# SURVEYS ON PATIENT SAFETY CULTURE<sup>®</sup>(SOPS)<sup>®</sup>



## Nursing Home Survey: 2025 User Database Report







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### Surveys on Patient Safety Culture<sup>®</sup> (SOPS<sup>®</sup>) Nursing Home Survey: 2025 User Database Report Part I

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step-by-step guidance on how to develop an action plan to improve patient safety culture, available at <u>www.ahrq.gov/sops/resources/planning-tool/index.html</u>



# Overview of Database Report

In response to requests from nursing homes interested in comparing results on the Surveys on Patient Safety Culture<sup>®</sup> (SOPS<sup>®</sup>) Nursing Home Survey, the Agency for Healthcare Research and Quality (AHRQ) established the SOPS Nursing Home Database. The SOPS Database aggregates the data to facilitate comparisons of SOPS survey results. This report presents statistics (averages, standard deviations, minimum and maximum scores, and percentiles) on the patient safety culture composite measures and items from the SOPS Nursing Home Survey.

Part II of this report (Appendixes A and B) presents data tables showing results by the following nursing home and respondent characteristics:

#### **Appendix A: Results by Nursing Home Characteristics**

- Bed size
- Ownership
- Geographic region

#### **Appendix B: Results by Respondent Characteristics**

- Job title
- Work area
- Interaction with residents
- Shift worked most often
- Tenure in nursing home

The appendixes in Part II are available online at <u>https://www.ahrq.gov/sops/databases/nursing-home</u>.



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Organizational culture refers to the beliefs, values, and norms shared by staff throughout their organization that influence their actions and behaviors. Patient safety culture is the extent to which these beliefs, values, and norms support and promote patient safety. Patient safety culture can be measured by determining what is rewarded, supported, expected, and accepted in an organization as it relates to patient safety (see Figure 1).

#### Figure 1. Definition of Patient Safety Culture





### **Survey Content**

The AHRQ SOPS Nursing Home Survey includes 42 items that make up 12 composite measures. Table 1-1 defines each composite measure.

| Table 1-1. | SOPS Nursing Home Survey Composite Measures and Definitions |
|------------|---|
|            |   |

| SOPS Nursing Home<br>Composite Measures   | Definition: The extent to which   | Number<br>of Items |  |  |  |
|---|---|--------------------|--|--|--|
| Communication Openness  | Staff speak up about problems and their ideas and suggestions are valued.   | 3                  |  |  |  |
| Compliance With<br>Procedures   | Staff follow standard procedures to care for residents and do not use shortcuts to get their work done faster.  |                    |  |  |  |
| Feedback and<br>Communication About<br>Incidents  | Staff discuss ways to keep residents safe, tell someone if they see<br>something that might harm a resident, and talk about ways to keep<br>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. |   |                    |  |  |  |
| Management Support for<br>Resident SafetyNursing home management provides a work climate that promotes<br>resident safety and shows that resident safety is a top priority.                                     |   |                    |  |  |  |
| Nonpunitive Response to<br>Mistakes   |   |                    |  |  |  |
| Organizational Learning   | There is a learning culture that facilitates making changes to improve resident safety and evaluates changes for effectiveness.   | 4                  |  |  |  |
| Overall Perceptions of<br>Resident Safety   | Residents are well cared for and safe.  | 3                  |  |  |  |
| Staffing  | There are enough staff to handle the workload, meet residents' needs during shift changes, and keep residents safe.   | 4                  |  |  |  |
| Supervisor Expectations and<br>Actions Promoting Resident<br>Safety   | Supervisors listen to staff ideas and suggestions about resident safety, praise staff who follow the right procedures, and pay attention to safety problems.                | 3                  |  |  |  |
| Teamwork  | Staff treat one another with respect, support one another, and feel like they are part of a team.   | 4                  |  |  |  |
| 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.                      | 3                  |  |  |  |

In addition to items that make up these composite measures, the survey includes two singleitem measures asking respondents if they would tell friends that their nursing home is safe for their family (also called "willingness to recommend") and to provide an overall rating on resident safety for their nursing home. Respondents are also asked seven background questions.



## 2 Survey Administration Statistics

This report provides results from 107 nursing homes and 4,411 respondents. Of the 107 nursing homes, 50 nursing homes were carried over from the 2023 Nursing Home Database and the remaining 57 nursing homes submitted data to the 2025 Nursing Home Database (Table 2-1). Participating nursing homes administered the SOPS Nursing Home Survey from May 2022 through October 2024.

This chapter presents descriptive information on the number of nursing homes and survey respondents (Table 2-1), overall and average response rates (Table 2-2), and modes of survey administration (Table 2-3).

#### **Highlights**





### Table 2-1.Number of Participating Nursing Homes and Respondents — 2025 SOPS<br/>Nursing Home Database

| Overall Statistic       | Retained From the 2023<br>Nursing Home Database | New Data Submitted to the 2025 SOPS Database | Total |
|-------------------------|---|--|-------|
| Number of nursing homes | 50  | 57   | 107   |
| Number of respondents   | 2,521   | 1,890  | 4,411 |

#### Table 2-2. Response Statistics — 2025 SOPS Nursing Home Database

| Overall Response Information  | Statistic |
|---|-----------|
| Number of nursing homes   | 107       |
| Number of respondents   | 4,411     |
| Number of surveys distributed   | 13,046    |
| Overall response rate   | 34%       |
| Average Response Rate Information   | Statistic |
| Average number of respondents per nursing home (range: 10 to 181)         | 41        |
| Average number of surveys distributed per nursing home (range: 10 to 712) | 122       |
| Average nursing home response rate (range: 5% to 100%)                    | 42%       |

### Table 2-3.Survey Administration Mode Statistics — 2025 SOPS Nursing Home<br/>Database

|                            | Nursing | Homes   | Respo  | ndents  | Average<br>Response Rate |
|----------------------------|---------|---------|--------|---------|--------------------------|
| Survey Administration Mode | Number  | Percent | Number | Percent | Percent                  |
| Paper only                 | 39      | 36%     | 1,991  | 45%     | 53%                      |
| Web only                   | 67      | 63%     | 2,239  | 51%     | 35%                      |
| Mixed mode (paper and web) | 1       | 1%      | 181    | 4%      | 47%                      |
| Total                      | 107     | 100%    | 4,411  | 100%    |                          |

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





## **3 Nursing Home Characteristics**

This chapter presents information about the characteristics of nursing homes included in the 2025 SOPS Nursing Home Database, including bed size, ownership, and geographic region (Table 3-1).

To provide an understanding of the database nursing homes by bed size, ownership, and geographic region, the distribution of the Centers for Medicare & Medicaid Services (CMS) Nursing Home Compare Database<sup>1</sup> nursing homes corresponding to each characteristic is shown.

#### **Highlights**



<sup>&</sup>lt;sup>1</sup> CMS Nursing Home Compare data were obtained from Nursing Home Compare, available at <u>https://data.medicare.gov/data/nursing-home-compare</u> (accessed February 14, 2024).



### Table 3-1.2025 SOPS Nursing Home Database Characteristics Compared With CMS<br/>Nursing Home Compare Nursing Homes

| Nursing Home Characteristics | CMS Compare<br>Nursing Homes<br>Home Characteristics (N = 14,814) |                | Nursing | base<br>Homes<br>107) | Database<br>Respondents<br>(N=4,411) |         |  |
|------------------------------|---|----------------|---------|-----------------------|--------------------------------------|---------|--|
| Bed Size                     | Number  | Number Percent |         | Percent               | Number                               | Percent |  |
| 1-49 beds                    | 1,710   | 12%            | 15      | 14%                   | 310                                  | 7%      |  |
| 50-99 beds                   | 5,679   | 38%            | 45      | 42%                   | 1,198                                | 27%     |  |
| 100-199 beds                 | 6,579   | 44%            | 42      | 39%                   | 2,428                                | 55%     |  |
| 200 or more beds             | 846   | 6%             | 5       | 5%                    | 475                                  | 11%     |  |
| Ownership                    | Number  | Percent        | Number  | Percent               | Number                               | Percent |  |
| For profit                   | 10,760  | 73%            | 23      | 22%                   | 1,051                                | 24%     |  |
| Nonprofit                    | 3,102   | 21%            | 74      | 69%                   | 2,651                                | 60%     |  |
| Government                   | 952   | 6%             | 10      | 9%                    | 709                                  | 16%     |  |
| Geographic Region            | Number  | Percent        | Number  | Percent               | Number                               | Percent |  |
| Northeast                    | 2,420   | 16%            | 20      | 19%                   | 1,374                                | 31%     |  |
| Midwest                      | 4,764   | 32%            | 47      | 44%                   | 1,315                                | 30%     |  |
| South                        | 5,321   | 36%            | 31      | 29%                   | 1,522                                | 35%     |  |
| West                         | 2,309   | 16%            | 9       | 8%                    | 200                                  | 5%      |  |

Note: Percentages may not add to 100 due to rounding. States are categorized into regions as follows:

- Northeast: CT, MA, ME, NH, NJ, NY, PA, RI, VT
- Midwest: IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI
- South: AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, PR, SC, TN, TX, VA, VI, WV
- West: AK, AS, AZ, CA, CO, GU, HI, ID, MH, MP, MT, NM, NV, OR, UT, WA, WY

# 4 Respondent Characteristics

This chapter describes the characteristics of the 4,411 respondents in the 2025 SOPS Nursing Home Database.

#### **Highlights**



## Table 4-1.2025 SOPS Nursing Home Database Respondent Characteristics<br/>(Page 1 of 2)

| Respondent Characteristics                             |               | Respo  | ndents  |
|--|---------------|--------|---------|
| Job Title  |               | Number | Percent |
| Administrator/Manager                                  |               | 440    | 11%     |
| Administrative Support Staff                           |               | 329    | 8%      |
| Direct Care Staff                                      |               | 501    | 13%     |
| Licensed Nurse   |               | 748    | 19%     |
| Nursing Assistant/Aide                                 |               | 1,078  | 27%     |
| Physician (M.D., D.O.)                                 |               | 8      | <1%     |
| Other Provider   |               | 41     | 1%      |
| Support Staff  |               | 701    | 18%     |
| Other  |               | 147    | 4%      |
|  | Total         | 3,993  | 100%    |
|  | Missing       | 418    |         |
|  | Overall Total | 4,411  |         |
| Work Area  |               | Number | Percent |
| Alzheimer's/dementia unit                              |               | 227    | 6%      |
| Many different areas or units/no specific area or unit |               | 1,604  | 41%     |
| Rehab unit   |               | 306    | 8%      |
| Skilled nursing unit                                   |               | 1,071  | 27%     |
| Other area or unit                                     |               | 711    | 18%     |
|  | Total         | 3,919  | 100%    |
|  | Missing       | 492    |         |
|  | Overall Total | 4,411  |         |
| Tenure in Nursing Home                                 |               | Number | Percent |
| Less than 1 year                                       |               | 837    | 21%     |
| 1 to 2 years   |               | 762    | 19%     |
| 3 to 5 years   |               | 779    | 19%     |
| 6 to 10 years  |               | 632    | 16%     |
| 11 years or more                                       |               | 1,021  | 25%     |
|  | Total         | 4,031  | 100%    |
|  | Missing       | 380    |         |
|  | Overall Total | 4,411  |         |
| Hours Worked per Week in Nursing Home                  |               | Number | Percent |
| 15 or fewer  |               | 154    | 4%      |
| 16 to 24   |               | 333    | 8%      |
| 25 to 40   |               | 2,240  | 56%     |
| More than 40   |               | 1,306  | 32%     |
|  | Total         | 4,033  | 100%    |
|  | Missing       | 378    |         |
|  | Overall Total | 4,411  |         |



## Table 4-1.2025 SOPS Nursing Home Database Respondent Characteristics<br/>(Page 2 of 2)

| Respondent Characteristics   | Respo  | ndents  |
|--|--------|---------|
| Shift Worked Most Often  | Number | Percent |
| Days   | 2,946  | 74%     |
| Evenings   | 561    | 14%     |
| Nights   | 467    | 12%     |
| Total  | 3,974  | 100%    |
| Missing  | 437    |         |
| Overall Total  | 4,411  |         |
| Staffing Agency Status   | Number | Percent |
| Paid by a staffing agency  | 180    | 4%      |
| Not paid by a staffing agency  | 3,837  | 96%     |
| Total  | 4,017  | 100%    |
| Missing  | 394    |         |
| Overall Total  | 4,411  |         |
| Interaction With Residents   | Number | Percent |
| YES, I typically have direct interaction or contact with residents       | 2,700  | 67%     |
| NO, I typically do NOT have direct interaction or contact with residents | 1,333  | 33%     |
| Total  | 4,033  | 100%    |
| Missing  | 378    |         |
| Overall Total  | 4,411  |         |

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





This chapter presents overall findings from the 2025 SOPS Nursing Home Database. We present the average percentage of positive responses for each of the survey's composite measures and items, summarized for all database nursing homes. Reporting the average for all nursing homes ensures each nursing home's scores receive equal weight, regardless of the nursing home's size. We do not report the percentage of positive responses summarized for all respondents, as this approach would give greater weight to those nursing homes with more staff. Reporting the data at the nursing home level, rather than the respondent level, is important because culture is considered to be a group characteristic, not an individual characteristic.

#### **Highlights**









### **Composite Measure and Item Charts**

This section provides the overall composite measure and item results. The methods for calculating the percent positive scores at the composite measure and item levels are described in the Notes section of this report.

#### **Composite Measure Results**

**Chart 5-1** shows the average percent positive response for each of the 12 SOPS composite measures, summarized for all nursing homes in the database. The SOPS composite measures are shown in order from the highest average percent positive response to the lowest.

#### **Item Results**

**Chart 5-2** shows the average percent positive response for each of the 42 survey items. Items are listed in their respective composite measure, grouped by positively and negatively worded items and then in the order in which they appear in the survey.

For more information on how the percent positive response is calculated for positively and negatively worded items, visit the Notes section in this report.

#### Willingness To Recommend

**Chart 5-3** shows results for the item that asks respondents whether they would tell their friends that this is a safe nursing home for their family.

#### **Overall Rating on Resident Safety**

Chart 5-4 shows results for overall rating on resident safety in the nursing home.



#### Chart 5-1. Composite Measure Results Average Percent Positive Response — 2025 SOPS Nursing Home Database





#### Chart 5-2. Item Results Average Percent Positive Response — 2025 SOPS Nursing Home Database (Page 1 of 4)

## 1. Feedback and Communication About Incidents

When staff report something that could harm a resident, someone takes care of it. (Item B4)

In this nursing home, we talk about ways to keep incidents from happening again. (Item B5)

Staff tell someone if they see something that might harm a resident. (Item B6)

In this nursing home, we discuss ways to keep residents safe from harm. (Item B8)

#### 2. Overall Perceptions of Resident Safety

Residents are well cared for in this nursing home. (Item D1)

This nursing home does a good job keeping residents safe. (Item D6)

This nursing home is a safe place for residents. (Item D8)

#### **3.** Supervisor Expectations and Actions Promoting Resident Safety

My supervisor listens to staff ideas and suggestions about resident safety. (Item C1)

My supervisor says a good word to staff who follow the right procedures. (Item C2)

My supervisor pays attention to resident safety problems in this nursing home. (Item C3)

**Note:** The item's survey location is shown in parentheses after the item text. An asterisk (\*) denotes a negatively worded item. For negatively worded items, the percent positive response is the percentage of respondents who answered Strongly Disagree/Disagree or Never/Rarely.



SOPS

#### Chart 5-2. Item Results Average Percent Positive Response — 2025 SOPS Nursing Home Database (Page 2 of 4)

#### 4. Organizational Learning

It is easy to make changes to improve resident safety in this nursing home. (Item D4)

This nursing home is always doing things to improve resident safety. (Item D5)

When this nursing home makes changes to improve resident safety, it checks to see if the changes worked. (Item D10)

This nursing home lets the same mistakes happen again and again. (Item D3\*)

#### 5. Handoffs

Staff are told what they need to know before taking care of a resident for the first time. (Item B1)

Staff are told right away when there is a change in a resident's care plan. (Item B2)

We have all the information we need when residents are transferred from the hospital. (Item B3)

Staff are given all the information they need to care for residents. (Item B10)

#### 6. Training and Skills

Staff get the training they need in this nursing home. (Item A7)

Staff have enough training on how to handle difficult residents. (Item A11)

Staff understand the training they get in this nursing home. (Item A13)

**Note:** The item's survey location is shown in parentheses after the item text. An asterisk (\*) denotes a negatively worded item. For negatively worded items, the percent positive response is the percentage of respondents who answered Strongly Disagree/Disagree or Never/Rarely.

### Average % Positive Response









#### Chart 5-2. Item Results Average Percent Positive Response — 2025 SOPS Nursing Home Database (Page 3 of 4)





#### Chart 5-2. **Item Results** Average Percent Positive Response — 2025 SOPS Nursing Home Database (Page 4 of 4)

#### **10.** Communication Openness

Staff ideas and suggestions are valued in this nursing home. (Item B7)

It is easy for staff to speak up about problems in this nursing home. (Item B11)

Staff opinions are ignored in this nursing home. (Item B9\*)





24%

48%

11. Nonpunitive Response to Mistakes

Staff are treated fairly when they make mistakes. (Item A15)

Staff feel safe reporting their mistakes. (Item A18)

Staff are blamed when a resident is harmed. (Item A10\*)

Staff are afraid to report their mistakes. (Item A12\*)

#### 12. Staffing

We have enough staff to handle the workload. (Item A3)

Residents' needs are met during shift changes. (Item A16)

Staff have to hurry because they have too much work to do. (Item A8\*)

It is hard to keep residents safe here because so many staff quit their jobs. (Item A17\*)



#### Chart 5-3. Item Results Average Percentage Response on Willingness To Recommend — 2025 SOPS Nursing Home Database

#### Willingness To Recommend

I would tell friends that this is a safe nursing home for their family. (Item E1)



**Note:** Percentages indicate the database average percent response for each response option. Percentages might not add to 100 due to rounding.



#### Chart 5-4. Item Results Average Percentage Response on Overall Rating on Resident Safety — 2025 SOPS Nursing Home Database

#### **Overall Rating on Resident Safety**

Please give this nursing home an overall rating on resident safety. (Item E2)



**Note:** Percentages indicate the database average percent response for each response option. The percent positive displayed might not equal the sum of the separate response option percentages due to rounding. Percentages might not add to 100 due to rounding.



## 6 Comparing Nursing Home Results

The data in this report can be used to supplement a nursing home's efforts to identify areas of strength and areas to focus on to improve patient safety culture.

To compare a nursing home's survey results with the findings from the database, calculate the nursing home's percent positive response on the survey's 12 composite measures and survey items. These include items about willingness to recommend and overall rating on resident safety. The Notes section at the end of this report describes how to calculate percent positive scores. Individual nursing home results can then be compared with the database averages and the percentile scores for all nursing homes in the database.

When comparing your nursing home's results with the database results, note that the database only provides *relative* comparisons. Although your nursing home's survey results might have higher percent positive results than the database statistics, there may still be room for improvement in a particular area in your nursing home in an *absolute* sense.

### **Composite Measure and Item Tables**

**Table 6-1** presents statistics (average percent positive, standard deviation [s.d.], minimum and maximum scores, and percentiles) for each of the 12 composite measures.

**Table 6-2** presents statistics for each of the 42 survey items in the composite measures. Items are listed in their respective composite measure, with positively worded items listed before negatively worded items.

**Table 6-3** presents statistics for respondents who would tell their friends that the nursing home is safe for their family.

**Table 6-4** presents statistics for respondents' overall rating on resident safety in their nursing home. Results in the table represent average percent positive scores for respondents who answered "Excellent" or "Very Good."



#### Table 6-1. Composite Measure Results — 2025 SOPS Nursing Home Database

|   |                       |        |     | Com          | posite Me    | asure % Posit        | ive Respo    | onse         |      |
|---|-----------------------|--------|-----|--------------|--------------|----------------------|--------------|--------------|------|
| SOPS Composite Measures   | Average<br>% Positive | s.d.   | Min | 10th<br>%ile | 25th<br>%ile | Median/<br>50th %ile | 75th<br>%ile | 90th<br>%ile | Max  |
| 1. Feedback and Communication About Incidents                       | 83%                   | 10.47% | 49% | 68%          | 76%          | 84%                  | 90%          | 96%          | 100% |
| 2. Overall Perceptions of Resident Safety                           | 82%                   | 11.24% | 50% | 66%          | 74%          | 85%                  | 90%          | 96%          | 100% |
| 3. Supervisor Expectations and Actions Promoting<br>Resident Safety | 80%                   | 10.92% | 48% | 65%          | 71%          | 81%                  | 88%          | 93%          | 100% |
| 4. Organizational Learning  | 65%                   | 14.05% | 31% | 46%          | 52%          | 67%                  | 77%          | 83%          | 89%  |
| 5. Handoffs   | 64%                   | 14.39% | 22% | 45%          | 55%          | 65%                  | 75%          | 80%          | 90%  |
| 6. Training and Skills  | 63%                   | 13.61% | 31% | 44%          | 53%          | 64%                  | 75%          | 80%          | 96%  |
| 7. Management Support for Resident Safety                           | 63%                   | 15.64% | 27% | 43%          | 52%          | 65%                  | 75%          | 82%          | 98%  |
| 8. Teamwork   | 60%                   | 15.29% | 29% | 40%          | 49%          | 61%                  | 71%          | 81%          | 92%  |
| 9. Compliance With Procedures                                       | 55%                   | 14.44% | 19% | 35%          | 46%          | 56%                  | 67%          | 74%          | 87%  |
| 10. Communication Openness  | 54%                   | 15.56% | 18% | 34%          | 42%          | 53%                  | 67%          | 74%          | 100% |
| 11. Nonpunitive Response to Mistakes                                | 54%                   | 12.19% | 22% | 38%          | 45%          | 55%                  | 62%          | 71%          | 84%  |
| 12. Staffing  | 38%                   | 13.17% | 5%  | 22%          | 28%          | 37%                  | 47%          | 55%          | 69%  |
| Composite Measure Average   | 63%                   | 11.25% | 40% | 48%          | 54%          | 63%                  | 73%          | 77%          | 87%  |

**Note:** (1) Each composite measure is the average of the unrounded composite measure scores for all nursing homes in the database; (2) the Composite Measure Average is the average of the 12 unrounded composite measure scores of each nursing home in the database.



|   |                       |        |     |              | Survey Iter  | n % Positive            | Response     |              |      |
|---|-----------------------|--------|-----|--------------|--------------|-------------------------|--------------|--------------|------|
| Survey Items by SOPS Composite Measure  | Average<br>% Positive | s.d.   | Min | 10th<br>%ile | 25th<br>%ile | Median/<br>50th<br>%ile | 75th<br>%ile | 90th<br>%ile | Мах  |
| 1. Feedback and Communication About Incidents   |                       |        |     |              | % Alway      | /s/Most of t            | he time      |              |      |
| When staff report something that could harm a resident, someone takes care of it. (Item B4) | 82%                   | 12.37% | 43% | 64%          | 76%          | 85%                     | 91%          | 100%         | 100% |
| In this nursing home, we talk about ways to keep incidents from happening again. (Item B5)  | 81%                   | 12.56% | 38% | 65%          | 71%          | 84%                     | 89%          | 96%          | 100% |
| Staff tell someone if they see something that might harm a resident. (Item B6)              | 87%                   | 9.68%  | 57% | 73%          | 80%          | 89%                     | 93%          | 100%         | 100% |
| In this nursing home, we discuss ways to keep residents safe from harm. (Item B8)           | 81%                   | 13.73% | 38% | 63%          | 73%          | 85%                     | 90%          | 98%          | 100% |
| 2. Overall Perceptions of Resident Safety   |                       |        |     |              | % Stro       | ngly Agree/             | Agree        |              |      |
| Residents are well cared for in this nursing home.<br>(Item D1)                             | 80%                   | 13.48% | 38% | 62%          | 71%          | 82%                     | 90%          | 96%          | 100% |
| This nursing home does a good job keeping residents safe. (Item D6)                         | 82%                   | 12.13% | 40% | 67%          | 73%          | 85%                     | 91%          | 95%          | 100% |
| This nursing home is a safe place for residents.<br>(Item D8)                               | 84%                   | 11.23% | 50% | 70%          | 78%          | 85%                     | 93%          | 98%          | 100% |

#### Table 6-2. Item Results — 2025 SOPS Nursing Home Database (Page 1 of 6)



| Table 6-2. | Item Results — 2025 SOPS Nursing Home Database (Page 2 of 6) |
|------------|--|
|------------|--|

|   |                       |        | Survey Item % Positive Response |                          |              |              |              |              |      |
|---|-----------------------|--------|---------------------------------|--------------------------|--------------|--------------|--------------|--------------|------|
|   |                       |        |                                 | a eth                    |              | Median/      |              |              |      |
| Survey Items by SOPS Composite Measure  | Average<br>% Positive | s.d.   | Min                             | 10 <sup>th</sup><br>%ile | 25th<br>%ile | 50th<br>%ile | 75th<br>%ile | 90th<br>%ile | Max  |
| 3. Supervisor Expectations and Actions Promoting<br>Resident Safety   |                       |        |                                 |                          | % Stro       | ongly Agree, | /Agree       |              |      |
| My supervisor listens to staff ideas and suggestions about resident safety. (Item C1)                               | 79%                   | 12.59% | 45%                             | 63%                      | 70%          | 81%          | 89%          | 94%          | 100% |
| My supervisor says a good word to staff who follow the right procedures. (Item C2)                                  | 75%                   | 13.74% | 36%                             | 57%                      | 66%          | 77%          | 86%          | 92%          | 100% |
| My supervisor pays attention to resident safety problems in this nursing home. (Item C3)                            | 84%                   | 10.16% | 54%                             | 70%                      | 79%          | 86%          | 91%          | 100%         | 100% |
| 4. Organizational Learning  |                       |        |                                 |                          | % Stro       | ongly Agree, | /Agree       |              |      |
| It is easy to make changes to improve resident safety in this nursing home. (Item D4)                               | 59%                   | 15.57% | 13%                             | 40%                      | 47%          | 61%          | 72%          | 76%          | 91%  |
| This nursing home is always doing things to improve resident safety. (Item D5)                                      | 71%                   | 16.10% | 25%                             | 48%                      | 60%          | 73%          | 84%          | 89%          | 100% |
| When this nursing home makes changes to improve resident safety, it checks to see if the changes worked. (Item D10) | 69%                   | 16.36% | 20%                             | 49%                      | 56%          | 70%          | 80%          | 88%          | 100% |
|   |                       |        | % Strongly Disagree/Disagree    |                          |              |              |              |              |      |
| This nursing home lets the same mistakes happen again and again. (Item D3*)   | 60%                   | 16.46% | 21%                             | 37%                      | 50%          | 59%          | 74%          | 82%          | 100% |



|   |                       |        |     |                          | Survey Iter  | urvey Item % Positive Response |              |              |      |  |  |
|---|-----------------------|--------|-----|--------------------------|--------------|--------------------------------|--------------|--------------|------|--|--|
| Survey Items by SOPS Composite Measure  | Average<br>% Positive | s.d.   | Min | 10 <sup>th</sup><br>%ile | 25th<br>%ile | Median/<br>50th<br>%ile        | 75th<br>%ile | 90th<br>%ile | Max  |  |  |
| 5. Handoffs   |                       |        |     |                          | % Alway      | ys/Most of t                   | he time      |              |      |  |  |
| Staff are told what they need to know before taking care of a resident for the first time. (Item B1)  | 68%                   | 18.01% | 0%  | 47%                      | 56%          | 71%                            | 82%          | 90%          | 100% |  |  |
| Staff are told right away when there is a change in a resident's care plan. (Item B2)                 | 58%                   | 17.42% | 11% | 38%                      | 44%          | 59%                            | 70%          | 83%          | 89%  |  |  |
| We have all the information we need when<br>residents are transferred from the hospital.<br>(Item B3) | 56%                   | 16.65% | 0%  | 33%                      | 44%          | 57%                            | 68%          | 76%          | 88%  |  |  |
| Staff are given all the information they need to care for residents. (Item B10)                       | 72%                   | 15.63% | 33% | 50%                      | 62%          | 73%                            | 85%          | 91%          | 100% |  |  |
| 6. Training and Skills  |                       |        |     |                          | % Stro       | ongly Agree/                   | 'Agree       |              |      |  |  |
| Staff get the training they need in this nursing home. (Item A7)                                      | 67%                   | 15.41% | 29% | 46%                      | 56%          | 68%                            | 78%          | 87%          | 95%  |  |  |
| Staff have enough training on how to handle difficult residents. (Item A11)                           | 51%                   | 17.24% | 8%  | 28%                      | 41%          | 50%                            | 62%          | 74%          | 100% |  |  |
| Staff understand the training they get in this nursing home. (Item A13)                               | 71%                   | 14.26% | 40% | 50%                      | 63%          | 72%                            | 83%          | 89%          | 100% |  |  |

#### Table 6-2. Item Results – 2025 SOPS Nursing Home Database (Page 3 of 6)



|   |                       |        |     | Survey Item % Positive Response |              |              |              |              |      |  |  |
|---|-----------------------|--------|-----|---------------------------------|--------------|--------------|--------------|--------------|------|--|--|
|   | _                     |        |     |                                 |              | Median/      |              |              |      |  |  |
| Survey Items by SOPS Composite Measure  | Average<br>% Positive | s.d.   | Min | 10th<br>%ile                    | 25th<br>%ile | 50th<br>%ile | 75th<br>%ile | 90th<br>%ile | Max  |  |  |
| 7. Management Support for Resident Safety   |                       |        |     |                                 | % Stro       | ongly Agree/ | /Agree       |              |      |  |  |
| Management asks staff how the nursing home can improve resident safety. (Item D2)       | 62%                   | 17.48% | 9%  | 39%                             | 50%          | 64%          | 72%          | 83%          | 100% |  |  |
| Management listens to staff ideas and suggestions to improve resident safety. (Item D7) | 64%                   | 16.94% | 25% | 40%                             | 54%          | 64%          | 78%          | 84%          | 100% |  |  |
| Management often walks around the nursing home to check on resident care. (Item D9)     | 62%                   | 18.33% | 11% | 38%                             | 49%          | 63%          | 75%          | 88%          | 100% |  |  |
| 8. Teamwork   |                       |        |     |                                 | % Stro       | ongly Agree/ | /Agree       |              |      |  |  |
| Staff in this nursing home treat each other with respect. (Item A1)                     | 62%                   | 17.40% | 20% | 40%                             | 50%          | 62%          | 75%          | 87%          | 100% |  |  |
| Staff support one another in this nursing home.<br>(Item A2)                            | 63%                   | 15.78% | 27% | 42%                             | 50%          | 62%          | 76%          | 82%          | 96%  |  |  |
| Staff feel like they are part of a team. (Item A5)                                      | 56%                   | 19.01% | 10% | 29%                             | 43%          | 57%          | 71%          | 82%          | 92%  |  |  |
| When someone gets really busy in this nursing home, other staff help out. (Item A9)     | 60%                   | 15.08% | 25% | 38%                             | 50%          | 61%          | 70%          | 77%          | 100% |  |  |

#### Table 6-2. Item Results – 2025 SOPS Nursing Home Database (Page 4 of 6)



|  |                       |        |     |                          | Survey Iter  | n % Positive            | Response     |              |      |
|--|-----------------------|--------|-----|--------------------------|--------------|-------------------------|--------------|--------------|------|
| Survey Items by SOPS Composite Measure   | Average<br>% Positive | s.d.   | Min | 10 <sup>th</sup><br>%ile | 25th<br>%ile | Median/<br>50th<br>%ile | 75th<br>%ile | 90th<br>%ile | Max  |
| 9. Compliance With Procedures  |                       |        |     |                          | % Stro       | ongly Agree/            | Agree        |              |      |
| Staff follow standard procedures to care for residents. (Item A4)                | 74%                   | 14.65% | 33% | 54%                      | 65%          | 77%                     | 86%          | 91%          | 100% |
|  |                       |        |     |                          | % Strong     | ly Disagree/            | Disagree     |              |      |
| Staff use shortcuts to get their work done faster.<br>(Item A6*)                 | 34%                   | 16.24% | 0%  | 13%                      | 20%          | 35%                     | 43%          | 55%          | 75%  |
| To make work easier, staff often ignore procedures. (Item A14*)                  | 58%                   | 18.71% | 0%  | 32%                      | 46%          | 60%                     | 71%          | 82%          | 100% |
| 10. Communication Openness   |                       |        |     |                          | % Alwa       | ys/Most of t            | he time      |              |      |
| Staff ideas and suggestions are valued in this nursing home. (Item B7)           | 56%                   | 16.44% | 13% | 34%                      | 44%          | 57%                     | 69%          | 76%          | 100% |
| It is easy for staff to speak up about problems in this nursing home. (Item B11) | 58%                   | 15.12% | 25% | 37%                      | 47%          | 59%                     | 69%          | 76%          | 100% |
|  | % Never/Rarely        |        |     |                          |              |                         |              |              |      |
| Staff opinions are ignored in this nursing home.<br>(Item B9*)                   | 48%                   | 19.65% | 0%  | 26%                      | 35%          | 46%                     | 61%          | 78%          | 100% |

#### Table 6-2. Item Results – 2025 SOPS Nursing Home Database (Page 5 of 6)



|   |                       |        |                        |                          | Survey Iter  | n % Positive            | Response     |              |      |  |  |
|---|-----------------------|--------|------------------------|--------------------------|--------------|-------------------------|--------------|--------------|------|--|--|
| Survey Items by SOPS Composite Measure  | Average<br>% Positive | s.d.   | Min                    | 10 <sup>th</sup><br>%ile | 25th<br>%ile | Median/<br>50th<br>%ile | 75th<br>%ile | 90th<br>%ile | Max  |  |  |
| 11. Nonpunitive Response to Mistakes  |                       |        |                        |                          | % Stro       | ongly Agree/            | Agree        |              |      |  |  |
| Staff are treated fairly when they make mistakes.<br>(Item A15)                           | 62%                   | 15.60% | 22%                    | 43%                      | 50%          | 62%                     | 75%          | 82%          | 100% |  |  |
| Staff feel safe reporting their mistakes. (Item A18)                                      | 56%                   | 15.56% | 20%                    | 36%                      | 44%          | 56%                     | 65%          | 78%          | 100% |  |  |
|   |                       |        |                        |                          | % Strong     | ly Disagree/            | Disagree     |              |      |  |  |
| Staff are blamed when a resident is harmed.<br>(Item A10*)                                | 48%                   | 14.69% | 10%                    | 30%                      | 38%          | 49%                     | 59%          | 67%          | 83%  |  |  |
| Staff are afraid to report their mistakes.<br>(Item A12*)                                 | 49%                   | 15.04% | 10%                    | 30%                      | 38%          | 49%                     | 59%          | 67%          | 83%  |  |  |
| 12. Staffing  |                       |        | % Strongly Agree/Agree |                          |              |                         |              |              |      |  |  |
| We have enough staff to handle the workload.<br>(Item A3)                                 | 22%                   | 15.89% | 0%                     | 0%                       | 11%          | 20%                     | 31%          | 42%          | 67%  |  |  |
| Residents' needs are met during shift changes.<br>(Item A16)                              | 58%                   | 18.72% | 0%                     | 37%                      | 45%          | 58%                     | 71%          | 84%          | 100% |  |  |
|   |                       |        |                        |                          | % Strong     | ly Disagree/            | Disagree     |              |      |  |  |
| Staff have to hurry because they have too much work to do. (Item A8*)                     | 24%                   | 13.40% | 0%                     | 8%                       | 14%          | 23%                     | 33%          | 40%          | 61%  |  |  |
| It is hard to keep residents safe here because so many staff quit their jobs. (Item A17*) | 48%                   | 18.17% | 0%                     | 25%                      | 34%          | 47%                     | 61%          | 71%          | 100% |  |  |

#### Table 6-2. Item Results – 2025 SOPS Nursing Home Database (Page 6 of 6)


### Table 6-3. Item Results for Willingness To Recommend — 2025 SOPS Nursing Home Database

|  |                       |        |     |              | Survey Iten  | n % Positive            | Response     |              |      |
|--|-----------------------|--------|-----|--------------|--------------|-------------------------|--------------|--------------|------|
| Willingness To Recommend   | Average %<br>Positive | s.d.   | Min | 10th<br>%ile | 25th<br>%ile | Median/<br>50th<br>%ile | 75th<br>%ile | 90th<br>%ile | Мах  |
| I would tell friends that this is a safe nursing home for their family. (Item E1, Yes) | 70%                   | 16.28% | 27% | 47%          | 60%          | 71%                     | 83%          | 91%          | 100% |

Note: The item's survey location is shown in parentheses after the item text. For the results of all response options, see Chart 5-3.

### Table 6-4 Item Results on Overall Rating on Resident Safety — 2025 SOPS Nursing Home Database

|   |                       |        |     |              | Survey Iten  | n % Positive            | Response     |              |      |
|---|-----------------------|--------|-----|--------------|--------------|-------------------------|--------------|--------------|------|
| Overall Rating on Resident Safety   | Average %<br>Positive | s.d.   | Min | 10th<br>%ile | 25th<br>%ile | Median/<br>50th<br>%ile | 75th<br>%ile | 90th<br>%ile | Max  |
| Please give this nursing home an overall rating on resident safety. (Item E2, Excellent or Very Good) | 53%                   | 19.86% | 11% | 26%          | 38%          | 56%                     | 67%          | 80%          | 100% |

Note: The item's survey location is shown in parentheses after the item text. For the results of all response options, see Chart 5-4.



## 7 What's Next? Action Planning for Improvement

The AHRQ Surveys on Patient Safety Culture are important sources of information for healthcare organizations striving to improve patient safety. However, administering a SOPS survey is not the end of the improvement process. It is important to develop and implement action plans that use survey data for improvement.

## **SOPS Action Planning Tool**

The <u>Action Planning Tool for the AHRQ Surveys on Patient Safety Culture</u> is intended for use after your organization administers the survey and analyzes the results. The Action Planning *Tool* offers guidance to help you develop an action plan for your unit, department, or facility. You can use the Action Plan Template at the end of the tool to document your answers to the key questions below.

### 1. Identifying Areas To Improve:

- a. What areas do you want to focus on for improvement?
- b. What are your "SMART" goals?
  - Specific
  - Measurable
  - Achievable
  - Relevant
  - Time bound

#### 2. Planning Your Improvement Initiative:

- a. What initiative will you implement?
- b. What resources will you need?
- c. What are possible barriers and how can you overcome them?
- d. How will you measure progress and success?
- e. Will you pilot test the initiative?
- f. What is the timeline?

#### 3. Communicating Your Action Plan:

- a. How will you share your action plan?
- b. How will you provide progress updates on your action plan?

# Improvement Resources for Users of the AHRQ Nursing Home Survey

Improving Patient Safety in Nursing Homes: A Resource List for Users of the AHRQ Nursing Home Survey on Patient Safety Culture contains references to websites and other practical resources nursing homes can use to improve patient safety culture and patient safety. The resource list is not exhaustive but provides initial guidance to nursing homes seeking information about patient safety initiatives.

### References

Agency for Healthcare Research and Quality. Nursing Home Survey on Patient Safety Culture. <u>https://www.ahrq.gov/sops/surveys/nursing-home/index.html</u>. Accessed January 8, 2025.

Centers for Medicare & Medicaid Services. CMS Nursing Home Compare datasets. Last updated October 2024. <u>https://data.medicare.gov/data/nursing-home-compare</u>. Accessed January 25, 2025.

Improving Patient Safety in Nursing Homes: A Resource List for Users of the AHRQ Nursing Home Survey on Patient Safety Culture. Rockville, MD: Agency for Healthcare Research and Quality; April 2023. <u>https://www.ahrq.gov/sites/default/files/wysiwyg/sops/surveys/nursing-home/nursinghome-resourcelist.pdf</u>. Accessed January 8, 2025.

Yount N, Edelman S, Sorra J, Gray L. Action Planning Tool for the AHRQ Surveys on Patient Safety Culture<sup>®</sup> (SOPS<sup>®</sup>). (Prepared by Westat, Rockville, MD, under Contract No. HHSP233201500026I/HHSP23337004T). Rockville, MD: Agency for Healthcare Research and Quality; November 2022. AHRQ Publication No. 23-0011. https://www.ahrq.gov/sops/resources/planning-tool/index.html. Accessed January 8, 2025.



## Notes: Description of Data Cleaning, Calculations, and Data Limitations

This section provides additional detail regarding how various statistics presented in this report were calculated, as well as data limitations.

## **Data Cleaning**

Each participating nursing home submitted respondent-level survey data. Once the data were submitted, response frequencies were tabulated for each nursing home to find out-of-range values, missing values, and other data anomalies. When data outliers or other inconsistencies were found, nursing homes were contacted and asked to correct and resubmit their data. In addition, after uploading their survey data, each participating nursing home received a copy of its data frequencies to verify that the dataset the online submission system received was correct.

Data were also reviewed for response biases (e.g., responding with the same answer for all positively and negatively worded items in the same section of the survey). An example of a positively worded item is A5. Staff feel like they are part of a team, and an example of a negatively worded item is A8. Staff have to hurry because they have too much work to do.

Sections A, B, C, and D include both positively and negatively worded items. When respondents supplied the same answer for every item in sections A, B, C, and D, responses for those particular respondents were removed from the final dataset because respondents should not have answered the same way across these differently worded items. In addition, if respondents marked the same answer for all items within section A, which has more than one negatively worded item, those responses were set to missing in that section.

As a final step, respondents who had missing answers or supplied a "Does Not Apply or Don't Know" response to all items across sections A, B, C, and D were removed from the final dataset. Nursing homes were included in the database only if they had at least 10 respondents after all data cleaning steps.



## **Response Rates**

As part of the data submission process, we asked nursing homes to provide the number of completed, returned surveys and the total number of surveys distributed. Incomplete surveys are those surveys that were removed as a result of data cleaning as outlined above. We then calculated response rates using the formula below:

 $Response Rate = \frac{Number of returned surveys - Incompletes}{Number of eligible providers and staff who received a survey}$ 

### **Calculation of Percent Positive Scores**

Most of the survey items ask respondents to answer using 5-point response options in terms of agreement (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree) or frequency (Always, Most of the time, Sometimes, Rarely, Never). Three of the 12 SOPS composite measures consisting of 11 items use the frequency response option (*Handoffs, Feedback and Communication About Incidents*, and *Communication Openness*). The other nine composite measures use the agreement response options. The composite measure items contain a "Does Not Apply or Don't Know" response option that is not included in the calculation of percent positive scores.

The single item, Willingness To Recommend, uses a 3-point scale: "Yes," "Maybe," and "No."

The Overall Rating on Resident Safety uses a 5-point scale: "Poor," "Fair," "Good," "Very Good," and "Excellent."

### **Composite Measure Item Percent Positive Response**

The survey includes both positively worded items (e.g., "Staff feel like they are part of a team") and negatively worded items (e.g., "Staff have to hurry because they have too much work to do"). Calculating the percent positive response for positively worded items is different from calculating the percent positive response for negatively worded items:

• For positively worded items, the 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 options used for the item.

For example, for the item "Staff feel like they are part of a team," if 50 percent of respondents within a nursing home responded "Strongly Agree" and 25 percent responded "Agree," the item percent positive response for that nursing home would be 50% + 25% = 75% positive.

• For negatively worded items, the percent positive response is the combined percentage of respondents within a nursing home who answered "Strongly Disagree" or

"Disagree," or "Never" or "Rarely," depending on the response options used for the item. Keep in mind that a *negative* answer to a negatively worded item indicates a *positive* response.

For example, for the item "Staff have to hurry because they have too much work to do," if 40 percent of respondents within a nursing home responded "Strongly Disagree" and 20 percent responded "Disagree," the item percent positive response would be 60 percent positive (i.e., 60 percent of respondents *do not* believe there is a problem with having to hurry because they have too much work to do).

### **Composite Measure Percent Positive Response**

The 12 SOPS Nursing Home Survey composite measures are each composed of three or four survey items. We calculated composite measure scores for each nursing home by averaging the unrounded percent positive response on the items within a composite measure. For example, for a three-item composite measure, if the item percent positive responses were 45.8 percent, 56.8 percent, and 48.1 percent, the nursing home's composite measure percent positive response would be the average of these three percentages, or 50.2 percent positive, and displayed as a rounded percentage of 50 percent.

If a nursing home had data for at least 50 percent of the items within a composite measure, the site would still receive a composite measure score. For example, for a three-item composite measure, the number of item scores needed to calculate the composite measure score is two items. For a four-item composite measure, the number of item scores needed to calculate the composite measure score is two items. For an item score to be calculated, there must be at least three respondents for the item.

Table N1 shows an example of computing a composite measure score for *Staffing* for a single nursing home. This composite measure has four items. Two are positively worded (Items A3 and A16) and two are negatively worded (Items A8 and A17). Keep in mind that DISAGREEING with a negatively worded item indicates a POSITIVE response.



|                                    | Calculation of Percent Positive   |   |   |                                      |  |  |  |
|------------------------------------|---|---|---|--------------------------------------|--|--|--|
| Four Items Measuring<br>"Staffing" | For Positively<br>Worded Items,<br>Number of<br>"Strongly Agree"<br>or "Agree"<br>Responses | For Negatively<br>Worded Items,<br>Number of<br>"Strongly Disagree"<br>or "Disagree"<br>Responses | Total Number of<br>Responses to<br>the Item<br>(Excluding<br>"Does Not Apply<br>or Don't Know"<br>and Missing<br>Responses) | ltem Percent<br>Positive<br>Response |  |  |  |
| Item A3 - positively worded        |   |   |   |                                      |  |  |  |
| "We have enough staff to           | 110   | NA*   | 240   | 110/240= <b>45.8%</b>                |  |  |  |
| handle the workload."              |   |   |   |                                      |  |  |  |
| Item A16 - positively worded       |   |   |   |                                      |  |  |  |
| "Residents' needs are met          | 142   | NA*   | 250   | 142/250= <b>56.8%</b>                |  |  |  |
| during shift changes."             |   |   |   |                                      |  |  |  |
| Item A8 - negatively worded        |   |   |   |                                      |  |  |  |
| "Staff have to hurry because       | NA*   | 125   | 260   | 125/260= <b>48.1%</b>                |  |  |  |
| they have too much work to         |   |   |   |                                      |  |  |  |
| do."                               |   |   |   |                                      |  |  |  |
| Item A17 - negatively worded       |   |   |   |                                      |  |  |  |
| "It is hard to keep residents      | NA*   | 132   | 255   | 132/255= <b>51.8%</b>                |  |  |  |
| safe here because so many          |   |   |   |                                      |  |  |  |
| staff quit their jobs."            |   |   |   |                                      |  |  |  |

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

\*NA = Not applicable.

This example includes four items, with percent positive response scores of 45.8 percent, 56.8 percent, 48.1 percent, and 51.8 percent. Averaging these four items' percent positive scores results in a composite measure percent positive score of 50.6 percent for the *Staffing* composite measure.

### **Single-Item Percent Positive Response**

The percent positive score for Willingness To Recommend (Item E1) is calculated by counting the number of respondents who answered "Yes" and then dividing that by the total number of responses to Item E1.

The Overall Rating on Resident Safety (Item E2) percent positive response is calculated by adding together the percentage of respondents who answered "Excellent" or "Very Good" and then dividing that sum by the total number of responses to item E2.



Table N2 shows examples of computing the percent positive response for Willingness To Recommend (Item E1) and the Overall Rating on Resident Safety (Item E2).

## Table N2.Example of Computing Willingness To Recommend and Overall Rating on<br/>Resident Safety

| Survey Items  | Number of "Yes"<br>Responses | Number of<br>"Excellent" or<br>"Very Good"<br>Responses | Total Number of<br>Responses to the<br>Item | ltem Percent<br>Positive<br>Response |
|---|------------------------------|---|---|--------------------------------------|
| Item E1:  |                              |   |   |                                      |
| "I would tell friends that this<br>is a safe nursing home for<br>their family." | 193                          | NA*   | 250   | 193/250 = <b>77.2%</b>               |
| Item E2:  |                              |   |   |                                      |
| "Please give this nursing<br>home an overall rating on<br>resident safety."     | NA*                          | 125   | 240   | 125/240 = <b>52.1%</b>               |

\* NA = Not applicable.

### **Database Item and Composite Measure Percent Positive Scores**

We calculated the database average percent positive scores for each of the 12 SOPS composite measures and survey items by averaging the unrounded nursing home-level percent positive item scores and composite measure scores of all nursing homes in the database. Because 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.

### **Standard Deviation**

The standard deviation (s.d.) is a measure of the spread or variability of nursing home scores around the average. The standard deviations presented in Chapter 6 show the extent to which nursing home 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 was 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 percent and 80 percent positive.

### **Minimum and Maximum Scores**

The minimum (lowest) and maximum (highest) percent positive scores are presented for each composite measure and item. These scores provide information about the range of percent positive scores obtained by database nursing homes and are actual scores from the lowest and highest scoring nursing homes.

When comparing your data 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

Percentiles provide information about the distribution of nursing home scores. A specific percentile score shows the percentage of nursing homes that scored at or below a particular score.

Percentiles were computed using the SAS<sup>®</sup> software default method. The first step in this procedure is to rank 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> percentiles.

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 N3). First, the percent positive scores for composite measure "A" are sorted from low to high.

| Nursing Home | Composite Measure "A" % Positive Score |  |
|--------------|--|--|
| 1            | 33%                                    |  |
| 2            | 48%                                    | $\leftarrow$ 10 <sup>th</sup> percentile score = 48% |
| 3            | 52%                                    |  |
| 4            | 60%                                    |  |
| 5            | 63%                                    |  |
| 6            | 64%                                    | ← $50^{\text{th}}$ percentile score = 65%            |
| 7            | 66%                                    | C 50 percentile score – 05%                          |
| 8            | 70%                                    |  |
| 9            | 72%                                    |  |
| 10           | 75%                                    |  |
| 11           | 75%                                    | 7  |
| 12           | 78%                                    |  |

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

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

- 1. For the 10<sup>th</sup> percentile, we would first multiply the number of nursing homes (n) by 0.10 (p): (n x p =  $12 \times 0.10 = 1.2$ ).
- 2. The product of n x p = 1.2, where "j" = 1 (the integer) and "g" = 2 (the decimal). Because "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<sup>th</sup> +1 position:
  - 1. "j" equals 1.
  - 2. The  $10^{\text{th}}$  percentile equals the value for the nursing home in the  $2^{\text{nd}}$  position = 48%.

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

- 1. For the 50<sup>th</sup> percentile, we would first multiply the number of nursing homes by 0.50:  $(n \times p = 12 \times 0.50 = 6.0)$ .
- 2. The product of n x p = 6.0, where "j" = 6 and "g" = 0. Because "g" = 0, the 50<sup>th</sup> percentile score is equal to the percent positive value of the nursing home in the j<sup>th</sup> position plus the percent positive value of the nursing home in the j<sup>th</sup> +1 position, divided by 2:
  - 1. "j" equals 6.
  - 2. 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%.

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 N4.



### Table N4. Interpretation of Percentile Scores

| Percentile Score                                     | Interpretation                                     |
|--|--|
| 10 <sup>th</sup> percentile                          | 10% of the nursing homes scored the same or lower. |
| Represents the lowest scoring nursing homes.         | 90% of the nursing homes scored higher.            |
| 25 <sup>th</sup> percentile                          | 25% of the nursing homes scored the same or lower. |
| Represents lower scoring nursing homes.              | 75% of the nursing homes scored higher.            |
| 50 <sup>th</sup> percentile (or median)              | 50% of the nursing homes scored the same or lower. |
| Represents the middle of the distribution of nursing | 50% of the nursing homes scored higher.            |
| homes.   |  |
| 75 <sup>th</sup> percentile                          | 75% of the nursing homes scored the same or lower. |
| Represents higher scoring nursing homes.             | 25% of the nursing homes scored higher.            |
| 90 <sup>th</sup> percentile                          | 90% of the nursing homes scored the same or lower. |
| Represents the highest scoring nursing homes.        | 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 measure and item. See examples below in Table N5.

### Table N5. Sample Percentile Statistics



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 75th 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.

## Statistically "Significant" Differences Between Scores

You might be interested in determining the statistical significance of differences between your scores and the database scores, or between database scores in various categories (e.g., nursing home bed size, teaching status, geographic region). Statistical significance is greatly influenced by sample size; as the number of observations in comparison groups increases,

small differences in scores become statistically significant. While a 1 percentage point difference between percent positive scores might be "statistically" significant (that is, not due to chance), such a small difference of 1 percentage point 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. We provide the average, standard deviation, range, and percentile information so that you can compare your data with the database in different ways.

## **Data Limitations**

The survey results presented in this report represent the largest known compilation of publicly available patient safety culture data for nursing homes and therefore provide a useful reference. However, these data have several limitations.

First, nursing homes voluntarily submitted their data to the database; therefore, the database only includes those nursing homes that have administered the SOPS Nursing Home Survey and were willing to submit their data to the database. Estimates based on this self-selected sample may produce biased estimates of the population. Therefore, it is not possible to compute estimates of precision that apply to the population.

Second, only a small percentage of all nursing homes in the United States (less than 1 percent) are represented in the database (see Table 3-1). However, the characteristics of the database nursing homes are fairly consistent with the distribution of nursing homes registered with the CMS Compare Nursing Homes and are described further in Chapter 3.

Third, nursing homes that administered the survey were not required to undergo any training and administered the survey in different ways. Some nursing homes administered only paper surveys, others used only web-based surveys, and others used a combination of these two methods. These different survey administration modes could have led to differences in survey responses; further research is needed to determine whether, and how, different survey administration modes affect the results.

In addition, some nursing homes conducted a census, surveying all their staff and providers, while others administered the survey to a sample of only some staff and providers. Survey administration statistics for database nursing homes, such as survey administration modes and response rates, are provided in Chapter 2.

Finally, the data nursing homes submitted have been cleaned for out-of-range values (e.g., invalid response values due to data entry errors), straight-lining (where responses to all survey items in sections A, B, C, and D were the same), and blank records (where responses to all survey items were missing or had "Does Not Apply or Don't Know" except for background items). Otherwise, data are presented as submitted. No additional attempts were made to verify or audit the accuracy of the data submitted.

