reporting their mistakes"	140	NA*	250	140/250= 56%
<b>Composite Score % Positive = (46% + 52% + 46% + 56%) / 4 = 50%</b>				

\*NA = Not applicable.

In this example, there were four items with percent positive response scores of 46 percent, 52 percent, 46 percent, and 56 percent. Averaging these item-level percent positive scores results in a composite score of .50, or 50 percent, on Nonpunitive Response to Mistakes. 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 nursing home's percent positive response for each of the 12 patient safety culture composites, you can compare your results with the composite-level results from the 226 database nursing homes.

## 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 nursing homes from lowest to highest. The next step is to multiply the number of nursing homes (n) by the percentile of interest (p), which in our case would be the 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup>, or 90<sup>th</sup> percentile.

For example, to calculate the 10<sup>th</sup> percentile, one would multiply 226 (the total number of nursing homes) by .10 (10<sup>th</sup> percentile). The product of  $n \times p$  is equal to  $j + g$ , where  $j$  is the integer and  $g$  is the number after the decimal. If  $g$  equals 0, the percentile is equal to the percent positive value of the nursing home in the  $j^{\text{th}}$  position plus the percent positive value of the nursing home in the  $j^{\text{th}} + 1$  position, divided by 2  $[(X_{(j)} + X_{(j+1)})/2]$ . If  $g$  is not equal to 0, the percentile is equal to the percent positive value of the nursing home in the  $j^{\text{th}} + 1$  position.

The following examples show how the 10<sup>th</sup> and 50<sup>th</sup> percentiles would be computed using a sample of percent positive scores from 12 nursing homes (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**

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

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

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

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

- For the 50<sup>th</sup> percentile, we would first multiply the number of nursing homes 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 50<sup>th</sup> percentile score is equal to the percent positive value of the nursing home in the  $j^{\text{th}}$  position plus the percent positive value of the nursing home in the  $j^{\text{th}} + 1$  position, divided by 2:
  - $j$  equals 6.
  - The 50<sup>th</sup> percentile equals the average of the nursing homes in the 6<sup>th</sup> and 7<sup>th</sup> positions  $(64\% + 66\%)/2 = 65\%$ .

**U.S. Department of Health and Human Services**  
Agency for Healthcare Research and Quality  
540 Gaither Road  
Rockville, MD 20850



AHRQ Publication No. 11-0071  
August 2011