



Surveys on Patient Safety Culture™

Pilot Study Results From the AHRQ Surveys on Patient Safety Culture™ (SOPS®) Workplace Safety Supplemental Items for Hospitals

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Prepared by:

Westat, Rockville, MD

Theresa Famolaro, M.P.S., M.S., M.B.A.

Naomi Dyer Yount, Ph.D.

Joann Sorra, Ph.D.

Katarzyna Zebrak, Ph.D.

Laura Gray, M.P.H.

Deborah Carpenter, M.S.N., RN

Andrew Caporaso, M.S.

Ryan Hare, M.P.P.

Lei Fan, M.D., Ph.D.

Helen Liu

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Purpose and Use of This Report

The AHRQ Surveys on Patient Safety Culture™ (SOPS®) Workplace Safety Supplemental Items assess the extent to which the organizational culture in hospitals supports workplace safety for providers and staff. The supplemental items were designed to be administered toward the end of the SOPS Hospital Survey 2.0, just before the background questions.

This report provides results from 28 U.S. hospitals that participated in a pilot study of the SOPS Workplace Safety Supplemental Items from May to June 2021.

When comparing your hospital's results against the pilot results in this document, keep in mind that these results are from a very small number of hospitals and will provide only a general indication of how your hospital compares with other hospitals in the United States. The data summarized here were not derived from a statistically representative sample of U.S. hospitals.

Data from the SOPS Workplace Safety Supplemental Items can be submitted to the AHRQ SOPS Hospital Database. For more information on the SOPS Workplace Safety Supplemental Items, visit the AHRQ website at <https://www.ahrq.gov/sops/surveys/hospital/index.html>; and for information on data submission for the SOPS Hospital Database, visit <https://www.ahrq.gov/sops/databases/hospital/databases/submission.html>.

Survey Development and Pilot Study

Development of the SOPS Workplace Safety Supplemental Items

A survey development team at Westat developed the workplace safety supplemental items under contract with AHRQ. The survey development team reviewed the literature on workplace safety in hospitals, interviewed hospital and workplace safety experts and researchers, and identified key survey topics. They then drafted survey items for review by the SOPS Technical Expert Panel (TEP) and workplace safety subject matter experts (SMEs).

The development team conducted iterative cognitive testing of the draft survey items with 20 hospital providers and staff to ensure that the questions were relevant, as well as easy to understand and answer. The TEP and SMEs also reviewed the items and provided input at various stages of the development process.

The team conducted a pilot study of the workplace safety supplemental items in 28 U.S. hospitals from May to June 2021. The supplemental items were administered toward the end of the SOPS Hospital Survey, just before the background questions. The team then analyzed the pilot data to examine the psychometric properties of the supplemental items (e.g., reliability using Cronbach's alpha, factor structure), with the goal of including only the best items.

The final supplemental items had acceptable psychometric properties. The Cronbach's alpha reliability for each composite measure is shown in Table 1; reliabilities near 0.70 or above are considered acceptable.

The SOPS Workplace Safety Supplemental Items include 16 survey items grouped into 6 composite measures (a composite measure consists of 2 to 3 survey items that assess the same area of workplace safety culture), described in Table 1. The survey items use 5-point agreement scales ("Strongly disagree" to "Strongly agree") and include a "Does not apply or Don't know" response option.

In addition to items that make up these composite measures, the survey includes four single-item measures. These items ask respondents if there is a problem with providers or staff being verbally aggressive toward other providers or staff, if they can report any workplace safety concerns without fear of negative consequences, the extent to which they are feeling symptoms of burnout, and an overall rating on workplace safety for their unit/work area. Last, the Workplace Safety Supplemental Items include two background items on job satisfaction and intent to leave the hospital.

Table 1. SOPS Workplace Safety Composite Measures

Workplace Safety Composite Measures	Definition: The extent to which...	Number of Items	Reliability (Cronbach's Alpha)
Protection From Workplace Hazards	Procedures are in place to protect providers and staff from workplace hazards, providers and staff are provided with personal protective equipment (PPE), and they use PPE appropriately.	3	0.87
Moving, Transferring, or Lifting Patients	Equipment or assistive devices are available, staff use them when needed, and staff are available when needed to move, transfer, or lift patients.	3	0.83
Addressing Workplace Aggression From Patients or Visitors	Workplace aggression from patients or visitors is problematic.	2	0.89
Workplace Aggression Policies, Procedures, and Training	Effective policies, procedures and training are in place to manage workplace aggression and keep providers and staff safe.	2	0.67
Supervisor, Manager, or Clinical Leader Support for Workplace Safety	Supervisors, managers, or clinical leaders monitor the workplace, encourage providers and staff to report their concerns, and can be trusted to keep providers and staff safe.	3	0.92
Hospital Management Support for Workplace Safety	Hospital management shows that workplace safety is a top priority, provides adequate resources for workplace safety, and takes action to address concerns.	3	0.96

Pilot Study Response Rate Statistics

The number of respondents, number of surveys administered, and response rates for the pilot study are shown in Table 2.

Table 2. Pilot Study Response Rate Statistics

Overall Response Rate Information	Statistic
Number of respondents	7,037
Number of surveys distributed	19,979
Overall response rate	35%
Average Response Rate Information	Statistic
Average number of respondents per hospital (range: 21 to 1,373)	251
Average number of surveys distributed per hospital (range: 52 to 3,027)	714
Average hospital response rate (range: 10% to 64%)	39%

Pilot Study Hospital Characteristics

This section presents the characteristics of the pilot hospitals.

Table 3. Pilot Study Hospital Characteristics

Bed Size	Pilot Study Hospitals (n=28)	
	Number	Percent
6-24 beds	4	14%
25-49 beds	5	18%
50-99 beds	9	32%
100-199 beds	6	21%
200 beds or more	4	14%
Teaching Status	Number	Percent
Teaching	18	64%
Nonteaching	10	36%
Hospital Ownership	Number	Percent
Government (Federal and non-Federal)	11	39%
Nongovernment not for profit	11	39%
Investor owned (for profit)	6	21%
Census Region	Number	Percent
Northeast	7	25%
South	4	14%
Midwest	10	36%
West	7	25%

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

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

Pilot Study Respondent Characteristics

This section describes the characteristics of the respondents within the pilot study hospitals.

Table 4. Pilot Study Respondent Characteristics by Staff Position

Hospital Staff Position	Respondents	
	Number	Percent
Nursing		
Advanced Practice Nurse (NP, CRNA, CNS, CNM)	53	1%
Licensed Vocational Nurse (LVN), Licensed Practical Nurse (LPN)	116	2%
Patient Care Aide, Nursing Assistant	459	7%
Registered Nurse (RN)	1,848	26%
Nursing Subtotal	2,476	35%
Medical		
Physician Assistant	15	<1%
Resident, Intern	45	1%
Physician, Attending, Hospitalist	113	2%
Medical Subtotal	173	2%
Other Clinical Position		
Dietitian	26	<1%
Pharmacist, Pharmacy Technician	279	4%
Physical, Occupational, or Speech Therapist	220	3%
Psychologist	6	<1%
Respiratory Therapist	112	2%
Social Worker	75	1%
Technologist, Technician (EKG, Lab, Radiology)	524	7%
Other Clinical Position Subtotal	1,242	18%
Supervisor, Manager, Clinical Leader, Senior Leader		
Supervisor, Manager, Department Manager, Clinical Leader, Administrator	716	10%
Senior Leader, Executive, C-Suite	87	1%
Supervisor, Manager, Clinical Leader, Senior Leader Subtotal	803	11%
Support		
Facilities	128	2%
Food Services	91	1%
Housekeeping, Environmental Services	129	2%
Information Technology, Health Information Services, Clinical Informatics	259	4%
Security	51	1%
Transporter	25	<1%
Unit Clerk, Secretary, Receptionist, Office Staff	710	10%
Support Subtotal	1,393	20%
Other Staff Position	907	13%
Total	6,994	100%
Missing	43	--
Overall total	7,037	--

Note: Subtotals may not add to the percentage shown due to rounding. Percentages may not add to 100 due to rounding.

Table 5. Pilot Study Respondent Characteristics by Unit/Work Area

Unit/Work Area	Respondents	
	Number	Percent
Multiple Units, No Specific Unit	687	10%
Medical/Surgical Units		
Combined Medical/Surgical Unit	434	6%
Medical Unit (Nonsurgical)	135	2%
Surgical Unit	100	1%
Medical/Surgical Units Subtotal	669	10%
Patient Care Units		
Cardiology	98	1%
Emergency Department, Observation, Short Stay	414	6%
Gastroenterology	8	<1%
ICU (All Adult Types)	231	3%
Labor and Delivery, Obstetrics and Gynecology	233	3%
Oncology, Hematology	93	1%
Pediatrics (including NICU, PICU)	157	2%
Psychiatry, Behavioral Health	241	3%
Pulmonology	6	<1%
Rehabilitation, Physical Medicine	353	5%
Telemetry	130	2%
Patient Care Units Subtotal	1,964	28%
Surgical Services		
Anesthesiology	30	<1%
Endoscopy, Colonoscopy	33	<1%
Pre Op, Operating Room/Suite, PACU/Post Op, Peri Op	250	4%
Surgical Services Subtotal	313	4%
Clinical Services		
Pathology, Lab	233	3%
Pharmacy	264	4%
Radiology, Imaging	240	3%
Respiratory Therapy	51	1%
Social Services, Case Management, Discharge Planning	82	1%
Clinical Services Subtotal	870	12%
Administration/Management		
Administration, Management	282	4%
Financial Services, Billing	246	4%
Human Resources, Training	71	1%
Information Technology, Health Information Management, Clinical Informatics	291	4%
Quality, Risk Management, Patient Safety	124	2%
Administration/Management Subtotal	1,014	15%

Note: Subtotals may not add to the percentages shown due to rounding. Percentages may not add to 100 due to rounding.

Table 5. Pilot Study Respondent Characteristics by Unit/Work Area (Continued)

Unit/Work Area	Respondents	
	Number	Percent
Support Services		
Admitting/Registration	200	3%
Food Services, Dietary	120	2%
Housekeeping, Environmental Services, Facilities	174	2%
Security Services	40	1%
Transport	23	<1%
Support Services Subtotal	557	8%
Other Unit/Work Area	908	13%
Total	6,982	100%
Missing	55	--
Overall total	7,037	--

Note: Subtotals may not add to the percentages shown due to rounding. Percentages may not add to 100 due to rounding.

Table 6. Other Pilot Study Respondent Characteristics

Job Satisfaction (Workplace Safety Background Item)	Respondents	
	Number	Percent
Very Dissatisfied	177	3%
Dissatisfied	426	7%
Neither Satisfied or Dissatisfied	915	14%
Satisfied	3,238	50%
Very Satisfied	1,773	27%
Total	6,529	100%
Missing	508	--
Overall total	7,037	--
Considering Leaving Hospital (Workplace Safety Background Item)	Number	Percent
No	4,837	75%
Yes, to retire	239	4%
Yes, to take another job within healthcare	803	12%
Yes, to take another job outside of healthcare	155	2%
Yes, other	442	7%
Total	6,476	100%
Missing	561	--
Overall total	7,037	--
Tenure in Hospital	Number	Percent
Less than 1 year	767	12%
1 to 5 years	2,297	35%
6 to 10 years	1,251	19%
11 or more years	2,195	34%
Total	6,510	100%
Missing	527	--
Overall total	7,037	--

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

Table 6. Other Pilot Study Respondent Characteristics (Continued)

Tenure in Unit/Work Area	Respondents	
	Number	Percent
Less than 1 year	1,077	17%
1 to 5 years	2,742	42%
6 to 10 years	1,159	18%
11 or more years	1,530	24%
Total	6,508	100%
Missing	529	--
Overall total	7,037	--
Hours Worked per Week in Hospital	Number	Percent
Less than 30 hours per week	528	8%
30 to 40 hours per week	4,150	64%
More than 40 hours	1,836	28%
Total	6,514	100%
Missing	523	--
Overall total	7,037	--
Interaction With Patients	Number	Percent
Yes, I typically have direct interaction or contact with patients	4,464	69%
No, I typically do NOT have direct interaction or contact with patients	2,046	31%
Total	6,510	100%
Missing	527	--
Overall total	7,037	--

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

Composite Measure and Item Results

Composite Measure and Item Charts

This section provides results for the workplace safety composite measures and items. The methods for calculating the percent positive scores for the composite measures and items are described in the Notes.

Composite Measure Results

Chart 1 shows the average percent positive response for each of the 6 workplace safety composite measures. The workplace safety composite measures are shown in order from the highest average percent positive response to the lowest.

- The composite measure with the highest average percent positive (90 percent) was *Protection From Workplace Hazards*.
- The composite measure with the lowest average percent positive (58 percent) was *Addressing Workplace Aggression From Patients or Visitors*.

Item Results

Chart 2 shows the average percent positive response for each of the 16 composite measure survey items. The items are grouped by the workplace safety composite measure they are intended to measure. Within each composite measure, the items are presented in the order in which they appear in the survey.

- The item with the highest average percent positive (92 percent) was: “*This unit has effective procedures to protect providers and staff from exposure to hazardous materials, contagious diseases, blood, or other bodily fluids.*”
- The item with the lowest average percent positive (51 percent) was: “*In this unit, there is a problem with patients or visitors being verbally aggressive toward providers or staff.*”

Chart 2 also provides the average percentages of respondents answering “Does not apply or Don’t Know” (NA/DK) or those who did not answer/left the item missing (MI) for each item (see the Notes section for how these percentages are calculated).

For all but three items, the average NA/DK/MI percentages ranged from 9 percent to 29 percent. However, three items within the composite measure *Moving, Transferring, or Lifting Patients* had higher average percentages of NA/DK/MI, ranging from 41 percent to 45 percent. When these items were further investigated, staff who were expected to engage in moving, transferring, or lifting patients, such as registered nurses; patient care aides, hospital aides, and nursing assistants; physical, occupational, or speech therapists; and respiratory therapists, were mostly able to answer these questions.

Chart 1. SOPS Workplace Safety Composite Measure Results
Average Percent Positive Response – Pilot Study Hospitals



Chart 2. SOPS Workplace Safety Item Results - Average Percent Positive Response - Pilot Study Hospitals



Note: NA/DK/MI = percentage of respondents answering “Does not apply/Don’t know” or with missing data. The item average percent positive scores do not include NA/DK/MI responses.

Chart 2. SOPS Workplace Safety Item Results - Average Percent Positive Response - Pilot Study Hospitals (continued)

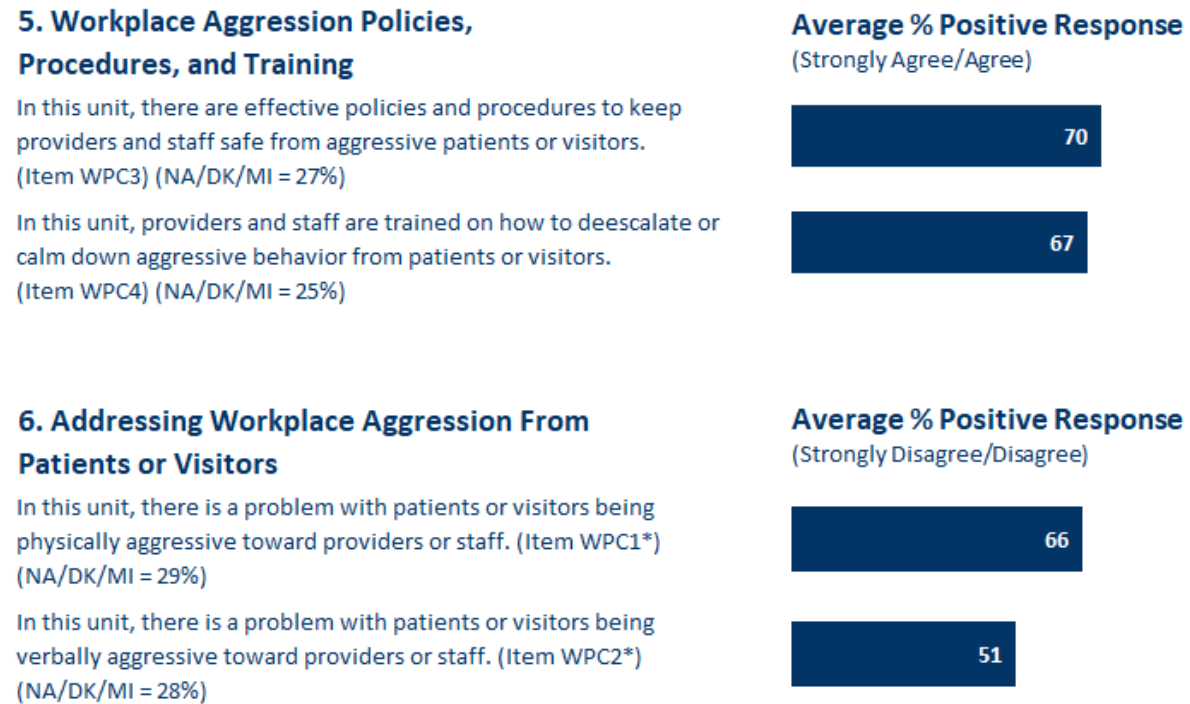
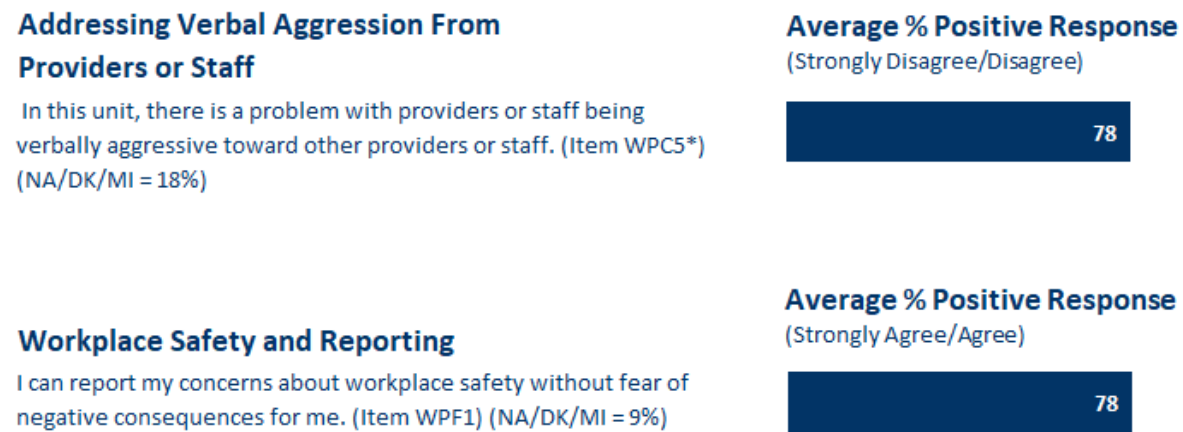


Chart 3. SOPS Workplace Safety Item Results - Average Percent Positive Response to Single Items - Pilot Study Hospitals

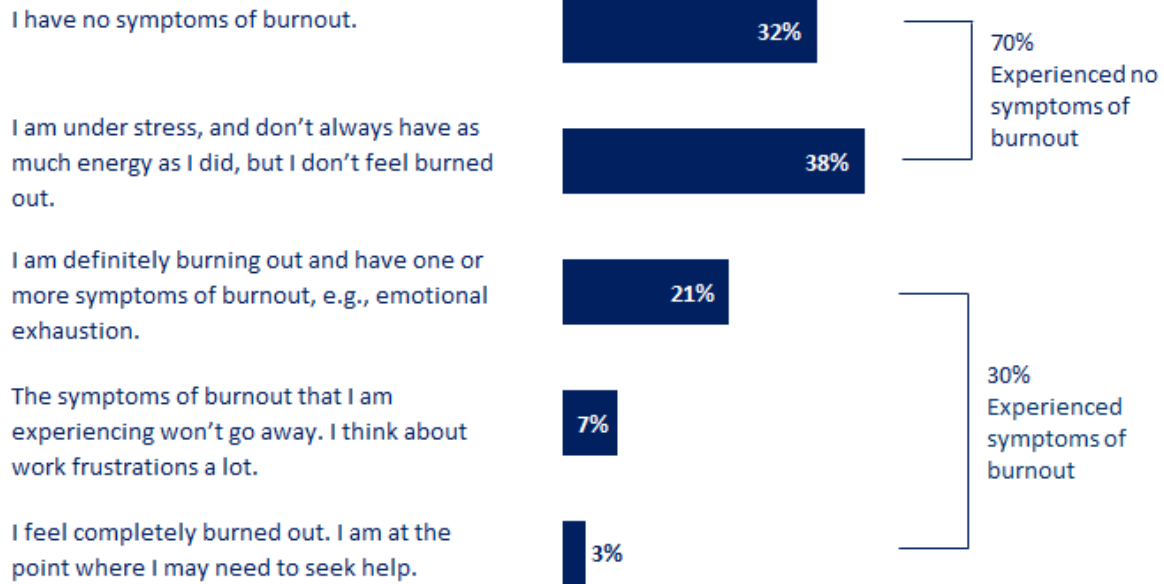


Note: An * indicates a negatively worded question where the % positive response is based on those who responded “Strongly Disagree” or “Disagree.” NA/DK/MI = percentage of respondents answering “Does not apply/Don’t know” or with missing data. The item average percent positive scores do not include NA/DK/MI responses.

Chart 4. SOPS Workplace Safety Item Results - Average Percentage of Respondents Reporting Burnout - Pilot Study Hospitals

Work Stress/Burnout

Using your own definition of “burnout,” please select one of the answers below.
(Item WPG1) (MI = 8%)



Notes:

(1) The Work Stress/Burnout item was adapted from Dr. Mark Linzer’s Mini-Z 2.0 survey tool (<https://www.professionalworklife.com/mini-z-survey>).

(2) The final SOPS Workplace Safety Supplemental Item Set for Hospitals has a slightly different third response option compared with what was included in the pilot test (shown in Chart 4). The final wording for the third response option has been updated to “I am beginning to burn out and have one or more symptoms of burnout, e.g., emotional exhaustion.”

(3) MI = percentage of respondents with missing data.

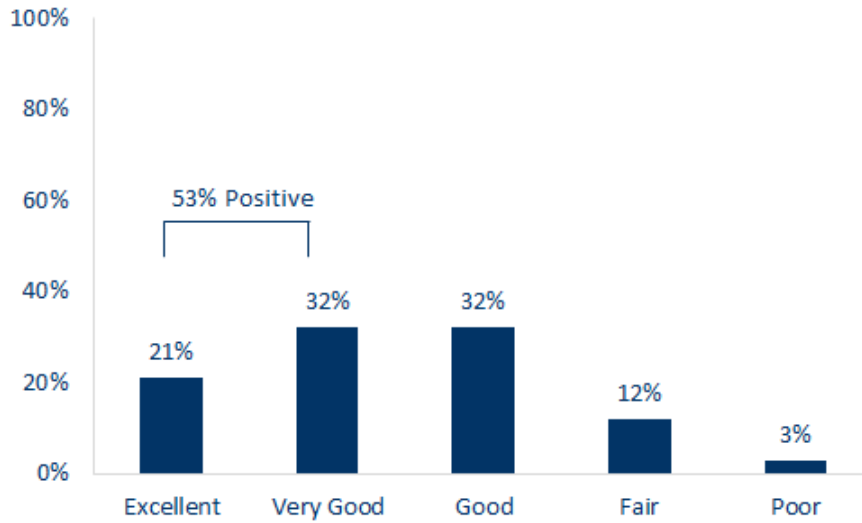
(4) Percentages indicate the average percent response for each response category. The percent “Experienced no symptoms of burnout” and “Experienced symptoms of burnout” displayed might not equal the sum of the response option percentages due to rounding. Percentages might not add to 100 due to rounding.

Chart 5. SOPS Workplace Safety Item Results - Average Unit/Work Area Rating on Workplace Safety for Providers and Staff - Pilot Study Hospitals

Overall Rating on Workplace Safety for Providers and Staff

How would you rate your unit/work area on workplace safety for providers and staff?

(Item WPH1) (MI = 7%)



Note: MI = percentage of respondents with missing data. Percentages indicate the average percent response for each response category.

Notes: Explanation of Calculations

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

Calculation of Percent Positive Scores

All of the SOPS Workplace Safety Supplemental Items ask respondents to answer using 5-point response categories in terms of agreement (Strongly agree, Agree, Neither, Disagree, Strongly disagree).

The survey items also include a “Does not apply/Don’t know” response option. In addition, each survey item has some missing data from respondents who simply did not answer the question. “Does not apply/Don’t know” and missing responses are excluded when calculating percentages of response to the survey items.

Item Percent Positive Response

The survey includes both positively worded items (e.g., “Hospital management provides adequate resources to ensure the safety of providers and staff”) and negatively worded items (e.g., “In this unit, there is a problem with patients or visitors being physically aggressive toward providers or staff”). Calculating the percent positive response on an item is different for positively and negatively worded items:

- **For positively worded items**, the percent positive response is the combined percentage of respondents within a hospital who answered “Strongly agree” or “Agree.”

For example, for the item “Hospital management provides adequate resources to ensure the safety of providers and staff,” if 50 percent of respondents within a hospital responded “Strongly agree” and 25 percent responded “Agree,” the item percent positive response for that hospital would be $50\% + 25\% = 75\%$ positive.

- **For negatively worded items**, the percent positive response is the combined percentage of respondents within a hospital who answered “Strongly disagree” or “Disagree.” Keep in mind that a negative answer to a negatively worded item indicates a *positive* response.

For example, for the item “In this unit, there is a problem with patients or visitors being physically aggressive toward providers or staff,” if 50 percent of respondents within a hospital responded “Strongly disagree” and 25 percent responded “Disagree,” the item percent positive response for that hospital would be $50\% + 25\% = 75\%$ positive.

Composite Measure Percent Positive Response

The six workplace safety culture composite measures are composed of two or three survey items. We calculated composite measure scores for each hospital 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 50.7 percent, 50.45 percent, and 65.4 percent, the hospital's composite measure percent positive response would be the average of these three percentages, or 55.5 percent positive, displayed as rounded to 56 percent.

Item and Composite Measure Percent Positive Scores Example

Table N1 on the next page shows an example of computing a percent positive score and the calculation of the “Does Not Apply/Don’t Know” and Missing percentages for the composite measure *Protection From Workplace Hazards*.

Table N1. Example of Computing Item Percent “Does Not Apply/Don’t Know” and Missing and Item and Composite Measure Percent Positive Scores for the SOPS Workplace Safety Supplemental Items

Three Items Measuring “Protection From Workplace Hazards”	Calculation of Percent Positive			Calculation of Percent NA/DK/MI		
	# of “Strongly Agree” or “Agree” Responses	Total # of Responses to the Item (Excluding Does Not Apply or Don’t Know and Missing Responses)	Percent Positive Response	Total # of NA/DK/MI Responses	Total # of Respondents in Hospital	Percent NA/DK/MI
“This unit has effective procedures to protect providers and staff from exposure to hazardous materials, contagious diseases, blood, or other bodily fluids.”	110	240	110/240=46%	50	290	50/290 = 17%
“In this unit, providers and staff are provided with the appropriate personal protective equipment (PPE).”	140	250	140/250= 56%	100	400	100/400 = 25%
“In this unit, providers and staff use PPE appropriately.”	125	260	125/260=48%	40	300	40/300 = 13%
Composite Measure Percent Positive Score = (46% + 56% + 48%) / 3 = 50%				--	--	--

Average Percent Positive Scores

We calculated the pilot study average percent positive scores for each of the six workplace safety composite measures and survey items by averaging the hospital-level percent positive scores of all hospitals in the pilot study. Because the percent positive is displayed as an overall average, scores from each hospital are weighted equally in their contribution to the calculation of the average.

The *Composite Measure Average* is calculated by averaging the average percent positive response of all six composite measures.