



Surveys on Patient Safety Culture™

2022 Updated Results for the AHRQ Surveys on Patient Safety Culture™ (SOPS®) Diagnostic Safety Supplemental Items for Medical Offices

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Purpose and Use of This Report

The AHRQ Surveys on Patient Safety Culture™ (SOPS®) Diagnostic Safety Supplemental Items assess the extent to which the organizational culture in medical offices supports the diagnostic process, accurate diagnoses, and communication around diagnoses. The supplemental items were designed to be administered toward the end of the SOPS Medical Office Survey, just before the background questions.

This report is an update of an earlier report of pilot study results on the SOPS Diagnostic Safety Supplemental Items. This updated report provides results from a total of 110 U.S. medical offices and 1,126 respondents: 66 medical offices that participated in a 2020 pilot study from September 2020 to November 2020 (included in the [earlier report](#) from April 2021) and 44 additional medical offices that administered the SOPS Diagnostic Safety Supplemental Items from September 2021 to October 2021 and submitted to the 2022 SOPS Medical Office Database (Table 1).

Table 1. Number of Participating Medical Offices and Respondents

Overall Statistic	Retained From the Pilot Study	Submitted to the 2022 SOPS Medical Office Database	Total
Number of medical offices	66	44	110
Number of individual survey respondents	812	314	1,126

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

Background and Response Rates

The SOPS Diagnostic Safety Supplemental Items include 12 survey items grouped into 3 composite measures (a composite measure consists of 3 to 5 survey items that assess the same area of patient safety culture), described in Table 2. 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.

Table 2. SOPS Diagnostic Safety Composite Measures

Diagnostic Safety Composite Measures	Definition: The extent to which...	Number of Items	Reliability (Cronbach's Alpha)
Time Availability	Enough time is available for providers to fully evaluate patients’ presenting problems, review relevant patient information, and finish patient notes by the end of their regular workday.	3	0.77
Testing and Referrals	Tests, referrals, and other diagnostic procedures are effectively tracked and followed; results are communicated to patients; and staff confirm whether patients went to high-priority appointments.	4	0.81
Provider and Staff Communication Around Diagnosis	Staff are encouraged to share their concerns about a patient’s health condition; providers document differential diagnoses, communicate with other providers about diagnostic issues, and discuss missed diagnoses with other providers.	5	0.76

The number of respondents, number of surveys administered, and response rates are shown in Table 3.

Table 3. Response Rate Statistics

Overall Response Rate Information	Statistic
Number of respondents	1,126
Number of surveys administered	2,637
Overall response rate	43%
Average Response Rate Information	Statistic
Average number of respondents per medical office (range: 3 to 64)	10
Average number of surveys administered per medical office (range: 5 to 101)	24
Average medical office response rate (range: 5% to 100%)	46%

Medical Office Characteristics

This section presents the characteristics of the medical offices.

Table 4. Medical Office Characteristics

Number of Providers per Week	Medical Offices (n=110)	
	Number	Percent
1-3	31	28%
4-9	53	48%
10-19	22	20%
20 or more	4	4%
Medical Office Ownership	Number	Percent
Community health center	12	11%
Hospital or health system	83	75%
Providers or physicians	4	4%
University or academic medical center	10	9%
Other	1	1%
Does your medical office have an incident/event reporting system that has a specific coded category to document diagnostic errors such as missed, wrong, or delayed diagnoses?	Number	Percent
Yes	73	66%
No	33	30%
Don't know	4	4%
Geographic Region	Number	Percent
New England/Mid-Atlantic	15	14%
South Atlantic	8	7%
East North Central	42	38%
West North Central	26	24%
South Central	9	8%
Mountain	5	5%
Pacific	5	5%

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

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

Table 5. Medical Office Specialties

Single vs. Multi-Specialty	Number	Percent
Single specialty	78	71%
Multi-specialty	32	29%
Single Specialty Offices Only (n=78)	Number	Percent
Cardiology	4	5%
Dermatology	2	3%
Emergency Medicine	1	1%
Family Practice/Family Medicine/Primary Care	31	40%
Gastroenterology	2	3%
General Surgery	1	1%
Hematology/Oncology	2	3%
Internal Medicine	9	12%
Neurology	1	1%
Obstetrics/Gynecology (OB/GYN) or GYN	5	6%
Ophthalmology	3	4%
Orthopedics	3	4%
Otolaryngology	1	1%
Pediatrics	2	3%
Psychiatry	1	1%
Pulmonary Medicine	1	1%
Radiology	1	1%
Surgery (All)	3	4%
Other specialties	5	6%

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

Respondent Characteristics

This section describes the characteristics of the respondents within the medical offices.

Table 6. Respondent Characteristics

Medical Office Staff Position	Respondents	
	Number	Percent
Administrative or clerical staff	286	27%
Other clinical staff or clinical support staff	276	26%
Registered nurse (RN), licensed vocational nurse (LVN), licensed practical nurse (LPN)	176	16%
Physician (M.D. or D.O.)	110	10%
Physician assistant, nurse practitioner, clinical nurse specialist, nurse midwife, advanced practice nurse, etc.	100	9%
Management	97	9%
Other position	26	2%
Total	1,071	100%
Missing	55	
Overall Total	1,126	
Tenure in Medical Office	Number	Percent
Less than 1 year	161	15%
1 year to less than 6 years	570	53%
6 years or more	338	32%
Total	1,069	100%
Missing	57	
Overall Total	1,126	
Hours Worked per Week in Medical Office	Number	Percent
1 to 32 hours	85	8%
33 to 40 hours	641	60%
41 hours or more	348	32%
Total	1,074	100%
Missing	52	
Overall total	1,126	

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

Composite Measure and Item Results

This section provides results for the composite measures and items for the SOPS Diagnostic Safety Supplemental Items. The methods for calculating the percent positive scores for the composite measures and items are described in Appendix B.

Composite Measure Results

Chart 1 shows the average percent positive response for each of the three patient safety culture composite measures. The patient safety culture 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 (80 percent) was *Testing and Referrals*.
- The composite measure with the lowest average percent positive (58 percent) was *Time Availability*.

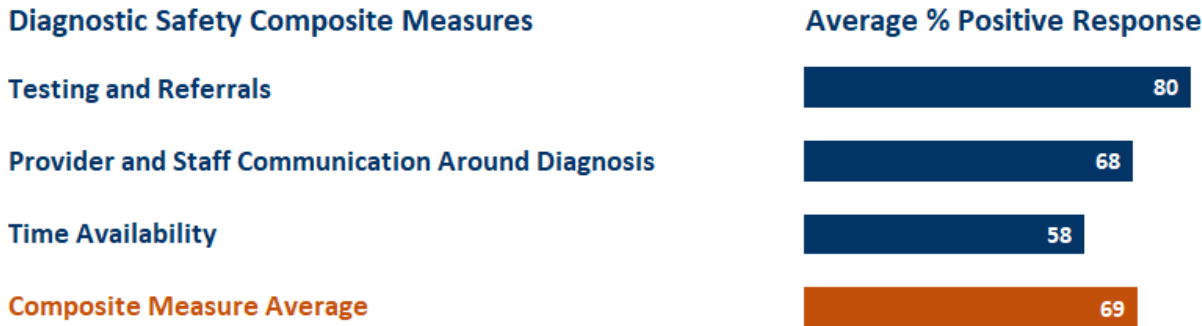
Item Results

Chart 2 shows the average percent positive response for each of the 12 survey items. The items are grouped by the patient safety culture 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 (87 percent) was: “*Providers in this office talk directly with specialists/radiologists/pathologists when something needs clarification.*”
- The item with the lowest average percent positive (48 percent) was: “*Providers in this office finish their patient notes by the end of their regular workday.*”

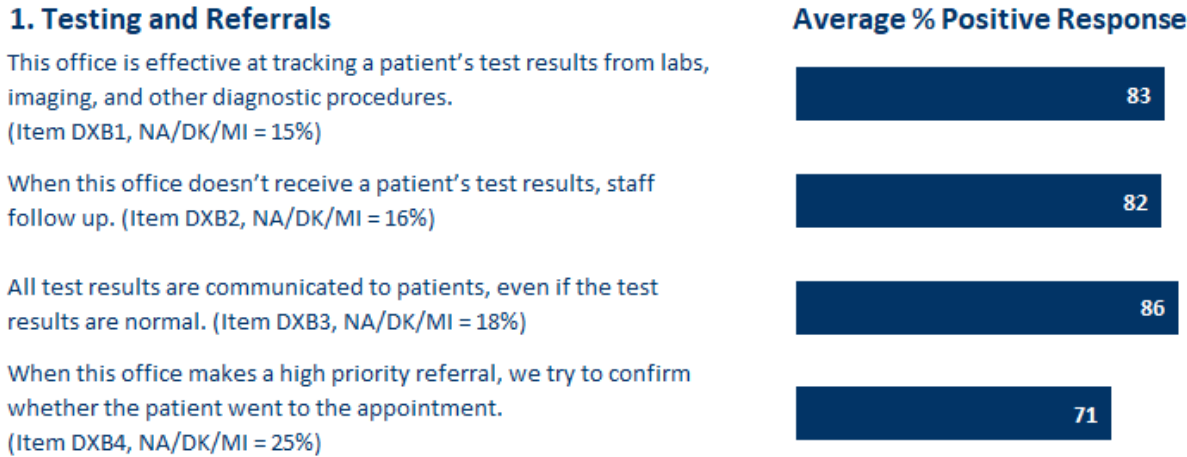
Chart 2 also provides the average percentages of respondents answering “Does not apply or Don’t Know” (NA/DK) or those who did not answer/left the item missing (MI) for each item (see Appendix B for how these percentages are calculated). For all but three items, the average NA/DK/MI percentages ranged from 12 percent to 25 percent. However, three items within the composite measure *Provider and Staff Communication Around Diagnosis* had higher average percentages of NA/DK/MI, ranging from 43 to 49 percent. When these items were further investigated, most providers (e.g., physicians, physician assistants, nurse practitioners) could answer these questions. However, nonprovider staff accounted for most of those answering “Does not apply/Don’t know.” This finding indicates room for improvement in communications with nonprovider staff on these items, which focus on providers documenting differential diagnosis; communicating with providers who may have missed a diagnosis; and being informed when a missed, wrong, or delayed diagnosis happens.

**Chart 1. SOPS Diagnostic Safety Composite Measure Results
Average Percent Positive Response – 2022 Updated Results**



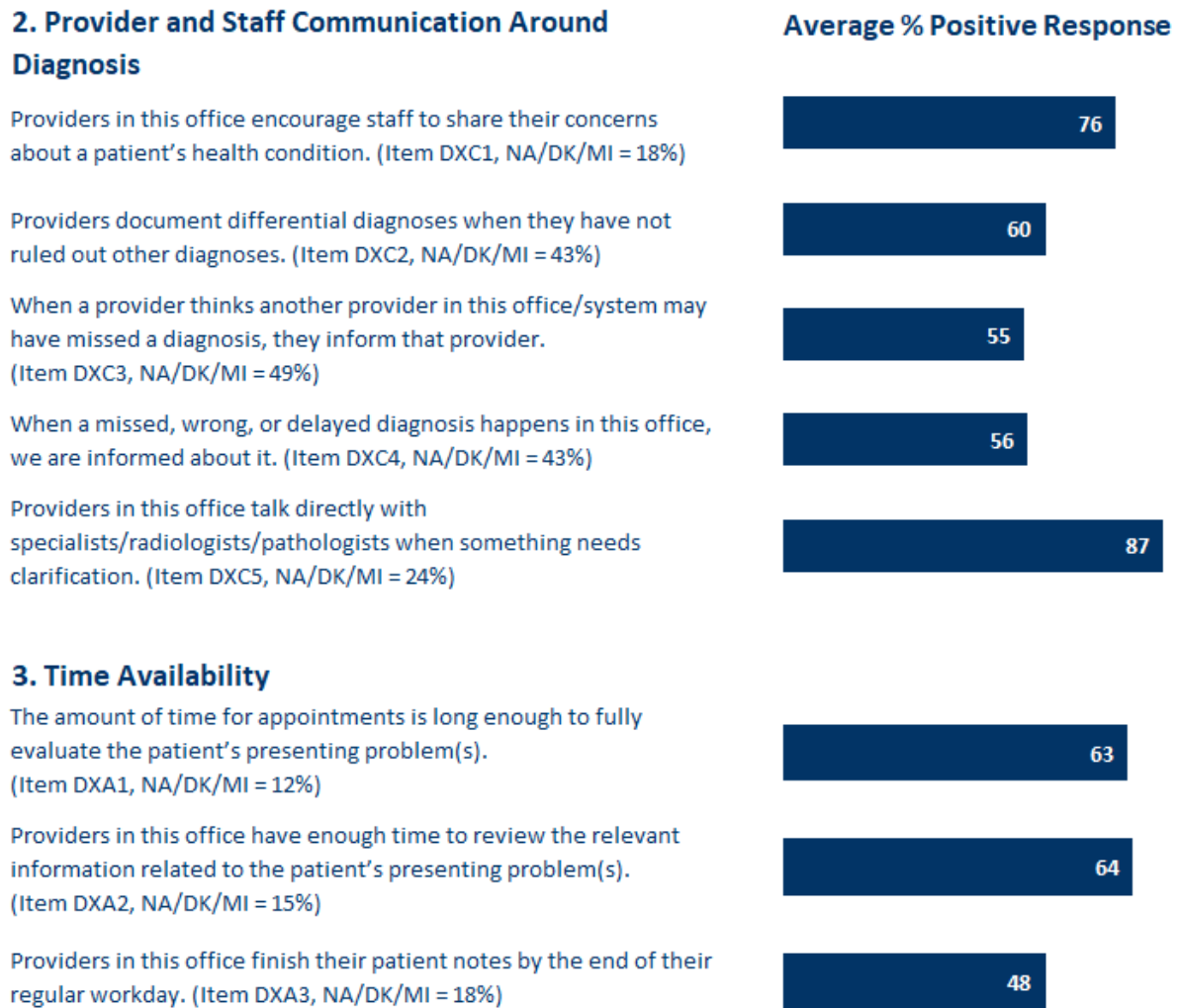
Note: (1) Each composite measure score is the average of the unrounded composite measure scores for all medical offices. (2) The Composite Measure Average is the average of the three unrounded composite measure scores for each participating medical office.

Chart 2. SOPS Diagnostic Safety Item Results - Average Percent Positive Response – 2022 Updated Results



Note: The item’s survey location is shown in parentheses after the item text. 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 Diagnostic Safety Item Results - Average Percent Positive Response - 2022 Updated Results (continued)



Note: The item’s survey location is shown in parentheses after the item text. 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.

Appendix A: Results by Respondent Characteristics

Appendix A presents data tables that show average percent positive scores on the composite measures and items on the SOPS Diagnostic Safety Supplemental Items across 110 medical offices broken down by the following respondent characteristics:

- Staff Position
- Tenure in Medical Office

Comparing Your Results

To compare your medical office's Diagnostic Safety Supplemental Item results with the data in Appendix A, your medical office will have to compute percent positive scores on the SOPS Diagnostic Safety Supplemental Item composite measures and items broken down by staff position or tenure in medical office.

Appendix A: Results by Respondent Characteristics

Staff Position

Note 1: These tables exclude medical offices that did not ask respondents to indicate their staff position. In addition, respondents who selected “Other” or who did not answer (missing) were not included.

Note 2: Each table shows the number of medical offices and respondents by staff position. However, the precise number of medical offices and respondents corresponding to each cell in the tables will vary because of individual nonresponse/missing data.

Table A-1. Composite Measure Average Percent Positive Response by Staff Position – 2022 Updated SOPS Diagnostic Safety Supplemental Item Results

SOPS Composite Measures	Staff Position					
	Admin./ Clerical Staff	Mgmt.	Nurse (RN/LVN/ LPN)	PA/NP/CNS/ Midwife/APN, etc.	Physician (M.D. or D.O.)	Other Clinical Staff or Clinical Support Staff
<i># Medical Offices</i>	80	58	69	68	56	82
<i># Respondents</i>	286	97	176	100	110	276
1. Testing and Referrals	80%	84%	81%	74%	79%	85%
2. Provider and Staff Communication Around Diagnosis	60%	75%	67%	71%	77%	59%
3. Time Availability	59%	64%	55%	50%	64%	63%
Composite Measure Average	66%	74%	68%	65%	74%	68%

Table A-2. Item Average Percent Positive Response by Staff Position – 2022 Updated SOPS Diagnostic Safety Supplemental Item Results (Page 1 of 2)

Survey Items by SOPS Composite Measure	Staff Position					
	Admin./ Clerical Staff	Mgmt.	Nurse (RN/LVN/ LPN)	PA/NP/CNS/ Midwife/APN, etc.	Physician (M.D. or D.O.)	Other Clinical Staff or Clinical Support Staff
<i># Medical Offices</i>	80	58	69	68	56	82
<i># Respondents</i>	286	97	176	100	110	276
1. Testing and Referrals	% Agree/Strongly Agree					
This office is effective at tracking a patient’s test results from labs, imaging, and other diagnostic procedures. (Item DXB1)	82%	85%	81%	77%	86%	89%
When this office doesn’t receive a patient’s test results, staff follow up. (Item DXB2)	81%	83%	86%	70%	74%	86%
All test results are communicated to patients, even if the test results are normal. (Item DXB3)	81%	89%	87%	83%	89%	89%
When this office makes a high priority referral, we try to confirm whether the patient went to the appointment. (Item DXB4)	72%	78%	69%	66%	62%	77%
2. Provider and Staff Communication Around Diagnosis	% Agree/Strongly Agree					
Providers in this office encourage staff to share their concerns about a patient’s health condition. (Item DXC1)	62%	81%	81%	87%	90%	70%
Providers document differential diagnoses when they have <u>not</u> ruled out other diagnoses. (Item DXC2)	46%	58%	57%	65%	71%	46%
When a provider thinks another provider in this office/system may have missed a diagnosis, they inform that provider. (Item DXC3)	51%	69%	55%	55%	62%	47%
When a missed, wrong, or delayed diagnosis happens in this office, we are informed about it. (Item DXC4)	52%	69%	48%	53%	63%	50%
Providers in this office talk directly with specialists/radiologists/pathologists when something needs clarification. (Item DXC5)	78%	92%	87%	90%	96%	77%

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

Table A-2. Item Average Percent Positive Response by Staff Position – 2022 Updated SOPS Diagnostic Safety Supplemental Item Results (Page 2 of 2)

Survey Items by SOPS Composite Measure	Staff Position					
	Admin./ Clerical Staff	Mgmt.	Nurse (RN/LVN/ LPN)	PA/NP/CNS/ Midwife/APN, etc.	Physician (M.D. or D.O.)	Other Clinical Staff or Clinical Support Staff
<i># Medical Offices</i>	80	58	69	68	56	82
<i># Respondents</i>	286	97	176	100	110	276
3. Time Availability	% Agree/Strongly Agree					
The amount of time for appointments is long enough to fully evaluate the patient’s presenting problem(s). (Item DXA1)	64%	70%	60%	66%	69%	67%
Providers in this office have enough time to review the relevant information related to the patient’s presenting problem(s). (Item DXA2)	64%	71%	59%	54%	70%	69%
Providers in this office finish their patient notes by the end of their regular workday. (Item DXA3)	49%	53%	46%	29%	53%	52%

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

Appendix A: Results by Respondent Characteristics

Tenure in Medical Office

Note 1: These tables exclude medical offices that did not ask respondents to indicate their tenure in their medical office. In addition, respondents who did not answer (missing) were not included.

Note 2: Each table shows the number of medical offices and respondents by tenure in their medical office. However, the precise number of medical offices and respondents corresponding to each cell in the tables will vary because of individual nonresponse/missing data.

Table A-3. Composite Measure Average Percent Positive Response by Tenure in Medical Office – 2022 Updated SOPS Diagnostic Safety Supplemental Item Results

SOPS Composite Measures	Tenure in Medical Office		
	<1 Year	1 Year to <6 Years	6 Years or More
<i># Medical Offices</i>	73	104	91
<i># Respondents</i>	161	570	338
1. Testing and Referrals	83%	79%	79%
2. Provider and Staff Communication Around Diagnosis	74%	63%	69%
3. Time Availability	64%	55%	61%
Composite Measure Average	73%	65%	69%

Table A-4. Item Average Percent Positive Response by Tenure in Medical Office – 2022 Updated SOPS Diagnostic Safety Supplemental Item Results
 (Page 1 of 2)

Survey Items by SOPS Composite Measure	Tenure in Medical Office		
	<1 Year	1 Year to <6 Years	6 Years or More
<i># Medical Offices</i>	73	104	91
<i># Respondents</i>	161	570	338
1. Testing and Referrals	% Agree/Strongly Agree		
This office is effective at tracking a patient’s test results from labs, imaging, and other diagnostic procedures. (Item DXB1)	85%	81%	83%
When this office doesn’t receive a patient’s test results, staff follow up. (Item DXB2)	80%	79%	84%
All test results are communicated to patients, even if the test results are normal (Item DXB3)	90%	83%	83%
When this office makes a high priority referral, we try to confirm whether the patient went to the appointment. (Item DXB4)	79%	73%	63%
2. Provider and Staff Communication Around Diagnosis	% Agree/Strongly Agree		
Providers in this office encourage staff to share their concerns about a patient’s health condition. (Item DXC1)	78%	73%	78%
Providers document differential diagnoses when they have <u>not</u> ruled out other diagnoses. (Item DXC2)	60%	58%	59%
When a provider thinks another provider in this office/system may have missed a diagnosis, they inform that provider. (Item DXC3)	58%	54%	58%
When a missed, wrong, or delayed diagnosis happens in this office, we are informed about it. (Item DXC4)	71%	48%	56%
Providers in this office talk directly with specialists/radiologists/pathologists when something needs clarification. (Item DXC5)	90%	81%	91%

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

Table A-4. Item Average Percent Positive Response by Tenure in Medical Office – 2022 Updated SOPS Diagnostic Safety Supplemental Item Results
 (Page 2 of 2)

Survey Items by SOPS Composite Measure	Tenure in Medical Office		
	<1 Year	1 Year to <6 Years	6 Years or More
<i># Medical Offices</i>	73	104	91
<i># Respondents</i>	161	570	338
3. Time Availability	% Agree/Strongly Agree		
The amount of time for appointments is long enough to fully evaluate the patient’s presenting problem(s). (Item DXA1)	67%	60%	68%
Providers in this office have enough time to review the relevant information related to the patient’s presenting problem(s). (Item DXA2)	69%	59%	67%
Providers in this office finish their patient notes by the end of their regular workday. (Item DXA3)	52%	44%	49%

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

Appendix B: 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 Diagnostic 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's items also include a "Does not apply/Don't know" response option. In addition, each survey item will probably have some missing data from respondents who 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 only includes positively worded items:

- **Percent positive response** is the combined percentage of respondents within a medical office who answered "Strongly agree" or "Agree."

For example, for the item "The amount of time for appointments is long enough to fully evaluate the patient's presenting problem(s)," if 50 percent of respondents within a medical office responded "Strongly agree" and 25 percent responded "Agree," the item percent positive response for that medical office would be $50\% + 25\% = 75\%$ positive.

Composite Measure Percent Positive Response

The three patient safety culture composite measures are composed of three, four, or five survey items. We calculated composite measure scores for each medical office by averaging the 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 percent, 55 percent, and 60 percent, the medical office's composite measure percent positive response would be the average of these three percentages, or 55 percent positive.

Item and Composite Measure Percent Positive Scores Example

We calculated average percent positive scores for each of the three patient safety culture composite measures and survey items by averaging the medical office-level percent positive scores of all participating medical offices. Since the percent positive is displayed as an overall average, scores from each medical office are weighted equally in their contribution to the calculation of the average.

Table B-1 shows an example of computing a percent positive score and the calculation of the “Does Not Apply/Don’t Know” and Missing (NA/DK/MI) percentages for the composite measure *Time Availability*.

Table B-1. Example of Computing Item Percent “Does Not Apply/Don’t Know” and Missing and Item and Composite Measure Percent Positive Scores for the SOPS Diagnostic Safety Supplemental Items

Three Items Measuring "Time Availability"	Calculation of Percent Positive			Calculation of Percent NA/DK/MI		
	# of "Strongly Agree" or "Agree" Responses	Total # of Responses to the Item (Excluding NA/DK/MI Responses)	Percent Positive Response	Total # of NA/DK/MI Responses	Total # of Respondents in Medical Office	Percent NA/DK/MI
"The amount of time for appointments is long enough to fully evaluate the patient's presenting problem(s)."	110	240	110/240=45.8%	50	290	50/290 = 17.2%
"Providers in this office have enough time to review the relevant information related to the patient's presenting problem(s)."	140	250	140/250= 56.0%	100	400	100/400 = 25.0%
"Providers in this office finish their patient notes by the end of their regular workday."	125	260	125/260=48.1%	40	300	40/300 = 13.3%
Composite Measure Percent Positive Score = (45.8% + 56.0% + 48.1%) / 3 = 50%				--	--	--

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