Quality of primary care provided in community clinics in Japan

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Abstract
Background: Quality indicators (QIs) for primary care are used worldwide. To date, however, the use of QIs to assess the quality of primary care in Japan has not been reported besides diabetes care. Here, we used QIs to evaluate the quality of primary care services provided by local clinics in Japan.

Methods: Four primary care clinics participated in the retrospective medical chart review in 2015. To assess primary care quality, we used 18 process-oriented QIs from the Quality Indicators for Primary Care practice in Japan (QIPC-J) those we previously developed by using a modified Delphi appropriateness method, which comprises 39 QIs in five categories (Comprehensive care/Standardized care, Access, Communication, Coordination, and Understanding of patient’s background). Adult subjects were selected from among patients who visited each clinic within the previous one year using medical claims data. We collected data by reviewing medical charts, and calculated the quality score for each QI and clinic.

Results: A cumulative total of 4330 medical charts were reviewed. The overall quality score was 31.5%. Adherence to QIs ranged from 3.2% to 85.6%. Some quality scores varied substantially between clinics but the overall quality of care among clinics varied less, from 29.2% to 34.0%.

Conclusions: The quality of primary care services provided by local clinics in Japan varies by both QI and clinic. Strategies to improve the quality of care are warranted.

1 | INTRODUCTION

Numerous studies have shown that primary care contributes to improved population health, lower costs, and greater equity.1-4 Therefore, primary care plays an increasingly important role in the healthcare system as the population ages rapidly and becomes more diversified.4

In Japan, universal health insurance covers almost 100% of the population and provides patients with free access to specialists for a small out-of-pocket fee (JPY4000–8000).5,6 Primary care services are mainly provided by small medical facilities, such as small local community hospitals, clinics, and healthcare centers. Although Japanese universal health insurance has contributed to Japan’s excellence in health indices,6 some have questioned the quality or efficiency of the country’s medical care, especially those of primary care, while others have raised concerns about its sustainability under pressure from the rapidly aging population and
increasing costs. Measuring and improving the quality of primary care are essential for ensuring high-quality and efficient care; however, small medical facilities are often left out of quality improvement activities compared to large hospitals. The quality of primary care in small medical facilities has therefore drawn increasingly close attention.

Quality indicators (QIs) have been widely used to evaluate and improve the quality of care in various healthcare settings. QIs are explicitly defined, and measurable items include structures, processes, or outcomes of care. Several instruments have been used to specifically evaluate and improve the quality of primary care services, such as Quality Book of Tools (QBT), European Practice Assessment (EPA), and National Institute of Health and Care Excellence (NICE) indicators.

In Japan, QIs have been developed and measured for a variety of specific areas, such as acute myocardial infarction, antibiotic use, chronic kidney diseases, and cancer care across hospitals. However, most QIs are specific to specialized care provided mainly by tertiary care hospitals, and are therefore unsuitable for the comprehensive measurement of primary care quality. Similarly, QIs for primary care clinics have been developed for diabetes care, but these can only be used to evaluate diabetes care.

To our knowledge, no study has yet evaluated the quality of primary care in small facilities by using QIs in Japan. The aim of this study was to assess the quality of primary care provided in community clinics in Japan using QIs.

2 | METHODS

2.1 | Study design and study sample

This study was a retrospective medical chart review. Participating primary care clinics were recruited nonrandomly in Hokkaido, Japan. The clinics were geographically dispersed throughout Hokkaido and were operated by the same organization. They also used the same electronic medical record (EMR) system. We used opt-out approach to recruit patients and doctors in the participating clinics. Prior to reviewing medical records, every participating clinic put a poster explaining the study and a website with additional information was set up in clinic homepage. Doctors were informed by the clinic directors about the study participation and their rights to opt out. We used medical claims data and medical records to list up to 100 consecutive adult patients who visited each consenting clinic within the previous one year (between July 2014 and June 2015) for each QI.

2.2 | Measures

2.2.1 | Quality indicators

To measure quality of primary care, we used 18 QIs that were process-oriented for this study. Since validated QIs for Japanese primary care setting had not been established at the time of the study, the 18 QIs were selected from those we previously developed by using a modified Delphi appropriateness method, a standard method for developing QIs, based on a conceptual framework. Briefly, seven primary care physicians and seven nonphysician health care professionals in community primary care settings separately participated in focus group interviews to develop a conceptual framework of the quality of primary care in Japan. Seven categories (Comprehensive care, Standardized care, Access, Communication, Coordination, Understanding of patient's background, and Contribution to the local community) were extracted from the focus group interviews as key components of quality of primary care in Japan.

Based on a literature review of clinical guidelines and previously developed QIs for primary care settings, 159 possible QIs were extracted to fit into the seven categories. Expert panel members (10 primary care physicians and three allied health care professionals) rated each indicator's validity. After a face-to-face discussion in September 2013 and a second round of ratings by the expert panel, 72 QIs were extracted. Through subsequent discussions, 42 QIs among five categories were developed: Comprehensive care/Standardized care, Access, Communication, Coordination, and Understanding of patient's background. After a pilot test focused on data extraction and time efforts, 39 QIs among the five categories were established as a set of QIs, called the Primary Care Practice in Japan (QIPC-J) (Appendix). Data resources of the QIs were medical claims data, medical chart reviews, and patient surveys. The QIs that were used for this study were 17 QIs in Comprehensive care/Standardized care and one QI in Understanding of patient's background categories, and those were measurable using data resources other than patient survey.

2.2.2 | Medical chart reviews

Medical chart reviews were completed between July and November 2015 together by two trained research nurses and one clerk in accordance with a written guideline. In case of difficult judging, the reviewers had discussed it with the principal investigator.

2.3 | Data analysis

Patients who were eligible for that indicator were recorded as the denominator (QIs triggered) for each QI. Patients were considered ineligible for the QI if they met prespecified exclusion criteria for a specific indicator. The numerator was constructed by calculating the number of eligible patients whose care met the specified QI (QIs passed). Quality score (%), or percent adherence, was calculated for each QI and all QIs using this numerator and denominator.

2.4 | Ethical approval

All research protocols were reviewed and approved by the institutional review board of the National Hospital Organization Tokyo Medical Center.
TABLE 1  Overall adherence to quality indicators

| QI categories and details                                                                 | QIs triggered | QIs passed | Quality score (95% CI) |
|-------------------------------------------------------------------------------------------|---------------|------------|------------------------|
| **Comprehensive care/Standardized care**                                                 |               |            |                        |
| 1  For a patient on antihypertensive diuretics for more than one year, all of the following are checked during the previous year: serum potassium, creatinine, eGFR, and lipid profile. | 250           | 94         | 37.6 (31.6-44.0)       |
| 2  For a newly diagnosed hypertensive patient, all of the following are documented at the first visit: presence or absence of diabetes, hyperlipidemia, and heart murmur. | 206           | 29         | 14.1 (9.6-19.6)        |
| 3  For a hypertensive patient receiving pharmacotherapy, counseling for at least one of the following lifestyle modifications is offered during the previous year: weight reduction, exercise, dietary calorie restriction, dietary sodium restriction, and alcohol restriction. | 398           | 89         | 22.4 (18.4-26.8)       |
| 4  For a hypertensive patient, home blood pressure readings are documented in the records. | 396           | 210        | 53.0 (47.9-58.0)       |
| 5  For a diabetic patient, blood pressure readings are documented at every visit.         | 197           | 155        | 78.7 (72.3-842)        |
| 6  For a diabetic patient not receiving pharmacotherapy, urinary protein (or microalbumin level) is examined during the previous year. | 160           | 92         | 57.5 (49.4-65.3)       |
| 7  Medical record documents are collected, results of an eye examination by an ophthalmologist are obtained, or a referral to an ophthalmologist is given at least once during the previous year. | 197           | 42         | 21.3 (15.8-27.7)       |
| 8  For a diabetic patient, diabetic neuropathy screening using monofilament or vibration is performed during the previous year. | 197           | 13         | 6.6 (3.6-11.0)         |
| 9  For an asthmatic patient, peak expiratory flow rate readings for the past year are recorded. | 62            | 2          | 3.2 (0.4-11.1)         |
| 10 For an asthmatic patient who uses a beta-2 agonist inhaler daily, an inhaled steroid is prescribed. | 69            | 59         | 85.6 (75.0-92.8)       |
| 11 For a patient with a newly diagnosed headache, how the symptom started (acute or chronic) is documented. | 213           | 119        | 55.9 (48.9-62.6)       |
| 12 For a patient with newly diagnosed low back pain, the presence or absence of cauda equina syndrome is documented. | 343           | 32         | 9.3 (6.5-12.9)         |
| 13 For a dementia patient older than 75 years, the main caregiver is identified and documented in the previous year. | 91            | 22         | 24.2 (15.8-34.3)       |
| 14 For a patient with hypertension or dyslipidemia who visits the clinic more than four times in a year, a complete list of current medications including those prescribed by other medical facilities is documented. | 354           | 75         | 21.2 (17.0-25.8)       |
| 15 For all adult patients, smoking habits during the previous year are documented.        | 371           | 87         | 23.5 (19.2-28.1)       |
| 16 For a smoking patient, smoking cessation intervention is offered within the previous two years. | 60            | 15         | 25.0 (14.7-37.9)       |
| 17 For all patients older than 65 years, pneumococcal vaccination history is documented. | 389           | 18         | 4.6 (2.8-7.2)          |
| **Understanding of patient’s background**                                                 |               |            |                        |
| 18 For an adult patient who makes regular clinic visits, his/her occupation, role in daily life, and who he/she lives with are documented. | 377           | 212        | 56.2 (51.1-61.3)       |

MCD; medical claims data; MCR; medical chart reviews; PS; patient surveys.

3  RESULTS

Medical chart reviews were completed in four clinics. None of the expert panel member physicians were belonging to the participating clinics. A cumulative total of 4330 medical charts were reviewed (average 1082, range 873-1315 charts in each clinic). Table 1 shows adherence to each QI. The overall quality score was 31.5%.

Adherence to individual QIs varied greatly, from nearly 85% for prescribing inhaled steroids to asthmatic patients with short-acting...
**TABLE 2**  Variation in quality score among participating clinics

| No. | Brief description                                      | Clinic A | Clinic B | Clinic C | Clinic D |
|-----|--------------------------------------------------------|----------|----------|----------|----------|
|     | No. of QI triggered | No. of QI passed | Quality score (%) | No. of QI triggered | No. of QI passed | Quality score (%) | No. of QI triggered | No. of QI passed | Quality score (%) |
| 1   | Side effect monitoring in hypertensive medications    | 18       | 10       | 55.6     | 32       | 25       | 78.1     | 100           | 31       | 31.0               |
| 2   | Newly diagnosed hypertension                           | 46       | 0        | 0.0      | 100      | 3        | 3.0      | 34            | 0        | 0.0                |
| 3   | Lifestyle modification                                 | 99       | 15       | 15.2     | 100      | 21       | 21.0     | 100           | 32       | 32.0               |
| 4   | Home BP in hypertension                               | 100      | 68       | 68.0     | 98       | 53       | 54.1     | 100           | 51       | 51.0               |
| 5   | Diabetes                                               | 21       | 20       | 95.2     | 20       | 17       | 85.0     | 95            | 57       | 60.0               |
| 6   | Urinary protein check in diabetes                      | 8        | 5        | 62.5     | 16       | 5        | 31.3     | 100           | 51       | 51.0               |
| 7   | Annual eye examination in diabetes                    | 21       | 1        | 4.8      | 20       | 8        | 40.0     | 95            | 19       | 20.0               |
| 8   | Diabetic neuropathy screening                         | 21       | 0        | 0.0      | 20       | 10       | 50.0     | 95            | 3        | 3.2                |
| 9   | PEF in asthma                                          | 6        | 0        | 0.0      | 14       | 2        | 14.3     | 26            | 0        | 0.0                |
| 10  | Inhaled steroid for asthma                            | 2        | 2        | 100.0    | 30       | 24       | 80.0     | 20            | 19       | 95.0               |
| 11  | Headache                                              | 54       | 36       | 66.7     | 80       | 44       | 55.0     | 48            | 20       | 41.7               |
| 12  | Low back pain                                         | 81       | 3        | 3.7      | 98       | 21       | 21.4     | 80            | 1        | 1.3                |
| 13  | Identify main caregiver of dementia patient           | 32       | 4        | 12.5     | 22       | 3        | 13.6     | 20            | 2        | 10.0               |
| 14  | List of medications                                   | 54       | 11       | 20.4     | 100      | 24       | 24.0     | 100           | 25       | 25.0               |
| 15  | Smoking habits                                         | 100      | 26       | 26.0     | 100      | 27       | 27.0     | 89            | 21       | 23.6               |
| 16  | Smoking cessation                                      | 26       | 3        | 11.5     | 19       | 2        | 10.5     | 7             | 5        | 71.4               |
| 17  | Pneumococcal vaccination                               | 100      | 1        | 1.0      | 100      | 4        | 4.0      | 98            | 4        | 4.1                |
| 18  | Patient’s background                                  | 84       | 55       | 65.5     | 100      | 70       | 70.0     | 95            | 39       | 41.1               |

PEF; peak expiratory flow.
beta 2 agonist inhalers daily (QI #10), to only 3.2% for recording peak expiratory flow rate readings within 1 year in bronchial asthma patients (QI #9) (Table 1).

Adherence to QIs in the Comprehensive care/Standardized care category was ranged from 3.2% to 85.6% and that in the Understanding of patient’s background was 56.2%. The variation in overall quality scores among clinics was small, ranging from 29.5% to 34.0%.

Disparity among clinics was greater for some QIs than others (Table 2). Quality score of the QI for the systematic evaluation of newly diagnosed hypertensive patients (QI #2) was ranged from 3% to 100%. For identification of dementia patients’ main caregiver (QI #13), quality score was ranged from 10% to 76.5%.

4 | DISCUSSION

We evaluated the quality of primary care in community-based clinics in Japan using QIs. Overall, only about one-third of the recommended care was delivered to patients. Although the importance of primary care in local communities has increased, the degree to which primary care in local clinics is consistent with basic quality standards has been unclear. Such disparities associated with recommended care are widely reported and comprise what is known as the “evidence-practice gap”. Therefore, measuring the “gap” is an essential first step toward improving the quality of primary care. McGlynn et al reported that patients in the United States received only about half the recommended care processes. In Japan, about 40% of recommended care is reportedly not provided in hospital ambulatory primary care settings.

We found similar adherence rates to those of corresponding QIs in hospital ambulatory primary care settings in Japan, 2004-2007: taking smoking status information (23.5% vs 24%) and prescribing inhaled steroids to asthmatic patients with daily short-acting beta 2 agonist inhalers (85.5% vs 82%). Adherence to the QI of annual eye examinations in diabetes patients was higher than that shown in primary care settings in Japan (21.3% vs 12.4%-13.9%), but was similar to the 20.8% adherence shown for National Health Insurance claims data.

Adherence to pneumococcal vaccination history documentation was very low (4.6%). Since the routine pneumococcal vaccination program for the elderly was started in 2014 in Japan, vaccination rates among adults older than 65 years have increased, reaching 33% in 2016. A previous study reported that there is a large disparity between vaccination documentation and actual patient vaccination. Given that pneumococcal vaccinations are recommended every 5 years, reliable documentation of vaccination history is important for adherence to vaccination.

The number of eligible QIs and quality of care varied substantially among clinics. Previous studies have reported a similarly large variation in the number of eligible QIs, although the variation in the present study might be explained by differences in clinic characteristics. Nonphysician medical staff may play an important role in the high variation of some QI scores among clinics. Given that the mean consultation time for a patient visit is only 6.16 minutes in Japanese clinics, physicians may not have enough time to take a thorough past history or to conduct an interview to identify the main caregiver of a dementia patient. Further studies are needed to explain the interclinic variation to improve quality of care.

One possible explanation for the wide variation in quality observed in this study may be the lack of monitoring systems for quality of care in clinics in Japan. One effective intervention to reduce the “evidence-practice gap” may be to modify physicians’ practice behavior, which will require audit and feedback. A systematic review indicated that feedback may be more effective when baseline performance is low, when feedback is provided more than once, and when it includes both explicit targets and an action plan. Audit and feedback may be used on their own or as a component of multifaceted quality improvement interventions. A previous study showed that a multifaceted intervention using audit and feedback improved quality of care in diabetes patients in a primary practice setting in Japan. Further studies are needed to evaluate their effectiveness in improving quality of primary care.

Our study has several limitations. First, our findings are limited to samples from only four clinics in Hokkaido, Japan; a larger sample of clinics might show different results. Second, although the participating clinics were primary care clinics with a few physicians, physicians’ specialty and patients’ characteristics might have influenced the results. Given that patients have free access to physicians, some are expected to choose clinics with physicians with their preferred specialties. We did not collect information on the physicians’ backgrounds or the patients’ characteristics because of confidentiality. Third, the use of EMRs might have affected the results. While 35.0% of clinics use an EMR system in Japan, all participating clinics in the present study used the same EMR system. Although EMR systems in clinics do not usually include functionality to help physicians maintain a high quality of care, it is possible to customize them, such as adding useful templates for smoking status or critical vaccination history. As EMR use in clinics increases, EMR systems should be improved to be more useful for quality improvement. Fourth, no validated QIs for Japanese primary care setting had been established at the time of the study, and we used QIs which were developed based on a standard method for developing QIs but not yet validated. Finally, adherence rates were derived only from information available from medical records; nevertheless, while medical records have been shown to be an imperfect reflection of actual care provided, poor documentation is itself correlated with a poor process of care.

In summary, we found that quality of care in primary care clinics in Japan varied, even among the few clinics examined. Future studies should focus on timely, ongoing monitoring, effective feedback at a large scale, and sound quality improvement interventions in primary care clinics.
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CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

ETHICS APPROVAL

All research protocols were reviewed and approved by the institutional review board of the National Hospital Organization Tokyo Medical Center.

REFERENCES

1. Starfield B, Shi L. Policy relevant determinants of health: an international perspective. Health Policy. 2002;60(3):201–18.
2. Franks P, Fiscella K. Primary care physicians and specialists as personal physicians. Health care expenditures and mortality experience. J Fam Pract. 1998;47(2):105–9.
3. Ellner AL, Phillips RS. The coming primary care revolution. J Gen Intern Med. 2017;32(4):380–6.
4. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q. 2005;83(3):457–502.
5. Ikegami N, Yoo BK, Hashimoto H, et al. Japanese universal health coverage: evolution, achievements, and challenges. Lancet. 2011;378(9796):1106–15.
6. Tsuda T, Aoyama H, From J. Primary health care in Japan and the United States. Soc Sci Med. 1994;38(4):489–95.
7. Hashimoto H, Ikegami N, Shibuya K, et al. Cost containment and quality of care in Japan: is there a trade-off? Lancet. 2011;378(9797):1174–82.
8. Shibuya K, Hashimoto H, Ikegami N, et al. Future of Japan’s system of good health at low cost with equity: beyond universal coverage. Lancet. 2011;378(9798):1265–73.
9. Levitt CHL. Quality in family practice book of tool. Hamilton: Macmaster Innovation Press; 2010.
10. Engels Y, Campbell S, Dautzenberg M, et al. Developing a framework of, and quality indicators for, general practice management in Europe. Fam Pract. 2005;22(2):215–22.
11. Sutcliffe D, Lester H, Hutton J, Stokes T. NICE and the Quality and Outcomes Framework (QOF) 2009-2011. Qual Prim Care. 2012;20(1):47–55.
12. Ukawa N, Ikai H, Imanaka Y. Trends in hospital performance in acute myocardial infarction care: a retrospective longitudinal study in Japan. Int J Qual Health Care. 2014;26(5):516–23.
13. Ukawa N, Tanaka M, Morishima T, Imanaka Y. Organizational culture affecting quality of care: guideline adherence in perioperative antibiotic use. Int J Qual Health Care. 2014;27(1):37–45.
14. Fukushima S, Shimizu S, Nihata K, et al. Development of quality indicators for care of chronic kidney disease in the primary care setting using electronic health data: a RAND-modified Delphi method. Clin Exp Nephrol. 2016;21(2):247–56.
15. Higashi T. Lessons learned in the development of process quality indicators for cancer care in Japan. Biopsychosoc Med. 2010;4:14.
16. Higashi T, Nakamura F, Shimada Y, et al. Quality of gastric cancer care in designated cancer care hospitals in Japan. Int J Qual Health Care. 2013;25(4):418–28.
17. Mukai H, Higashi T, Sasaki M, Sobue T. Quality evaluation of medical care for breast cancer in Japan. Int J Qual Health Care. 2015;28(1):110–3.
18. Hayashino Y, Ishii H. The relationship between patient perception of healthcare provision by professionals and the self-care activity of patients with diabetes: Japanese subgroup analysis of the second Diabetes Attitudes, Wishes, and Needs (DAWN2) study. Diabetol Int 2016;7(2):111–8.
19. Hayashino Y, Suzuki H, Yamazaki K, Goto A, Izumi K, Noda M. A cluster randomized trial on the effect of a multifaceted intervention improved the technical quality of diabetes care by primary care physicians: The Japan Diabetes Outcome Intervention Trial-2 (J-DOIT2). Diabet Med. 2015;33:599–608.
20. Campbell SM, Braspenninig J, Hutchinson A, Marshall MN. Research methods used in developing and applying quality indicators in primary care. BMJ. 2003;326(7393):816–9.
21. Matsumura S. Final research report: comprehensive assessment of primary care services of community clinics using standardized clinical indicators [Internet]. 2015 [cited April 2018]. Available from https://kaken.nii.ac.jp/ja/report/KAKENHI-PROJECT-24616029/24616029seiika/
22. Arora VM, Johnson M, Olson J, et al. Using assessing care of vulnerable elders quality indicators to measure quality of hospital care for vulnerable elders. J Am Geriatr Soc. 2007;55(11):1705–11.
23. McGlynn EA, Asch SM, Adams J, et al. The quality of health care delivered to adults in the United States. N Engl J Med. 2003;348(26):2635–45.
24. Askari M, Wierenga PC, Eslami S, Medlock S, de Rooij SE, Abuhanna A. Assessing quality of care of elderly patients using the ACOVE quality indicator set: a systematic review. PLoS ONE. 2011;6(12):e28631.
25. Committee on Quality of Health Care in America. Institute of Medicine. Crossing the quality Chasm: a new health system for the 21st century. Washington, DC: National Academies Press; 2001.
26. Utsugi-Ozaki M, Bito S, Matsumura S, Hayashino Y, Fukuhara S. Physician job satisfaction and quality of care among hospital employed physicians in Japan. J Gen Intern Med. 2009;24(3):387–92.
27. Tomio J, Toyokawa S, Tanihara S, Inoue K, Kobayashi Y. Quality of care for diabetes patients using National Health Insurance claims data in Japan. J Eval Clin Pract. 2010;16(6):1164–9.
28. Ministry of Health, Labor and Welfare (Japan). Vaccination rates of the routine vaccination program. [updated April 2018]. Available from http://www.mhlw.go.jp/file/05-Shingikai-10601000-Daijink-anboukouseikagakuka-Kouseikagakuka/0000163874.pdf.
29. Woolridge ADN, Arato N, Sen A, Amenomori M, Fetters MD. Truth or fallacy? Three hour wait for three minutes with the doctor: findings from a private clinic in rural Japan. Asia Pac Fam Med. 2010;9(1):11.
30. Ivers N, Jamtvedt G, Flottorp S, et al. Audit and feedback: effects on professional practice and healthcare outcomes. Cochrane Database Syst Rev. 2012;6:CD000259.
31. Ministry of Health, Labor and Welfare (Japan). Current state of information technology in medical field. [updated April 2018]. Available from http://www.mhlw.go.jp/stf/seisakunitsuite/bunya/kenkou_iryou/iryou/johoka/
32. Luck J, Peabody JW, Dresselhaus TR, Lee M, Glassman P. How well does chart abstraction measure quality? A prospective comparison of standardized patients with the medical record. Am J Med. 2000;108(6):642–9.
33. Solomon DH, Schaffer JL, Katz JN, et al. Can history and physical examination be used as markers of quality? An analysis of the initial visit note in musculoskeletal care. Med Care. 2000;38(4):383–91.

34. Kahn KL, Rogers WH, Rubenstein LV, et al. Measuring quality of care with explicit process criteria before and after implementation of the DRG-based prospective payment system. JAMA. 1990;264(15):1969–73.

### APPENDIX

#### Primary Care Practice in Japan (QIPC-J)

| Category                           | Description of QIs                                      | Resources |
|------------------------------------|--------------------------------------------------------|-----------|
| Comprehensive care/standardized care |                                                        |           |
| 1 Chronic disease management       | (hypertension)                                          | MCD       |
| 2 Chronic disease management       | (newly diagnosed hypertension)                         | MCR       |
| 3 Chronic disease management       | (lifestyle modification)                                | MCR       |
| 4 Chronic disease management       | (hypertension)                                          | MCR       |
| 5 Chronic disease management       | (diabetes)                                              | MCR       |
| 6 Chronic disease management       | (urinary protein check in diabetes)                     | MCD       |
| 7 Chronic disease management       | (annual eye examination in diabetes)                   | MCR       |
| 8 Chronic disease management       | (diabetic neuropathy screening)                         | MCR       |
| 9 Chronic disease management       | (peak expiratory flow rate readings in asthma)         | MCR       |
| 10 Chronic disease management      | (an inhaled steroid for asthma)                         | MCR       |
| 11 Emergency care (headache)       |                                                        | MCR       |
| 12 Emergency care (low back pain)  |                                                        | MCR       |
| 13 Chronic disease management      | (identify main caregiver of dementia patient)           | MCR       |
| 14 Complete list of current medications in chronic disease patient | | MCR       |
| 15 Smoking habits                  |                                                        | MCR       |
| 16 Smoking cessation               |                                                        | MCR       |
| 17 Pneumococcal vaccination        |                                                        | MCR       |
| 18 Baby immunization               |                                                        | PS        |
| 19 Monitoring of out-of-office care |                                                        | PS        |

(Continued)

### APPENDIX (Continued)

| Category | Description of QIs                                      | Resources |
|----------|--------------------------------------------------------|-----------|
| Access   |                                                        |           |
| 1 Out-of-hours care                        | PS        |
| 2 Response to medical conditions other than current monitoring care | PS        |
| 3 Timely access to medical history         | PS        |
| Communication                               |                                                        |           |
| 1 Informed decision making                 | PS        |
| 2 Respect for patient preferences          | PS        |
| 3 Respect for patient lifestyle            | PS        |
| 4 Plain explanation of medications         | PS        |
| 5 Respect for patient privacy              | PS        |
| 6 Friendliness of clinic's staff           | PS        |
| 7 Encourage patient to ask health problem  | PS        |
| 8 Sincere and honest attitude to patient's health problems | PS        |
| Coordination                               |                                                        |           |
| 1 Helping identifying specialists          | PS        |
| 2 Prepare a referral letter to specialists  | PS        |
| 3 Helping patient understanding specialist's explanation | PS        |
| Understanding of patient's background     |                                                        |           |
| 1 Patient's occupation, role in daily life and with whom his/her lives | MCR       |
| 2 Consideration of patient's cost          | PS        |
| 3 Understanding patient's role in social life | PS        |
| 4 Understanding patient's beliefs and values | PS        |
| 5 Consideration of the local community     | PS        |
| 6 Encourage patient self-management        | PS        |

MCD: medical claims data, MCR: medical chart reviews, PS: patient surveys.

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