Communications

Improving Physician Compliance With Preventive Medicine Guidelines

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Several studies[1-4] have documented low levels of compliance by physicians with screening guidelines. Although some studies have investigated methods of changing physician behavior,[5] relatively few studies have examined methods of changing physicians' preventive medicine behavior.[3,6-11] Various strategies have been suggested for increasing compliance including chart audit and checklists. In the two studies reported here, two hypotheses were tested: (1) specific educational feedback based on chart audit increases physician compliance with the practice of preventive medicine, and (2) a checklist of deficiencies derived from a nurse chart audit for selective preventive medicine items increases compliance with those items. Implicit in the first hypothesis is a test of an educational intervention, and in the second, a test of a managerial intervention.

Methods

In the first study the effect of specific educational feedback was measured by monitoring its effect on charts other than those in which the feedback was provided. The study intervention lasted for four weeks. Twelve interns were randomly allocated to receive either routine comments only or specific educational feedback about preventive medicine deficiencies found in their charts as well as routine comments on the content of their progress notes. Fifty percent of all charts of adult patients seen by the interns were reviewed for a four-week period prior to and following the intervention. The audit focused on screening tests (evidence of smoking and alcohol history, tuberculosis test, VDRL, weight, blood pressure, breast examination, Papanicolaou smear, and stool guaiac) and documentation of tetanus immunization. Auditors were blinded to study group assignments.

In the second study the effect of the nurse chart audit was measured directly by re-audit of the same charts. Following the completion of the first study, the second was implemented and continued for one year. In this study nurses audited each chart prior to the encounter for documentation of tetanus immunization, stool guaiac, and Papanicolaou smear screening results. Deficiencies were noted on a simple checklist attached to the front of the chart for the provider to review prior to the encounter. After 12 months, a random chart review was conducted of all adult patients who had visited during the previous 12 months so that physician compliance with tetanus toxoid immunizations, stool guaiac, and Papanicolaou smear screening tests could be determined. Data from the chart review in the first study were pooled and used as historical controls. As a concurrent control, compliance with the use of the progress note checklist was examined.

The data were analyzed using the SAS software package.[12] The unit of analysis was the patient

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chart. Chi-square tests and analysis of variance were used.

Results

In the first study the mean number of items recorded was 5.1 (standard deviation, 1.6) out of a maximum of 11. There were no significant differences in screening behavior between control and intervention groups either before or after the intervention ($P > .1$). Analysis of variance, however, revealed statistically significant consistent differences in the screening performance of individual residents ($P < .0001$).

Since year of residency training was not related to performance following the nurse intervention ($P > .2$), the entire sample was pooled for comparison with the historical controls. Tetanus toxoid immunization rates increased from 31 percent at base line to 56 percent after the nurse intervention (chi-square = 26, $P < .001$). Stool guaiac rates increased from 44 percent to 61 percent (chi-square = 4.45, $P < .05$). Papanicolaou smear rates increased from 72 percent to 80 percent (chi-square = 1.81, $.1 < P < .2$). There were no changes in the use of the progress note checklist.

Discussion

Results of the first study failed to support the hypothesis that preventive medicine behavior could be increased through an educational intervention. As residents performed at a 40 percent compliance rate, it is not likely that the results reflect inadequate knowledge about screening. It is more likely that the intervention failed to produce a change in attitude or motivation adequate to change behavior. The results may reflect that physicians are relatively resistant to changing their behavior in response to this type of educational intervention.[5] The data provide some evidence for differences among individuals in screening behavior. This variability may mask the relatively small incremental effects of an educational intervention.

The results of the nurse intervention were encouraging, especially for those behaviors that could be accomplished easily without changing the structure of the visit (immunization and stool guaiac cards) in contrast with the pelvic examination required for a Papanicolaou smear. Failure of the Papanicolaou test findings to achieve statistical significance may also be due to the relatively high baseline compliance with this item. The nurse intervention was not a randomized study because logistically it was considered too difficult to involve the nursing staff in a randomized protocol with any reliability. Consequently, the internal validity of the study may be questioned. However, the uniformity of results across resident groups, the absence of any change in the use of the checklist, and the absence of any obvious bias are all reassuring. Similarities in the three resident groups suggest that the result was independent of any generalized learning effect of the training program.

It is concluded that while the conventional educational audit is probably an inefficient and possibly ineffective method, the nurse audit is a cost-effective approach to improving preventive medicine behavior.

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