Evaluating Quality of Care in Community-Dwelling Adults with Multiple Chronic Conditions

Higashi T, Wenger NS, Adams JL, et al. Relationship between number of medical conditions and quality of care. N Engl J Med 2007;356:2496–504.

Study Overview

Objective. To examine the relationship between the number of chronic conditions a patient has and the quality of care received.

Design. Cross-sectional study.

Setting and participants. Data were analyzed for community-dwelling adults from 3 studies: the Community Quality Index (CQI) study (6712 adults living in 12 metropolitan areas) [1], the Assessing Care of Vulnerable Elders (ACOVE) study (372 adults aged ≥ 65 years enrolled in 2 managed care organizations) [2,3], and the Veterans Health Administration (VHA) project (596 male veterans aged ≥ 35 years from 2 Veterans Integrated Services Networks) [4].

Main outcome measures. In all 3 cohorts, quality of care was measured with the use of quality of care indicators related to care process. These indicators were developed for each cohort separately using systematic reviews and the judgment of expert panels [5]. The CQI study involved 439 quality indicators, the VHA project used 348 quality indicators, and the ACOVE study used 203 quality indicators. The effect of care by specialists, health care utilization (visits, hospitalizations), and patient sociodemographic characteristics on the relationship between quality of care and number of chronic conditions was also evaluated.

Main results. An increase in the number of chronic conditions was associated with higher-quality care. Each additional condition was associated with an increase in the quality score of 2.2% (95% confidence interval [CI], 1.7–2.7) in the CQI cohort, 1.7% (95% CI, 1.1–2.4) in the ACOVE cohort, and 1.7% (95% CI, 0.7–2.8) in the VHA cohort. Although adjusting for health care utilization, sociodemographic characteristics, and subspecialty care reduced the magnitude of the relationship between quality of care and number of chronic conditions, the relationship remained positive in all 3 cohorts.

Conclusion. Quality of care increases as a patient's number of chronic conditions increases.

Commentary

Conventional wisdom suggests that patients with multiple chronic conditions may be at higher risk of receiving poorer overall quality of care compared with patients with single or no chronic conditions [6]. In pay-for-performance programs, payment incentives are linked to performance measures that use established quality metrics. Contrary to expectations, this study by Higashi et al demonstrated that quality of care delivered improved with increasing number of chronic conditions.

Is the number of chronic conditions a good measure of disease complexity? The authors recognize that a simple count of conditions is likely a crude measure, and this study does not take into account the complexity or severity of disease. For instance, a patient with chronic obstructive pulmonary disease, dementia, and congestive heart failure can be very different in terms of complexity compared with a patient with arthritis, hypertension, and dyspepsia. However, the consistency of the findings across the CQI, ACOVE, and VHA cohorts, which included patients with multiple different chronic conditions, is reassuring. Furthermore, a previous study focusing on vulnerable elders who were at increased risk of death within 2 years also found that multimorbidity was associated with greater overall quality scores [6]. The results of the current study provide reassurance that incentives appear correctly aligned for physicians who care for patients with complex conditions. However, to further our understanding of the potential ramification of pay-for-performance schemes on caring for the functionally limited or complex patient, future research could focus on the relationship between quality of care processes and patient functional status or severity of illness. Functionally limited or complex patients are probably a fraction of a provider's patient population and most likely will not impact quality incentive schemes. However, such research may help alleviate any remaining concerns.

Applications for Clinical Practice

Physicians caring for patients with multiple chronic conditions should not be overly concerned that the use of quality of care processes to evaluate performance will lead to an unfair evaluation of their medical care in pay-for-performance schemes.

—Review by Salomeh Keyhani, MD, MPH

References

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