Screening Guideline Adherence: Clinic versus Patient Factors

Ramsey SD, Cheadle AD, Neighbor WE, et al. Relative impact of patient and clinic factors on adherence to primary care preventive service guidelines: an exploratory study. Med Care 2001;39:979–89.

Study Overview

<u>Objectives</u>. To determine if facility (clinic) characteristics have a greater impact than patient characteristics (demographic, behavioral, and functional) on the utilization of preventive services (mammogram, cholesterol screen, Papanicolaou [Pap] smear, and retinal examination for diabetics); and to determine if any significant patient characteristics would explain nonadherence.

<u>Design</u>. Retrospective cohort study using administrative and patient survey data.

<u>Setting and participants</u>. Patients seen at 2 university-based clinics (the family medicine clinic [UW-FMC] and the general internal medicine clinic [UW-GIM] at the University of Washington) and 1 county hospital–based clinic (Harborview Medical Center adult medicine clinic [HMC]) serving the Puget Sound area between 1998 and 1999. HMC patients mainly are covered by Medicaid or lack health insurance. Screening eligibility for the preventive services was defined by age, sex, and diagnosis according to U.S. Preventive Services Task Force guidelines.

<u>Main outcome measures</u>. Multivariate models were developed, one using the available administrative data and another using detailed health and functional status (assessed using the SF-12) and behavior data gathered from clinic-wide surveys (a questionnaire [response rate, 65%] and follow-up telephone surveys [response rate, 77.6%]). Patient characteristics included education, age, sex, race, smoking status, alcohol use, exercise, and type of insurance coverage.

<u>Main results</u>. Compared with the university clinic populations, the patients in the community were more likely to be male, non-white, less educated, unemployed, smokers, non-drinkers, and non-exercisers. The unadjusted rates of adherence in each clinic showed that patients were more likely to receive screening mammograms, Pap smear, and cholesterol screening if they were enrolled in the university-based clinics.

After adjusting for patient-specific and clinic-specific factors, the patients seen at the UW-FMC were more likely to have an intervention than the patients at the UW-GIM and the HMC clinics. Patients at HMC were 26.4% less likely to get a mammogram, 10.5% less likely to get a Pap smear, and 10% less likely to get cholesterol screening than patients at UW-FMC. The only variable that was not statistically significant was the retinal examination. Age, residence outside the Seattle area, and lack of insurance were also associated with a lower chance of getting screening procedures. Additional calculations for the odds ratios (OR) were done using either a limited model, which included variables that were available from the automated administrative databases (eg, age, gender, type of insurance, and zip code of residence), or an expanded model, which included administrative variables plus detailed demographic, health habit, and health status variables from the survey. The expanded model performed marginally better than the limited model, but the confidence intervals overlapped. After adjusting for the patients' characteristics, the odds ratios for utilizing the 3 screening services at the county hospital remained significantly below those of the university clinics. For mammogram, the OR was 0.15 (95% confidence interval [CI], 0.06 to 0.35), for Pap smear the OR was 0.32 (95% CI, 0.21 to 0.50), for cholesterol the OR was 0.19 (95% CI, 0.09 to 0.38) and for diabetes retinal examination the OR was 10.68 (95% CI, 0.03 to 3.01).

<u>Conclusion</u>. The clinic itself was the most important predictive factor for utilization of preventive services; patient characteristics did not play an important role.

Commentary

Several large randomized controlled trials have shown that preventive services can reduce morbidity and mortality. Ramsey et al tried to determine whether patient or clinic

characteristics are more important in predicting delivery of these services. This study's strengths are that they used an accurate system to collect the data and that they gathered additional demographic information by sending questionnaires and by conducting telephone surveys. There was also a large database of patients ($n = 20,500$).

A major limitation of this study was that the authors did not determine which physicians were advising their patients to obtain preventive health services and which ones were not. Ramsey et al could have measured this indirectly by including a question on the survey that asked patients if they had received counseling. Furthermore, the authors did not provide information about the physicians' characteristics (eg, board certification, years in practice, age); whether the physicians were residents, attending physicians, or both; or whether other health care personnel (eg, physician assistants or nurse practitioners) were used. In addition, the study's power is limited by the wide confidence intervals in its odds ratios. Finally, a logistic flaw of this study is that it addressed only a few of the recommended preventive services.

The 2 university clinics, which did better than the community clinic, used an automated computer reminder system. Previous studies by Bonevski et al [1] and Litzelman et al [2] showed that an automatic reminder system could improve screening for blood pressure, alcohol use, and cholesterol. There was also a difference between the 2 university clinics, in that UW-GIM did not perform as well as UW-FMC did. Differences in provider type, however, may explain these findings (eg, family practitioners may be more inclined to discuss preventive services). Unfortunately, these and the study's other findings are not conclusive enough to help us decide how to implement better delivery of preventive services. The study does suggest, however, that the operational setting of the clinic may be more important than the individual characteristics of the patients in encouraging delivery of preventive health services.

Applications for Clinical Practice

This study raises more questions than it attempts to answer and should be considered hypothesis-generating. Further high-quality studies, such as randomized controlled trials, are needed to determine how to improve adherence to preventive services guidelines. Achieving improvement may require innovative approaches, such as using multiple providers. A recent study by Lafata et al that focused on diabetics showed that preventive screening was more likely to be delivered if offered by not just 1 health care provider but by the endocrinologist and the primary care provider [3].

–Review by Benoit Tonneau, MD

References

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