

Balanced Measures for Patient-Centered Care

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Abstract: The Institute for Healthcare Improvement has long supported the use of balanced measures to assess improvement among patients at both the individual and the population levels. Although biomedical outcomes and process measures have been widely accepted, patient-reported measures are still not in widespread use. The most common use of such measures is at the population level to gauge satisfaction with care long after it has been provided. This article examines barriers and solutions to including patient-reported measures at the point of care. **Key words:** *practice improvement, patient-centered care, healthcare quality, measures of quality*

WE know that measurement is essential to guide improvement. It is logical that if we want improvement to lead to optimal patient-centered care, we must include measures that bring the voice of the patient into the learning process. When the Institute for Healthcare Improvement began its Idealized Design of Clinical Office Practices project, it asked a panel of experts to design an idealized measurement system. The result was a balanced measurement system that used structure, process, and outcome measures to evaluate the changeover time. Patient experience measures were necessary components of this system (Hess et al., 1999).

However, a balanced approach that explicitly includes comprehensive patient-reported measures has been impeded by multiple factors such as

- confusion about the meaning of patient-reported measures,
- barriers to collecting and analyzing patient-reported measures, and
- a lack of ability to respond to the measures.

This article discusses each of these barriers and also describes several practical methods to address them.

UNDERSTANDING THE MEANING OF PATIENT-REPORTED MEASURES

Two common causes of confusion about the meaning of patient-reported measures are:

- The historical tendency to value “hard” over “soft” measures, and
- A lack of understanding about the differences between comparison and action measures.

Hard versus soft measures

Decades of research have documented the value of patient-reported measures in screening, monitoring, and promoting collaborative care; aiding in decision making; and enhancing “patient-centered” communication (Greenhalgh & Meadows, 1999; Moore & Wasson, 2006). Patient-reported measures identify “what matters” to the patient and can even reflect biomedical variables (such

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as cholesterol and blood pressure levels) that are so often the focus of medical care guidelines (Physician Practice Connections—Patient-Centered Medical Home, 2008; Wasson 2006).

Despite the value of patient-reported measures, during healthcare professional training, such data are usually labeled as “subjective” (soft), whereas bioclinical data (eg, laboratory results and findings by the clinician) are labeled as “objective” (hard). As a result, laboratory measures for blood glucose control are readily accepted despite the fact that this measure can be poorly related to important patient outcomes when applied to patients with complex conditions (Gandhi et al., 2008). National policies continue to favor certification and pay for performance based on intermediate outcomes (such as laboratory tests) and process measures (such as the measure “third next available appointment,” policies regarding no shows, and the use of a patient registry) rather than patient-reported measures (Physician Practice Connections—Patient-Centered Medical Home, 2008).

Comparison measures versus action measures

One widely accepted notion is that more competition in healthcare will improve its value. Comparison measures of performance on patient satisfaction, for example, are considered critical in competition. Because money and prestige depend on the accuracy and validity of these comparisons, the data are usually summarized over many observations and retrospectively analyzed. Such data are not real-time for a particular patient. Although changes to the system of care can result from taking action on the basis of such comparison measures, the likelihood of an individual patient benefiting in a specific, tailored way is uncertain at best. Even if payment is linked to such comparison measures, quality improvement for the population of patients will not necessarily occur (Landon & Normand, 2008; Pearson et al., 2008; Petersen et al., 2006). Finally, such measures often ask patients general questions about satisfaction (eg, “I would recommend this practice. . .”), which do not

lend themselves to identifying specific actions to address issues.

With “action” measures, by contrast, a single laboratory or a patient-reported measure can trigger an action for a particular patient in real time. Patient-reported measures are designed to lend themselves to specific action. For example, patient ratings on the helpfulness of information they receive about their conditions direct attention to what information needs to change. Certainly, such measures can also be aggregated at a population level to help inform improvement efforts as described in the clinical examples at the end of this article.

The differences between patient-reported “action” measures and those used for comparison are illustrated in Table 1. The information in Table 1 supports the proposition that neither comparison nor action measures are superior to the other; a balance of both is most likely to result in better care.

DATA COLLECTION AND ANALYSIS

When office practices think about surveying their patients, they usually envision the elaborate process required for comparison measures. For example, comparisons require probability sampling and obsessive follow-up of nonresponders to ensure that the respondents are representative of the patient population. Indeed, the methodology for accurate comparison is often so complex and alien to the customary work of health professionals that many health systems use consultant companies to perform data gathering and analysis. Some experts have even suggested the need for regional data initiatives and special electronic health records to overcome the barriers (Landon & Normand, 2008).

Barriers for collection and analysis of measures intended for clinical action also have to be addressed, but the issues seem less formidable. For example, as part of clinical practice, it is quite efficient to have patients complete a relatively brief survey that can identify, without requiring detailed analysis, the issues that are important to them. In a separate article, we illustrate this point by the use of CARE Vital Signs. CARE Vital Signs

Table 1. Differences between patient-reported action and comparison measures

	Patient-reported measures leading to specific actions for individual patients	Patient-reported measures used to quantify specific actions for many patients (the “population”)
Patient role	Patient report is part of self-assessment and feedback	Supplies data for research variables or “satisfaction” for payment (does not include patient self-assessment and feedback)
Information	Limited to a few measures that are “just good enough” so that response burden is minimized for any patient	Often includes many measures for precision of estimates; sampling strategies are designed to ensure comparable estimates
Information cycle	Information for action by patient and clinician “today”	Usually delayed aggregate summaries (often requires adjustment for confounders); payment and reputation may depend on comparisons
Behavioral assumption	Screening for “what matters” to individual patients enhances collaborative care between patients and clinicians	Clinicians will “respond” to the data (but, by definition, summaries and report cards miss opportunities for individual patient interventions)

offers a method for practices to routinely screen patients to determine whether they have common important issues for which effective actions might be implemented (see the article on CARE Vital Signs). After about 10 CARE Vital Signs are completed, the practice will have insights about its care processes; after 30 CARE Vital Signs, the practice will be able to estimate and plan for patient needs.

HowsYourHealth.org is a clinical information system based on patient report that offers actionable information about what matters to patients and also aggregates patient experience of care measures (such as access, efficiency, and continuity) for comparisons. In real time, a practice can assess many variables and, after only a handful of completed surveys, examine their performance against the ideal. If national comparisons are desired, the practice can sort the data by important predictors of response, such as patient illness burden and financial status, so that the results are not highly biased by the characteristics of the patients. Practices that use HowsYourHealth.org do not have to think about

how to add patient-reported measures into chronic disease registries . . . the patient does that for the practice.

RESPONDING TO PATIENT-REPORTED MEASURES

The clinician’s ability to respond effectively to a patient-reported measure is the most difficult obstacle to surmount. Clinicians have to address the problems identified through patient-reported feedback, but even providing a potentially actionable measure for a particular patient at the point of care will not necessarily result in better care for that patient (Ahles et al., 2006). Professional training is generally focused on responding to traditional biomedical information and measures and not on “what matters to patients” as indicated by patient-reported measures. For example, in our experience, a physician is much more likely to feel effective responding to an HbA_{1c} level of 9 as opposed to patient-reported measures such as those on CARE Vital Signs, including ratings of emotions, confidence, and

pain. When clinicians do feel confident in responding to patient-reported measures, they are most concerned about having time during the office visit to do so properly (Greenhalgh & Meadows, 1999).

The “Activation of patients for successful self-management” article in this series addresses some of these concerns. Additional aspects of the design of measurement collection and analysis, work processes, and care team roles help clinicians enhance their ability to respond to patient-reported measures:

1. Use existing measures designed specifically for office practice settings. Although some measures and groupings of measures may seem better than others for a particular setting or purpose, a practice should initially test existing measures that have been explicitly designed for delivering patient-centered care in an office practice. Otherwise, the practice risks debility from sorting through measures for research, measures for comparisons, measures for different languages, measures for low literacy, and so on. The CARE Vital Signs article provides an example of a “low-tech” patient-centered tool that helps identify what matters most to patients and a description of its use. Alternatively, a practice can ask patients to complete HowsYourHealth.org before their next scheduled appointment. Both these tools enable even the busiest clinic to make tangible the concept of actionable patient-reported measures.
2. Enhance the impact of patient-reported measurement tools by building reliable processes for acting on the data. Even if practices develop effective processes to respond to patient-reported measures, these processes have to be made reliable. Feedback alone does not lead to higher levels of reliability (Ahles et al., 2006) (See the “Making patient-centered care reliable” article in this series.)

The more timely and simply action measures are “fed” into the care process and the more predictable and sustained the response to those measures, the bet-

ter the outcomes for patients (Ahles et al., 2006; Greenhalgh & Meadows, 1999; Wasson et al., 1999). HowsYourHealth.org, for example, makes information that is tailored to patient responses the default action. This is a step in the right direction, but the practice will have to engage staff in ensuring that the information is received, understood, and incorporated into everyday care to have a robust improvement in reliability.

3. Change the function of the practice to enhance *both* staff and patient experience. Too often, practices redesign specific processes without fundamentally restructuring the way work is done (Wasson et al., 2003). (See the “Optimizing the care team” article in this series.) The interrelationship between patient-reported measures of care quality and staff-reported levels of practice function is illustrated in the following example.

During a 2-year period (2005–2007), 62 practices asked office staff 6 questions about office function and 50- to 69-year-old patients to complete a 25-item paper-based derivative of the more thorough HowsYourHealth.org survey (Appendices 1 and 2). The 25 items were chosen to examine patient experiences of care, knowledge of their illness, and their financial status. Table 2 shows the relationship between the responses of the 464 professional and nonprofessional staff and 1228 patients. The association of higher patient-reported care ratings with higher office function ratings by staff is apparent for several measures.

In Table 2, the measurement of office function refers to staff ratings in response to the 6 statements such as “I would recommend this office practice as a great place to work” (see Appendix 1). The results vary somewhat depending on whether patients have little burden of illness (eg, 1 condition) and adequate financial status versus high burden of illness (2 or more conditions) and poor financial status.

Table 2. Patient-reported measures of care quality are reflected in staff ratings of practice function

Measure of office function*	Provider continuity			Very easy access			Efficiency			Very good information for chronic diseases			Confidence with self-management			Care is "Perfect" nothing about medical care could be better			I receive exactly the care I want and need exactly when and how I want and need it		
	Little burden of illness and/or adequate financial status	Burden of illness and/or poor financial status	95 91	Little burden of illness and/or adequate financial status	Burden of illness and/or poor financial status	66† 46‡	Little burden of illness and/or adequate financial status	Burden of illness and/or poor financial status	89† 75‡	Little burden of illness and/or adequate financial status	Burden of illness and/or poor financial status	84 76	Little burden of illness and/or adequate financial status	Burden of illness and/or poor financial status	63 61	Little burden of illness and/or adequate financial status	Burden of illness and/or poor financial status	61 57	Little burden of illness and/or adequate financial status	Burden of illness and/or poor financial status	63 55
Above median						61†			83†		84			50			52†			61†	
Below median						36‡			72†		76			43			39†			46†	

* A total of 464 staff in 62 clinical office practices.

† Difference between above and below median is significant at $P < .05$.

‡ Difference between above and below median is significant at $P < .01$.

These results strongly suggest that office function must often be redesigned to enhance patient-centered care (Wasson et al., 2008).

SOME PRACTICE EXAMPLES

The following examples illustrate how patient-reported measures are being used in various practice settings.

Small independent clinics

Ideal medical practices (www.IdealMedicalPractices.org) are independent practices from across the United States that participate in a virtual quality improvement collaborative. All practices use HowsYourHealth.org to assess their patients' general function, concerns, symptoms, health habits, chronic condition management, communication with clinicians, and quality of healthcare services. The Web tool then tailors information to each patient's responses, including specific guidelines and suggestions for the management of chronic conditions, and offers instantaneous feedback of responses for the patient and clinician. It also produces a portable health record for the patient and automatically enters data into a registry for the clinician (on the basis of the patient's diagnoses, functional limitations, confidence with self-management, and several biomedical measures).

With the HowsYourHealth.org real-time results at their disposal, practices can compare their performance to other practices also using the Web-based tool. Several practices have published articles based on the patient data (Guinn & Moore, 2008; Ho, 2007; Wasson et al., 2008). These practices have incorporated the use of the Web tool into their existing practice flow, usually before a scheduled office visit. Typically, the office practice asks about 30% to 50% of their patient panel to complete the HowsYourHealth.org survey each year so that, over the span of 2 or 3 years, all patients in the practice have used the survey at least once. John Zalewski, MD, an internist at St John's Mercy Medical Group in St Louis who participated in the Ideal

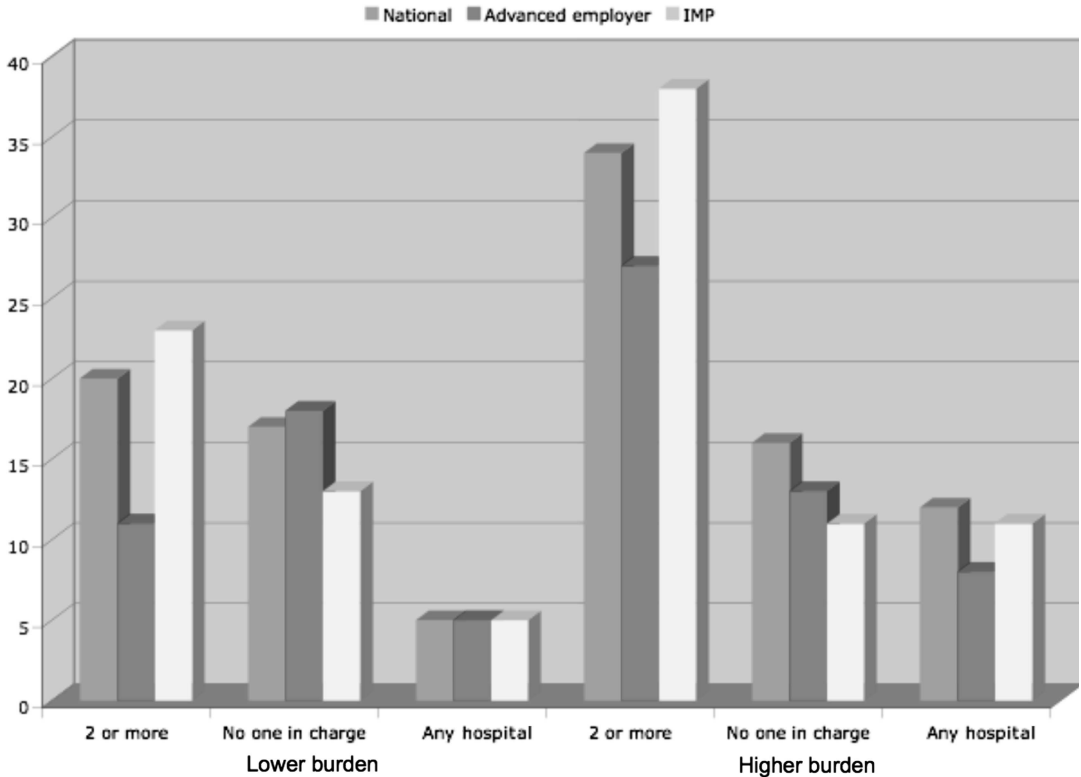


Figure 1.

Medical Practices collaborative, describes what happens:

There is so much to accomplish in the typical of- fice visit. Sometimes in trying to manage a pa- tient's diabetes, high blood pressure, medications,

preventive needs, etc., we may fail to respond to what is bothering the patient most. The How's Your Health tool works. I found myself completely changing course during an office visit recently after reviewing a patient's pre-visit How's Your Health survey.

Table 3. Using patient-report measures to manage blood pressure (CareSouth Carolina)*

Time period	Range of patient-reported measures of collaborative care, %		Range of outcome measures, %
	Information is excellent	Confidence with self-management	Blood pressure controlled
Baseline: 2007 (January-June)	10-33	40-60	51-55
Changes introduced phase 1: 2007 (July-December)	35-88	40-80	58-64
Changes introduced phase 2: 2008 (January-April)	80-90	80-90	66-67

*From Wasson et al. (2008).

A large employer-based healthcare system

Wisconsin-based QuadMed provides healthcare to 12,000 employees and dependents of the owner company, Quad/Graphics. It offers incentives to its employees to use HowsYourHealth.org to stimulate self-management and facilitate communication between clinicians and patients. A valuable by-product of using the Web-based tool is QuadMed's ability to compare their performance with those of other organizations. QuadMed has been working to improve coordination of care, that is, decreasing the current level of fragmentation in patient care experience. For example, Figure 1 illustrates patient-reported ratings of care fragmentation and hospital utilization based on the respondent burden of illness of QuadMed employees and dependents, labeled in the table as "advanced employer" ($n = 14,000$); Ideal medical practices, labeled as "IMP" ($n = 4000$); and a national comparison ($n = 70,000$). When compared with the IMP and national examples, QuadMed's employees and dependents are less likely to have 2 or more physicians. For individuals with a higher burden of illness, less fragmentation of care among 2 or more physicians is associated with fewer hospitalizations. QuadMed has consistently documented lower costs of care when compared with comparable populations (Fuhrman, 2005).

A safety net healthcare system

CareSouth Carolina provides care to more than 30,000 patients in rural South Carolina. Over time, the health system has identified that "excellent" ratings for 2 patient-

reported measures—patient confidence with self-management and care information—are all it needs to monitor how well the system is providing care for most chronic conditions. CareSouth uses these measures at the aggregate (population) level to guide improvement in their care processes and also at the point of care to help tailor interventions for individual patients. Table 3 shows how CareSouth uses patient-reported measures to monitor progress in managing patients' blood pressure over time.

CONCLUSION

For 2 reasons, the Institute for Healthcare Improvement's original vision of balanced measures to assess improvement at both the individual patient and the population levels is now poised to become a reality. First, the concept of balanced measurement has always made sense: bringing the voice of the patient and the staff into the design and delivery of healthcare represents a huge benefit. Second, many of the practical concerns about patient-reported measurement have been addressed. The measures, tools, and care processes discussed in this article have been tested with thousands of patients across hundreds of practices and organizations. Initial testing results indicate that their use is feasible and meaningful to guide improvement. It is now time to use patient-reported measures and tools in a concerted fashion to help determine how best to redesign care systems and sequence changes to lead to improved quality of care. Traditional bioclinical measures alone are not likely to get us there.

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Appendix 1

Office Staff Survey: Staff-Reported Measures to Assess Office Practice Function

Office practice staff are asked to complete this 6-question survey to assess office practice function. For this report, the median score of practice function was 12 out of a best score of 6 and a worst score of 26; the interquartile range of the score was 10 to 16.

1. In this office, I always have the opportunity to do what I do the best everyday.
1 = *Strongly agree* 2 = *Agree* 3 = *Disagree* 4 = *Strongly disagree*
2. In the last 7 days, I have received recognition or praise for doing good work.
1 = *Strongly agree* 2 = *Agree* 3 = *Disagree* 4 = *Strongly disagree*
3. Our office staff works like a team. We have high levels of trust and collaboration. We appreciate complementary roles and recognize that all contribute to a shared purpose.
1 = *Strongly agree* 2 = *Agree* 3 = *Disagree* 4 = *Strongly disagree*
4. I would recommend this office practice as a great place to work.
1 = *Strongly agree* 2 = *Agree* 3 = *Unsure* 4 = *Disagree* 5 = *Strongly disagree*
5. How easy is it to ask anyone a question about the way we care for patients?
1 = *Very easy* 2 = *Easy* 3 = *Difficult* 4 = *Very difficult*
6. Technology in this office smoothly links patient care with a rich information environment. The information environment is designed to support the work of the clinical team.
1 = *Strongly agree* 2 = *Agree* 3 = *Unsure* 4 = *Disagree* 5 = *Strongly disagree*

Appendix 2

Patient Survey: Patient-Reported Measures to Assess Office Practice Quality of Care

This survey is given to patients aged 50 to 69 years. The survey questions are derived from items in the HowsYourHealth.org Web-based survey. Because survey responses involve entry into a file for scoring, many practices find it advantageous to offer the Web-based version for free, which can be obtained by registering at www.IdealMedicalHome.org.

We are asking some of our patients, aged 50–69, to complete a brief survey about their health and healthcare. We are using this information to improve our services.

We do not wish any patient names. Thank you very much.

Please check (✓) the best answers. After completing the survey, place it in the self addressed stamped envelope.

1. During the past 4 weeks, have you been bothered often or always by emotional problems such as feeling anxious, depressed, irritable, sad or downhearted, and blue?
 Not at all (1)
 Slightly (2)
 Moderately (3)
 Quite a bit (4)

If you checked this, is your doctor or nurse aware of the problem?

- Yes (1) No (2) I am not sure. (3)
 Extremely (5)

If you checked this, is your doctor or nurse aware of the problem?

- Yes (5) No (2) I am not sure. (3)

2. During the past 4 weeks, how much body pain have you generally had?

- No pain (1)
 Very mild pain (2)
 Mild pain (3)
 Moderate pain (4)

If you checked this, is your doctor or nurse aware of the problem?

- Yes (1) No (2) I am not sure. (3)
 Severe pain (5)

If you checked this, is your doctor or nurse aware of the problem?

- Yes (1) No (2) I am not sure. (3)

3. Has a doctor told you that you have any of these problems:

Please check (✓) all that apply.

- High blood pressure (1)
 Heart trouble or hardening of the arteries (2)
 Diabetes (sugar) (3)
 Arthritis (4)
 Asthma, bronchitis, or emphysema (5)
 Serious obesity (more than 15% overweight) (6)

If you checked (✓) that you have high blood pressure, heart trouble, diabetes, arthritis, breathing problems, or obesity, *please answer questions 4 to 8. If not, go to question 9.*

4. In general, how would you rate the information given to you about these problem(s) by your doctor or a nurse?

Please check (✓) the best answer.

- Excellent (1)
 Very good (2)
 Good (3)
 Fair (4)
 Poor (5)
 I do not remember receiving any information. (6)

5. If you indicated that you have breathing problems:

How would you rate the information your doctor or a nurse gave you about?

How to adjust medicines for your shortness of breath?

- Excellent (1)
 Very good (2)
 Good (3)
 Fair (4)
 Poor (5)
 I do not remember receiving any information. (6)

6. If you indicated that you have diabetes:

How often do you keep your blood glucose (sugar) within normal range (between 80 and 150)?

- I do not test my blood glucose. (1)
 All the time (2)

- Often (3)
- Sometimes (4)
- Rarely (5)
- Never (6)

7. If you have high blood pressure:

Do you check your own blood pressure?

- Yes, often (1) Yes, sometimes (2) Almost never (3) Never (4)

8. What was your last blood pressure? What was the high number of your blood pressure (systolic blood pressure)?

- Under 100 (1)
- 100-120 (2)
- 121-130 (3)
- 131-140 (4)
- 141-150 (5)
- 151-160 (6)
- 161-170 (7)
- Higher than 171 (8)
- I do not know. (9)

9. Do you have one person you think of as your personal doctor or nurse?

- Yes (1) No (2)

10. How easy is it for you to get medical care when you need it?

- Very easy (1)
- Easy (2)
- Somewhat difficult (3)
- Very difficult (4)
- I have not needed medical care. (5)

11. When you visit your doctor's office, how often is it well organized and efficient and does not waste your time?

- Most of the time (1)
- Some of the time (2)
- Almost never is it efficient. It often wastes my time. (3)
- Does not apply to me. I seldom visit a doctor's office. (4)

12. How confident are you that you can control and manage most of your health problems?

- Very confident (1)
- Somewhat confident (2)
- Not very confident (3)
- I do not have any health problems. (4)

13. Are there things about your medical care that could be better?

- No, my care is perfect. (1)
- Yes, some things (2)
- Yes, a lot of things (3)

14. Do you have enough money to buy the things that you need to live everyday, such as food, clothing, or housing?

- Yes, always (1)
- Sometimes (2)
- No (3)

15. In the past 2 years, have you had a test for cancer of the bowel?
___ Yes (1) ___ No (2) ___ No, but I have had a colonoscopy in the past 9 years. (3)
16. Do you think that any of your medications are making you sick?
___ Yes (1)
___ No (2)
___ Maybe, I am not sure. (3)
___ I am not taking any medications. (4)
17. In the past year, have you been in the hospital or visited an emergency department?
___ Yes (1) ___ No (2)
18. In the past 3 months, did you have an illness or injury that kept you in bed for all or most of the day?
___ Yes (1) ___ No (2)
19. During the past 2 weeks, how much did physical health or emotional problems keep you from working the hours you needed to work?
___ Physical or emotional problems *did not limit* my ability to work at all. (1)
___ Physical or emotional problems *did limit* my ability to work a small amount (about 10% to 20%). (2)
___ Physical or emotional problems *did limit* my ability to work a large amount (more than 20%). (3)
20. When you think about your healthcare, how much do you agree or disagree with this statement: "I receive exactly what I want and need exactly when and how I want and need it."
___ I agree strongly. (1) ___ I somewhat disagree. (3)
___ I somewhat agree. (2) ___ I disagree strongly. (4)
21. Are you seeing a specialist physician?
___ Yes (1) ___ No (2) ___ I am not sure. (3)
- If you answered *Yes*, please continue to Question 22.
22. If you are seeing a specialist physician and your primary physician, do you have one doctor who you feel is in charge of your medical care?
___ Yes (1) ___ No (2) ___ I am not sure. (3)

Thank you for completing this survey!

Please return in the enclosed self-addressed stamped envelope.

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