

An Evaluation of the Quality of Data Reported in the MEPS Medical Organization Survey, 2015–2016

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Abstract

A Medical Organization Survey (MOS), sponsored by the Robert Wood Johnson Foundation, was incorporated into both the 2015 and 2016 MEPS Medical Provider Component (MPC) data collection cycles. The MOS initiative has enabled researchers to expand analyses of MEPS data to incorporate the potential effect of physician practice characteristics on health care access, utilization, and expenditures among persons who saw their usual source of care. This working paper provides insight regarding the quality of the MOS data through descriptive analyses of data from practices that were in the sample and responded in both 2015 and 2016. Two indicators of data quality are assessed: 1) average annual 2015–16 item nonresponse rates; and 2) agreement rates between responses across the two years. The results suggest that many of the MOS data items are of high or reasonable quality. However, revising or simplifying the few items with high nonresponse in the 2015 and 2016 surveys may be advisable if a future MOS is undertaken. Moreover, potential data quality problems for items with lower levels of agreement between responses in 2015 and 2016 may also be considered before including those specific items verbatim in a future survey.

Introduction

A Medical Organization Survey (MOS), sponsored by the Robert Wood Johnson Foundation, was incorporated into both the 2015 and 2016 MEPS Medical Provider Component (MPC) data collection cycles. Detailed information on both the MPC and MOS can be found in MEPS Methodology Report #32 (Stagnitti, Machlin et al.). In each of the two years (2015 and 2016), the MOS collected data about the organizational practices of usual source of care (USC) physicians seen by sample persons in the MEPS Household Component (MEPS-HC). The MOS initiative has enabled researchers to expand analyses of MEPS data to incorporate the potential effect of physician practice characteristics on health care access, utilization, and expenditures among persons who saw their usual source of care. The data collected includes information on practice ownership, financial incentives, provider and patient mix, access to services, coordination and quality of care, and use of electronic health records. Approximately two-thirds of responding persons were either office managers/staff or receptionists. The questionnaires were similar but not identical in both years; some modifications were made to the 2016 instrument based on experiences administering the 2015 version. The questionnaires are included in Appendix A-1 (2015) and Appendix A-2 (2016) of this report. Additional detailed information on the MOS is contained in MEPS Working Paper #17002 (Stagnitti and Dowd).

The purpose of this working paper is to provide insight regarding the quality of the MOS data through an analysis of data from practices that were in the sample and responded in both 2015 and 2016. More specifically, two indicators of data quality are presented: 1) average annual 2015–16 item nonresponse rates; and 2) agreement rates between responses across the two years. A high level of item nonresponse indicates difficulty or unwillingness to provide responses and increases the likelihood of bias when the item is included in analyses. A high level of

consistency is regarded as an indicator of better data quality on the premise that a discrepancy between years is more likely to be attributable to reporting error in at least one of the years than to a real change in the practice characteristic occurring in the short time from 2015 to 2016 (though real changes could certainly have occurred in some instances). Both observed agreement rates and kappa statistics (Sim and Wright), which adjust for expected agreement between years due to chance, are provided for categorical MOS data items. Similarly, observed agreement rates and Lin's concordance coefficients (I-Kuei Lin), which reflect agreement between years after accounting for chance, are presented for the continuous MOS data items.

The results presented in this document cover most of the MOS questionnaire items and are organized in three sections according to the type of variable: 1) binary items (i.e., yes/no); 2) categorical variables with more than two categories; and 3) continuous variable items. Table 1 contains a listing by type and brief descriptions of the MOS public use file (PUF) variables that are included in this analysis (total of 19 variables).

Table 1
List of MOS PUF Variables with Descriptions

MOS Item	Abbreviated Description	Survey Item in 2015 (Appendix A-1)	Survey Item in 2016 (Appendix A-2)
Binary Items (i.e., yes/no)			
ACO	Participate in ACO w/MEDICARE or private insurance	11	18
BASESAL	Physicians paid base salary	12	20
CAPITATD	Practice has capitated contracts	10	17
CASEMGR	Case manager coordinate patient care	17	11
EHREMR	Practice uses Electronic Health/Medical Records	19	13
HOSDCCHK	Check-in w/ physician 48 hrs. after hospital discharge	18	12
MEDHOME	Certified patient-centered medical home	14	19
MULTLOC	Does practice have more than 1 location	3	2
MULTSPEC	Multispecialty group practice	2	1
PCREMIND	Send preventive care reminders to patient	15	9
POWNER	Physicians in practice own practice	1	3
PRACXRAY	Practice x-ray chest & extremities onsite	8	7
QUALCARE	Reports to physician on clinical quality care	16	10
SAMEDAY	Practice set time aside for same-day appointments	13	8
Categorical Items with More than Two Categories			
PERMCAID	Percent covered by Medicaid	9	16
PRACTYPX	Practice type	4	3a
Continuous Items			
NUMDOC	Approx. # full-time + part-time physicians in practice	5	4
NUMNPA	Approx. # nurse practitioner + physician assistants	7	6
NUMPCP	Approx. # primary care physicians in practice	6	5

Analytic sample

Of the 4,216 MOS responding organizations in 2015, and the 5,201 responding organizations in 2016, 1,284 responded in both years and were the baseline sample used for this analysis.

However, sample sizes are lower for comparisons of agreement in responses between the two years because observations with item nonresponse in either year are excluded. While the MOS PUFs contain person-level data and include analytic weights that can be used to produce national

estimates (see References at end of this document for links to the MOS PUF documentation), the unit of analysis for this evaluation is a physician practice and estimates are unweighted because a national weight at the provider level is not technically feasible to compute under the MOS sample design. In general, characteristics of the 1,284 practices that responded in both years and were used for this analysis do not appear dramatically different from those for the practices that responded in the 2015 survey only or the 2016 survey only (Appendix B).

Results

Yes/No Items

There are 14 MOS questions having binary response categories (i.e., yes/no) for which all practices were eligible to answer (i.e., not preceded by a skip pattern). Table 2 contains the quality measures (i.e., average annual item nonresponse and 2015–16 agreement rate/kappa) for these 14 items (see Table 1 for a description of variables). This table is sorted in descending order by the average annual item nonresponse rates. For additional context, the table also provides the proportion of responses that were “yes” among practices that responded to each item.

Table 2
Response Characteristics for MOS Yes/No Items, 2015 and 2016

Item	Item Nonresponse Rate (%) <i>N=1,284 (responders in both years)</i>			N	2015–16 Agreement Rate (%) <i>(excluding item nonresponse in either year)</i>			% of Providers Responding “Yes” <i>(excluding item nonresponse in either year)</i>		
	2015	2016	Avg. Annual		Observed Agreement	Expected Agreement	Kappa	2015	2016	Avg. Annual
BASESAL	39.6	46.9	43.3	458	80.4	63.7	0.46*	75.8	76.6	76.2
ACO	27.0	30.7	28.9	674	67.8	52.5	0.32	61.3	61.1	61.2
CAPITATD	23.5	28.5	26.0	737	69.9	50.3	0.39	52.9	54.5	53.7
MEDHOME	15.8	19.2	17.5	889	73.7	50.0	0.47*	50.4	50.2	50.3
QUALCARE	12.6	11.8	12.2	992	84.4	81.1	0.17	87.5	91.4	89.5
HOSDCCHK	11.7	9.6	10.7	1,033	73.5	64.4	0.25	77.0	76.8	76.9
CASEMGR	6.1	6.6	6.4	1,132	67.1	50.2	0.34	51.2	56.5	53.9
POWNER	4.8	4.1	4.4	1,174	89.6	52.9	0.79**	62.8	61.2	62.0
PCREMIND	1.8	2.2	2.0	1,235	90.5	84.7	0.38	91.0	92.3	91.7
MULTSPEC	0.5	1.5	1.0	1,258	76.3	53.7	0.49*	36.5	36.3	36.4
SAMEDAY	1.0	0.9	1.0	1,260	92.4	91.1	0.15	95.1	95.6	95.3
PRACXRAY	0.9	0.9	0.9	1,263	91.5	60.1	0.79**	27.7	27.4	27.6
EHREMR	0.5	0.5	0.5	1,271	95.1	81.0	0.74**	89.4	89.4	89.4
MULTLOC	0.0	0.3	0.2	1,280	85.6	51.0	0.71**	43.6	42.0	42.8

* Moderate agreement (.41–.60)

** Substantial agreement (.61–.80)

The 2015–16 average annual item nonresponse rate was highest for BASESAL (43.3 percent) and was also quite high for ACO (28.9 percent) and CAPITATD (26.0 percent). In contrast, item nonresponse rates were very low (2 percent or less) for six of the variables (PCREMIND, MULTSPEC, SAMEDAY, PRACXRAY, EHREMR, and MULTLOC) and ranged from 4.4 to 17.5 percent for the remaining five variables.

Among the 14 items, the observed agreement rate between 2015 and 2016 responses for practices responding to the item both years ranged from about 67 to 95 percent. These agreement rates were highest (over 90 percent) for EHREMR (95.1 percent), SAMEDAY (92.4 percent),

PRACXRAY (91.5 percent), and PCREMIND (90.4 percent). Between about three-fourths and two-thirds of responses were consistent in 2015 and 2016 for the following variables: MULTSPEC (76.3 percent), HOSDCCHK (73.5 percent), MEDHOME (73.7 percent), CAPITATD (69.9 percent), ACO (67.8 percent), and CASEMGR (67.1 percent). The kappa statistics provide an index measure of consistency after adjusting for expected agreement due to chance. This agreement measure was highest for POWNER (.79), PRACXRAY (.79), EHREMR (.74), and MULTLOC (.71) and lowest for QUALCARE (.17), SAMEDAY (.15), and HOSDCCHK (.25).

Items with more than two categories

The quality measure results for the two MOS variables with more than two categories are described in this section and shown in Tables 3a (PERMCAID) and 3b (PRACTYPX), along with the distribution of responses across the categories among those who responded to the item.

PERMCAID

This questionnaire item asks the practice respondent to select a category that best reflects the percentage of the practice's patients that are covered by Medicaid. The 2015 questionnaire contained a three-category item (<10%, 10–50%, >50%). In the 2016 instrument, the lowest category (<10%) was split into two categories (0%, 1–9%) which resulted in a four-category variable. These split categories were collapsed in Table 3a to allow for an appropriate three-category comparison between the two years.

Table 3a**Response Characteristics for Item on *Percent of Practice's Patients Covered by Medicaid (PERMCAID)*, 2015 and 2016**

Characteristic	2015	2016	Avg. Annual
Item Nonresponse (%) (N=1,284) (providers responding in both years)	14.1	13.2	13.6
Response % Distribution (N=982) (excluding item nonresponse in either year)			
<10%	29.8	29.1	29.5
10–50%	35.2	35.9	35.6
>50%	34.9	35.0	35.0
Total	100.0	100.0	100.0

The 2015–16 average annual nonresponse rate for this item was 13.6 percent. About two-thirds (65.1 percent) of the responses from practices that responded to the item both years were consistent and the kappa measure (.47) indicates a moderate level of consistency after accounting for change agreement (Table 3a). Inconsistent responses were about equally likely to be in a higher or lower percentage category in 2016 versus 2015 (not shown in table).

PRACTYPX

This question, which asks the practice respondent to select an option that best describes the practice, was administered to all practices in 2015 but in 2016 was skipped when the response was “yes” to a prior question on whether the practice was owned by physicians in the practice (POWNER) (See items 3-3a in Appendix A-2 for 2016, versus item 4 in Appendix A-1 for 2015). Therefore, the equivalent of “yes” responses to POWNER in 2015 are excluded to make the comparison between years comparable on this variable. In addition, in 2015, a non-trivial number of practices indicated they were owned by a “corporation” through the “Other, please specify” response option. Consequently it was coded as its own category for the 2015 PUF release and added in 2016 as a response category option.

After the edits described above were implemented, the 2015–16 average annual nonresponse rate for this item was 4.9 percent (Table 3b). About two-thirds (68.9 percent) of the practices that responded to the item each year provided consistent responses, and the kappa measure (.52) indicates a moderate level of consistency after accounting for change agreement. Among the categories shown in Table 3b, responses of *physician network owned by a hospital* were most likely to be consistent with only about 17 percent of responses in 2015 changing to another category in 2016 (2015–16 change rates not shown in table).

Table 3b
Response Characteristics for Item on *Practice Type* (PRACTYPX), 2015 and 2016

Characteristic	2015	2016	Avg. Annual
Item Nonresponse (N=387) (<i>providers responding in both years and not owned by physicians in practice</i>)	2.8	7.0	4.9
Response % Distribution (<i>excluding item nonresponse in each respective year</i>)			
An independent practice	3.4	0.9	2.1
A physician network owned by a hospital	35.4	30.3	32.9
A non-profit or gov't clinic	47.7	48.6	48.1
A practice owned by an academic medical center	6.0	7.7	6.9
An HMO	0.3	0.9	0.6
Corporation owned	6.3	11.4	8.9
Other, please specify	0.9	0.3	0.6
Total	100.0	100.0	100.0

Continuous variable items

The quality measure results for the three continuous MOS variables (NUMDOC, NUMPCP, and NUMNPA) are shown in Tables 4a, 4b, and 4c, respectively, and described in this section. The 2015–16 average annual nonresponse rates for these items were low and similar (3.3–3.8

percent). In general, responses were fairly congruent in the two years for these items¹. For example, 54.4 percent of the responses for NUMDOC, 57.8 percent for NUMPCP, and 57.1 percent for NUMNPA were identical in the two years, while an additional 26.5, 24.5, and 30.9 percent, respectively, differed by only one or two providers (these estimates are not shown in a table). The distributions of differences between 2015 and 2016 responses are presented to summarize agreement for these continuous measures and are described in more detail below. It is striking that the distribution tail is most extreme for NUMDOC and least extreme for NUMNPA, but not surprising considering the higher baseline 2015 mean for NUMDOC (9.5) than NUMNPA (2.8).

Table 4a
Item Nonresponse Rate (%) for MOS Counts of Medical Staff, 2015 and 2016*

Item	2015	2016	Avg. Annual
NUMDOC	2.7	4.0	3.4
NUMPCP	3.3	4.2	3.8
NUMNPA	2.8	3.8	3.3

*Based on responders in both years (N=1,284).

¹ Multi-location practices that gave responses for their specific location in one year but for the practice as a whole in the other year were excluded from these comparisons to avoid exaggerated discrepancies in number of employees arising from this inconsistency.

Table 4b
Mean and Median MOS Counts of Medical Staff, 2015 and 2016

Item	N*	Mean			Median		
		2015	2016	Avg. Annual	2015	2016	Avg. Annual
NUMDOC	886	9.5	11.4	10.4	3.0	3.0	3.0
NUMPCP	882	5.7	6.7	6.2	2.0	2.0	2.0
NUMNPA	886	2.8	3.9	3.3	1.0	1.0	1.0

*Based on responders in both years. Practices that did not report consistently across years for either a specific location or across multiple locations for a practice were excluded from these tabulations.

Table 4c
Distributions of Changes in Counts from 2015 to 2016 for MOS Counts of Medical Staff, 2015 and 2016

Item	NUMDOC	NUMPCP	NUMNPA
N*	886	882	886
Mean change	1.89	0.99	1.12
5th percentile	-5	-4	-2
10th percentile	-2	-2	-1
25th percentile	0	0	0
Median	0	0	0
75th percentile	0	0	1
90th percentile	3	3	2
95th percentile	11	7	5
Lin's concordance	0.61	0.56	0.52

*Based on responders in both years.

NUMDOC

The 2015–16 average annual number of physicians per practice was 10.4 while the average median was 3.0. Among practices that responded to NUMDOC in both years, the median difference in number of physicians reported (2016 minus 2015) was 0 and the interquartile range in differences was 0 to 0. At the tails of the distribution of differences, 5 percent of the practices reported at least five fewer physicians in 2016 than 2015 while another 5 percent reported 11 or

more physicians in 2016 than 2015. The Lin's concordance coefficient for this variable (.61) indicates a fairly strong level of consistency in responses.

NUMPCP

The 2015–16 average annual number of primary care physicians per practice was 6.2 while the average median was 2.0. Among practices that responded to NUMPCP in both years, the median difference in number of primary care physicians reported (2016 minus 2015) was 0 while the interquartile range in differences was 0 to 0. At the tails of the distribution of differences, 5 percent of practices reported at least four fewer primary care physicians in 2016 than 2015 while another 5 percent reported at least seven more in 2016 than 2015. The Lin's concordance coefficient (.56) for this variable indicates a moderate level of consistency in responses.

NUMNPA

The 2015–16 average annual number of nurse practitioners/physician assistants per practice was 3.4 while the median both years was 1.0. Among practices that responded to NUMNPA in both years, the median difference in number of nurse practitioners/physician assistants reported (2016 minus 2015) was 0 while the interquartile range in differences was 0 to 1. At the tails of the distribution of differences, 5 percent of practices reported at least two fewer nurse practitioners/physician assistants in 2016 than 2015 while another 5 percent reported at least five more in 2016 than 2015. The Lin's concordance coefficient for this variable (.52) indicates a moderate level of consistency in responses.

Summary/Discussion: Implications of Findings for Future MOS Surveys

The 2015 and 2016 MOS data enable researchers to expand analyses of MEPS data to incorporate the potential effect of physician practices' characteristics on health care access,

utilization, and expenditures among persons who saw their usual source of care (Soni and Stagnitti; Stagnitti, Moriya et al.). This evaluation provides insight regarding the quality of the data collected in these two MOS iterations.

Perhaps the most significant finding is that a few of the binary “yes/no” questions had exceptionally high (BASESAL, ACO, and CAPITATD) or moderately high (MEDHOME, QUALCARE, and HOSDCCHK) item nonresponse rates in both years.² This result indicates that respondents had difficulty answering the questions, which suggests that they need revision.

Alternatively, imputation models could be explored to complete the missing data on these items.

The data quality implications of our analysis of agreement between 2015 and 2016 responses is not completely straightforward. In particular, inconsistent responses for a particular item across the two MOS iterations could be attributable to a variety of factors including dissimilar question interpretations by different responding persons and changes in question order or wording.

Moreover, some types of organizational shifts may be occurring rapidly so there may have been true changes in characteristics of some practices that were in the MOS sample both years.

Nevertheless, notable disagreement in responses in two consecutive years may be indicative of potential data quality problems. Items with lower 2015–16 agreement rates (<75 percent) and

kappa statistics (<.40) in our analysis include ACO, CAPITATD, CASEMGR, and

HOSDCCHK. PRACTYPX exhibited moderate agreement (68.9 percent, kappa .52) but some of the inconsistent responses to this item are likely attributable to true shifts in a rapidly changing environment for physician practice structures and to the slightly different questions used to collect this information in the 2 years.

² This also holds true based on the full sample contained in the MOS PUFs rather than just the 1,284 respondents both years.

The reporting of numbers of types of providers in the practice (NUMDOC, NUMPCP, and NUMNPA) appeared to be generally of reasonable quality as evidenced by low item nonresponse and moderate overall agreement levels between 2015 and 2016 responses. However, large inconsistencies occurred between years for a small percentage of cases. Further evaluation of the widely discrepant cases may help provide greater insight on the quality of data for these continuous measures and potential improvements to collection of this type of information.

Although it was not possible to identify whether the same individual responded to the 2015 and 2016 surveys, information on the role of the respondent in the practice was available for each year (see Table 5 below). About one-third of the 1,284 respondents were in the same role category each year (not shown in table). Not surprisingly, the 2015–16 agreement rates and kappa statistics presented in this paper would have been somewhat higher if restricted to practices with respondents in the same role category both years (data not shown). This finding supports our expectation that the same respondent or type of respondent would be more likely to answer consistently across years. In addition, we found no evidence from the limited sample sizes that responses were more or less likely to be consistent for some respondent role type(s) shown in Table 5 than for others.

Table 5
Distribution of Responses to Item on *Role of Respondent in Practice* (ROLEX), 2015 and 2016¹

Role of Respondent in Practice ²	Response Percent Distribution		
	2015	2016	Avg. Annual
Practice Administrator	12.9	9.5	11.2
Medical Director/Physician	3.4	1.9	2.7
Office/Other Manager	40.0	32.0	36.0
Office Staff (non-manager)	2.4	13.2	7.8
Non-physician, Medical/Nurse/Medical Assistant	10.1	15.1	12.6
Billing	12.1	10.2	11.2
Receptionist	19.2	18.0	18.6
Other, please specify	0.1	0.1	0.1
Total	100.0	100.0	

¹Based on responders in both years (N=1,284).

²2015/2016 ROLEX response categories were collapsed/combined to yield standardized categories across the two years.

In summary, the 2015 and 2016 MEPS MOS are unique data sources and valuable supplements to MEPS person-level data. The descriptive analysis presented in this report suggests that many of the survey data items appear to be of high or reasonable quality. However, if a future MOS is undertaken, revising or simplifying (if possible) items with high nonresponse in the 2015 and 2016 surveys may be advisable. Moreover, potential data quality problems for items with lower levels of agreement between responses in 2015 and 2016 may also be considered before including those specific items verbatim in a future survey.

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Appendix A-1

2015 MOS Questionnaire

[Accessible HTML](#)



Medical Expenditure Panel Survey

OMB#: 0935-0118
Exp. Date 12/31/2018

Reference #:

MEPS MPC Medical Organizations Survey (MOS)

The Medical Organizations Survey (MOS) is an expansion of the Medical Expenditure Panel Survey Medical Provider Component (MEPS MPC). This project was funded in part by a grant from the Robert Wood Johnson Foundation. The purpose of the survey is to collect information about how different medical practices are organized and what resources they have available for providing care. Your participation is greatly appreciated. Your answers are completely confidential. Participation in this survey is voluntary. This survey will take 5 - 10 minutes to complete. If you have questions or comments about this survey, please call 866-800-9203. If you have any questions about your rights as a study participant, you can call RTI's Office of Research Protection at (919) 316-3358 in Durham, NC or 1-866-214-2043 (a toll-free number).

PLEASE FOLLOW SKIP INSTRUCTIONS AS LISTED. OTHERWISE, CONTINUE TO THE NEXT QUESTION.

1) Who owns this medical practice? (CIRCLE ONLY ONE RESPONSE)

- Physicians in the practice..... 1
Another physician group..... 2
Other, please specify..... 6

- I don't know..... -1
I'd rather not answer this question..... -2

2) Is this a multi-specialty group practice? (CIRCLE ONLY ONE RESPONSE)

- Yes..... 1
No..... 2
I don't know..... -1
I'd rather not answer this question..... -2

3) Does this medical practice have more than one location? (CIRCLE ONLY ONE RESPONSE)

- Yes..... 1
No..... 2
I don't know..... -1
I'd rather not answer this question..... -2

4) Please indicate which of these best describes this practice. (CIRCLE ONLY ONE RESPONSE)

- An independent practice..... 1
A physician network owned by a hospital..... 2
A non-profit or government clinic..... 3
A practice owned by an academic medical center..... 4
An HMO..... 5
Other, please specify..... 6

- I don't know..... -1
I'd rather not answer this question..... -2

5) Approximately how many physicians work either part or full time at this practice?

NUMBER:

- I can't estimate the number..... -1
I'd rather not answer this question..... -2

6) How many of those are primary care physicians?

NUMBER:

I can't estimate the number..... -1
I'd rather not answer this question..... -2

7) Approximately how many **nurse practitioners and physician assistants** work at this practice?

NUMBER:

I can't estimate the number..... -1
I'd rather not answer this question..... -2

8) Does this practice have the ability to x-ray both chests and extremities (e.g., arm, leg, hand, foot) in the office? (CIRCLE ONLY ONE RESPONSE)

Yes..... 1
No..... 2
I don't know..... -1
I'd rather not answer this question..... -2

9) What percentage of this practice's patients are covered by Medicaid? (CIRCLE ONLY ONE)

Less than 10 percent..... 1
10-50 percent..... 2
Greater than 50 percent..... 3
I can't estimate the number..... -1
I'd rather not answer this question..... -2

10) Does this practice have any capitated contracts (per person, per month) with managed care plans? (CIRCLE ONLY ONE RESPONSE)

Yes..... 1 → SKIP TO 11
No..... 2 → SKIP TO 11
I don't know..... -1
I'd rather not answer this question..... -2 → SKIP TO 11

Did you answer don't know because:

I'm not familiar with this term..... 1
I don't know if the practice engages in this..... 2

11) Does this practice participate in an Accountable Care Organization (ACO) arrangement with either Medicare or private insurers? (CIRCLE ONLY ONE RESPONSE)

Yes..... 1 → SKIP TO 12
No..... 2 → SKIP TO 12
I don't know..... -1
I'd rather not answer this question..... -2 → SKIP TO 12

Did you answer don't know because:

I'm not familiar with this term..... 1
I don't know if the practice engages in this..... 2

12)	Are physicians in this practice paid a base salary? (CIRCLE ONLY ONE RESPONSE)	
	Yes.....	1
	No.....	2
	I don't know.....	-1
	I'd rather not answer this question.....	-2

13)	Does this practice routinely set time aside for same-day appointments? (CIRCLE ONLY ONE RESPONSE)	
	Yes.....	1
	No.....	2
	I don't know.....	-1
	I'd rather not answer this question.....	-2

14)	Is this practice certified as a patient-centered medical home? (CIRCLE ONLY ONE RESPONSE)	
	Yes.....	1
	No.....	2
	I don't know.....	-1
	I'd rather not answer this question.....	-2

15)	Does this practice routinely send patients reminders for preventive care or follow-up care? (CIRCLE ONLY ONE RESPONSE)	
	Yes.....	1
	No.....	2
	I don't know.....	-1
	I'd rather not answer this question.....	-2

16)	Does this practice regularly give reports to physicians on the clinical quality of care they individually provide? (CIRCLE ONLY ONE RESPONSE)	
	Yes.....	1 → SKIP TO 17
	No.....	2 → SKIP TO 17
	I don't know.....	-1
	I'd rather not answer this question.....	-2 → SKIP TO 17
	Did you answer don't know because:	
	I'm not familiar with this term.....	1
	I don't know if the practice engages in this.....	2

17)	Does this practice use case managers whose primary job is to coordinate patient care? (CIRCLE ONLY ONE RESPONSE)	
	Yes.....	1
	No.....	2
	I don't know.....	-1
	I'd rather not answer this question.....	-2

18)	When one of your patients is discharged from the hospital, does someone from this practice usually contact the patient within 48 hours? (CIRCLE ONLY ONE RESPONSE)	
	Yes.....	1
	No.....	2
	Practice does not know when patients are discharged from hospital.....	3
	I don't know.....	-1
	I'd rather not answer this question.....	-2

19) Does this practice use an electronic health record (EHR) or electronic medical record (EMR) system? Do not include billing record systems. (CIRCLE ONLY ONE RESPONSE)

Yes..... 1
 No..... 2 → SKIP TO 22
 I don't know..... -1 → SKIP TO 22
 I'd rather not answer this question..... -2 → SKIP TO 22

20) Does the electronic records system routinely provide reminders for either guideline-based interventions or screening tests? (CIRCLE ONLY ONE RESPONSE)

Yes..... 1
 No..... 2
 I don't know..... -1
 I'd rather not answer this question..... -2

21) Is the electronic records system routinely used for exchanging secure messages with patients? (CIRCLE ONLY ONE RESPONSE)

Yes..... 1
 No..... 2
 I don't know..... -1
 I'd rather not answer this question..... -2

22) Which of the following best describes your role in this practice? (CIRCLE ONLY ONE RESPONSE)

Billing..... 7
 Receptionist..... 8
 Practice Administrator..... 1
 Medical Director..... 2
 Physician..... 3
 Office Manager..... 4
 Other, please specify 6

NOTE: PLEASE ANSWER QUESTION 23 IF YOU ANSWERED YES TO QUESTION 3.

23) You reported this practice has multiple locations where services are provided to patients. Thinking back on your responses, were most of your responses ... (CIRCLE ONLY ONE RESPONSE)

Inclusive of the practice as a whole, across the multiple locations 1
 Exclusive to the location where you work 2
 I don't know..... -1
 I'd rather not answer this question..... -2

Thank you for your participation. Please return your survey in the envelope provided. If you have misplaced the envelope, please send survey to:

RTI International 1 North Commerce Center 5265 Capital Blvd. Raleigh, NC 27616

Or FAX to: Attn.: Martha Ryals (866) 309-4556

MEPS MPC Medical Organizational Survey (MOS)

OMB#: 0935-0118

Exp. Date 12/31/2018

NOTICE: Public reporting burden for this collection of information is estimated to average 5-10 minutes per response. The estimated time required to complete the survey. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection information, including suggestions for reducing the burden, to: AHRQ Reports Clearance Officer Attention: PRA, Paperwork Reduction Project (0935-0118) AHRQ, 5600 Fishers Lane, Rockville, MD 20857

Appendix A-2

2016 MOS Questionnaire

[Accessible HTML](#)

2016 Medical Organization Survey Questionnaire

MEPS MPC Medical Organizations Survey (MOS)

The Medical Organizations Survey (MOS) is an expansion of the Medical Expenditure Panel Survey Medical Provider Component (MEPS MPC). This project was funded in part by a grant from the Robert Wood Johnson Foundation. The purpose of the survey is to collect information about how different medical practices are organized and what resources they have available for providing care. Your participation is greatly appreciated. Your answers are completely confidential. Participation in this survey is voluntary. This survey will take 5- 10 minutes to complete. If you have questions or comments about this survey, please call 866-800-9203. If you have any questions about your rights as a study participant, you can call RTT's Office of Research Protection at (919) 316-3358 in Durham, NC or 1-866-214-2043 (a toll-free number).

PLEASE FOLLOW SKIP INSTRUCTIONS AS LISTED. OTHERWISE, CONTINUE TO THE NEXT QUESTION.

PLEASE MARK ONLY ONE RESPONSE TO EACH QUESTION.

1. Is this a multi-specialty group practice?
 - Yes
 - No
 - I don't know
 - I'd rather not answer this question
2. Does this medical practice have more than one location?
 - Yes
 - No
 - I don't know
 - I'd rather not answer this question
3. Is this practice owned by the physicians in the practice?
 - Yes (Go to question 4)
 - No (Go to question 3a)
 - I don't know
 - I'd rather not answer this question
- 3a. Which of the following best describes this practice?
 - A practice owned by an academic medical center
 - A physician network owned by a hospital
 - A non-profit or government clinic
 - A practice owned by physicians in a different practice
 - An HMO
 - A healthcare corporation owned practice
 - Other, please specify
 - I don't know
 - I'd rather not answer this question
4. Approximately how many physicians work either part or full time at this practice?
NUMBER:
 - I can't estimate the number
 - I'd rather not answer this question
5. How many of those are primary care physicians?
NUMBER:
 - I can't estimate the number
 - I'd rather not answer this question

6. Approximately how many nurse practitioners and physician assistants work at this practice?
NUMBER:
 - I can't estimate the number
 - I'd rather not answer this question
7. Does this practice have the ability to x-ray both chests and extremities (e.g., arm, leg, hand, foot) in the office?
 - Yes
 - No
 - I don't know
 - I'd rather not answer this question
8. Does this practice routinely set time aside for same-day appointments?
 - Yes
 - No
 - I don't know
 - I'd rather not answer this question
9. Does this practice routinely send patients reminders for preventive care or follow-up care?
 - Yes
 - No
 - I don't know
 - I'd rather not answer this question
10. Does this practice regularly give reports to physicians on the clinical quality of care they individually provide?
 - Yes
 - No
 - I'm not familiar with this term
 - I don't know if the practice engages in this
 - I'd rather not answer this question
11. Does this practice use case managers whose primary job is to coordinate patient care?
 - Yes
 - No
 - I don't know
 - I'd rather not answer this question
12. When one of your patients is discharged from the Hospital, does someone from this practice usually contact the patient within 48 hours?
 - Yes
 - No
 - Practice does not know when patients are discharged from Hospital
 - I don't know
 - I'd rather not answer this question
13. Does this practice use an electronic health record (EHR) or electronic medical record (EMR) system? Do not include billing record systems.
 - Yes (Go to question 14)
 - No (Go to question 16)
 - I don't know (Go to question 16)
 - I'd rather not answer this question (Go to question 16)
14. Does the electronic records system routinely provide reminders for either guideline-based interventions or screening tests?
 - Yes
 - No
 - I don't know
 - I'd rather not answer this question
15. Is the electronic records system routinely used for exchanging secure messages with patients?
 - Yes
 - No

- I don't know
 - I'd rather not answer this question
16. What percentage of this practice's patients are covered by Medicaid?
- None
 - Some, but less than 10 percent
 - 10-50 percent
 - Greater than 50 percent
 - I can't estimate the number
 - I'd rather not answer this question
17. Does this practice have any capitated contracts (per person, per month) with managed care plans?
- Yes
 - No
 - I am not familiar with this term
 - I don't know if the practice has these
 - I'd rather not answer this question
18. Does this practice participate in an Accountable Care Organization (ACO) arrangement with either Medicare or private insurers?
- Yes
 - No
 - I'm not familiar with this term
 - I don't know if the practice has these
 - I'd rather not answer this question
19. Is this practice certified as a patient-centered medical home?
- Yes
 - No
 - I'm not familiar with this term
 - I don't know
 - I'd rather not answer this question
20. Are physicians in this practice paid a base salary?
- Yes
 - No
 - I don't know
 - I'd rather not answer this question
21. Which of the following best describes your role in this practice?
- Office Manager
 - Medical Assistant
 - Receptionist
 - Office Staff
 - Practice Administrator
 - Billing
 - Nurse
 - Physician
 - Medical Director
 - Other, please specify
 - I'd rather not answer this question

If this practice sees patients at multiple locations (answered yes to question 2)

22. You reported this practice sees patients at multiple locations. Please think back on your responses, were most of your responses...
- Inclusive of the practice as a whole, across the multiple locations
 - Only about the location where you work
 - I don't know

- I'd rather not answer this question

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Appendix B

Response Characteristics for Providers Responding Only in 2015, Only in 2016, and in Both 2015 and 2016

Item	Response	2015				2016			
		Providers in 2015 only (N=2,932)		Providers in 2015 & 2016 (N=1,284)		Providers in 2016 only (N=3,917)		Providers in 2015 & 2016 (N=1,284)	
		Count	%	Count	%	Count	%	Count	%
ACO	Missing	810	27.6%	347	27.0%	1,342	34.3%	394	30.7%
	Yes	1,258	42.9%	580	45.2%	1,661	42.4%	553	43.1%
	No	864	29.5%	357	27.8%	914	23.3%	337	26.2%
BASESAL	Missing	1,237	42.2%	508	39.6%	1,964	50.1%	602	46.9%
	Yes	1,245	42.5%	589	45.9%	1,461	37.3%	529	41.2%
	No	450	15.3%	187	14.6%	492	12.6%	153	11.9%
CAPITATD	Missing	727	24.8%	302	23.5%	1,228	31.4%	366	28.5%
	Yes	1,052	35.9%	514	40.0%	1,307	33.4%	474	36.9%
	No	1,153	39.3%	468	36.4%	1,382	35.3%	444	34.6%
CASEMGR	Missing	185	6.3%	78	6.1%	295	7.5%	85	6.6%
	Yes	1,391	47.4%	617	48.1%	2,031	51.9%	674	52.5%
	No	1,356	46.2%	589	45.9%	1,591	40.6%	525	40.9%
EHREMR	Missing	28	1.0%	7	0.5%	45	1.1%	6	0.5%
	Yes	2,585	88.2%	1,141	88.9%	3,522	89.9%	1,140	88.8%
	No	319	10.9%	136	10.6%	350	8.9%	138	10.7%
HOSDCCHK	Missing	352	12.0%	150	11.7%	448	11.4%	123	9.6%
	Yes	1,953	66.6%	868	67.6%	2,669	68.1%	884	68.8%
	No	627	21.4%	266	20.7%	800	20.4%	277	21.6%

Item	Response	2015				2016			
		Providers in 2015 only (N=2,932)		Providers in 2015 & 2016 (N=1,284)		Providers in 2016 only (N=3,917)		Providers in 2015 & 2016 (N=1,284)	
		Count	%	Count	%	Count	%	Count	%
MEDHOME	Missing	458	15.6%	203	15.8%	844	21.5%	246	19.2%
	Yes	1,057	36.1%	533	41.5%	1,394	35.6%	495	38.6%
	No	1,417	48.3%	548	42.7%	1,679	42.9%	543	42.3%
MULTLOC	Missing	7	0.2%	0	0.0%	15	0.4%	4	0.3%
	Yes	1,305	44.5%	561	43.7%	1,702	43.5%	538	41.9%
	No	1,620	55.3%	723	56.3%	2,200	56.2%	742	57.8%
MULTSPEC	Missing	25	0.9%	7	0.5%	61	1.6%	19	1.5%
	Yes	1,039	35.4%	467	36.4%	1,499	38.3%	459	35.7%
	No	1,868	63.7%	810	63.1%	2,357	60.2%	806	62.8%
NUMDOC	Missing	117	4.0%	39	3.0%	174	4.4%	64	5.0%
	0	24	0.8%	5	0.4%	22	0.6%	6	0.5%
	1	829	28.3%	360	28.0%	911	23.3%	369	28.7%
	2-4	908	31.0%	377	29.4%	1,230	31.4%	351	27.3%
	5-9	483	16.5%	227	17.7%	729	18.6%	222	17.3%
	10+	571	19.5%	276	21.5%	851	21.7%	272	21.2%
NUMNPA	Missing	135	4.6%	59	4.6%	210	5.4%	67	5.2%
	0	905	30.9%	368	28.7%	993	25.4%	335	26.1%
	1	602	20.5%	283	22.0%	857	21.9%	255	19.9%
	2-4	832	28.4%	353	27.5%	1,128	28.8%	392	30.5%
	5-9	252	8.6%	128	10.0%	383	9.8%	118	9.2%
	10+	206	7.0%	93	7.2%	346	8.8%	117	9.1%

Item	Response	2015				2016			
		Providers in 2015 only (N=2,932)		Providers in 2015 & 2016 (N=1,284)		Providers in 2016 only (N=3,917)		Providers in 2015 & 2016 (N=1,284)	
		Count	%	Count	%	Count	%	Count	%
NUMPCP	Missing	138	4.7%	60	4.7%	206	5.3%	72	5.6%
	0	174	5.9%	34	2.7%	217	5.5%	29	2.3%
	1	881	30.1%	384	29.9%	985	25.2%	399	31.1%
	2-4	908	31.0%	383	29.8%	1,233	31.5%	371	28.9%
	5-9	421	14.4%	226	17.6%	651	16.6%	213	16.6%
	10+	410	14.0%	197	15.3%	625	16.0%	200	15.6%
PCREMIND	Missing	42	1.4%	23	1.8%	77	2.0%	28	2.2%
	Yes	2,600	88.7%	1,150	89.6%	3,515	89.7%	1,156	90.0%
	No	290	9.9%	111	8.6%	325	8.3%	100	7.8%
PRACXRAY	Missing	27	0.9%	11	0.9%	67	1.7%	11	0.9%
	Yes	822	28.0%	352	27.4%	1,168	29.8%	348	27.1%
	No	2,083	71.0%	921	71.7%	2,682	68.5%	925	72.0%
QUALCARE	Missing	347	11.8%	162	12.6%	545	13.9%	152	11.8%
	Yes	2,255	76.9%	988	76.9%	3,090	78.9%	1,035	80.6%
	No	330	11.3%	134	10.4%	282	7.2%	97	7.6%
SAMEDAY	Missing	24	0.8%	13	1.0%	52	1.3%	11	0.9%
	Yes	2,736	93.3%	1,207	94.0%	3,661	93.5%	1,217	94.8%
	No	172	5.9%	64	5.0%	204	5.2%	56	4.4%