When 1+2≠3 for Hard-working Rural Physicians

UNDERSTANDING THE challenges and rewards of rural medical practice has long seemed to be the key to designing effective programs to increase the number of rural physicians. We believe that if we could only figure out what negative aspects of rural medicine prompt physicians to leave rural communities, we could solve the attrition half of the perennial rural physician shortage problem. When we also understand what is needed to attract more physicians into rural areas, the shortage can be eliminated completely.

Rural practice is faster paced and demands more time than urban practice. The pace of work is a source of frustration for some rural physicians,[1,2] and excessive work and insufficient time off have been cited by rural physicians as important reasons why some leave their practices[3] and why others will not go to rural areas in the first place.[4] To enhance the retention of rural physicians, rural health advocates have tried to ease physicians' workloads. Efforts have been made to place rural physicians in groups to facilitate cross-coverage arrangements and to provide respite coverage.

The findings of Mainous et al[5] in this issue of the ARCHIVES should now temper our enthusiasm to cure the problem of rural physician attrition by lessening workload demands. In secondary analyses of data from the rural primary care physician cohort of the American Medical Association's 1987 nationwide survey of young physicians, Mainous et al found that three measures of workload were not associated with the retention of physicians. Specifically, physicians who reported that they worked more total hours, provided more after-hours patient care, and saw more patients were no more or less likely than physicians working less hard to indicate that they might leave their practices within the next 2 years. If these findings are valid and generalizable, then solutions to the problem of rural physician attrition will not be found in adjusting physicians' workloads.

Could this study's findings be inaccurate? Beyond the limitations pointed out by the authors, three other nontrivial methodologic issues may be responsible for this study's negative findings. Physicians in this study were a cross-sectional (prevalence) population, ie, physicians working in rural settings at a specific point in time. Cross-sectional populations pose particular dangers in studies of factors adversely affecting retention.[6] To illustrate the issue, consider the situation in which excessive workload does, in fact, lead some physicians to leave their practices. Before any study is conducted, physicians working in excessively busy

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practices could be expected to leave in greater numbers than physicians who started working contemporaneously in less busy rural settings. The result is a selection bias in which fewer physicians working in situations that adversely affect their retention are still around to be included in the study, and potentially no retention association will be found for workload and for other factors that influenced early departure.

The study by Mainous et al[5] asked only whether there was a linear association between workload and retention, ie, whether retention was affected (positively or negatively) over the full range of weekly hours worked by the population of physicians studied. It may be that the relationship between workload and retention is nonlinear. It is possible that there is a threshold number of hours or patients above or below which retention is adversely affected. The relationship even could be bimodal or curvilinear. Workload and retention associations of these kinds likely would have been missed in the analyses of Mainous et al.[5] Dichotomous and exponentiated indicators of workload also should be used in future studies to look for possible nonlinear associations.

It may be that the aspects of rural physicians' workload that are important to their retention were not captured by this study's workload indicators. As the authors pointed out, the strain of endless days and nights on call is the most often heard complaint about the demands of rural practice, where it is difficult to have a life free from work. Frustration arises from

rarely being able to complete dinner with the family or to have an afternoon of relaxation with friends. Although Mainous et al found that hours spent in the evening *actually caring for patients* were unassociated with retention, could it be that simply the total number of on-call nights, regardless of how busy each night is, is the critical factor causing fatigue in rural physicians? In another recent survey, rural physicians who reported that they were on call 3 or more nights each week demonstrated significantly poorer retention than those who were on call less often.[7] Further studies will help clarify whether the workload of rural physicians is or is not related to their retention.

It generally is assumed that to identify the dissatisfying aspects of rural practice is to know why physicians leave and to know what must be fixed to enhance retention.[8-10] This assumption also is challenged by Mainous et al,[5] who found that even though objective measures of workload are not associated with physicians' attrition, *dissatisfaction with workload* is. If Mainous et al had looked only at how the desire of some physicians to work fewer hours (a measure of dissatisfaction with current hours worked) was associated with attrition, then they might have wrongly assumed that actual work hours also predicted attrition and that decreasing work hours would improve retention. The greatest contribution of Mainous et al is the lesson that one cannot rely solely on physicians' expressed concerns about rural practice to understand attrition; attrition factors must be confirmed by other, more direct approaches.

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What then is the association between physicians' satisfaction and retention and attrition? In common discourse and in studies of worker turnover, satisfaction typically is regarded as a mechanism through which features of people's jobs affect their attrition (model 1) (**Figure 1**).[11] The usually regarded sequence of events is that when various aspects of physicians' jobs cause them sufficient displeasure, they will *as a consequence* look for work elsewhere. Data from Mainous et al[5] suggest that this association does not hold in the case of rural physicians' workload.

One way to interpret their findings, although Mainous et al do not discuss it, is to reverse the association so that physicians' retention or attrition plans are understood to affect their satisfaction with workload (model 2) (**Figure 2**). How can anticipated retention affect satisfaction? Experiments in social psychology have found that it is not uncommon for a person's actions or planned actions to alter his or her feelings about related issues.[12] In the case of attrition and retention of rural physicians, it may be that those anticipating long-term retention have little difficulty coping with the demands of rural practice. In contrast, physicians who know that they will be leaving soon begin distancing themselves from their practices and find less energy to meet their requirements cheerfully. Thus, only for those distanced or otherwise uninvested in their practices does rural workload become burdensome.

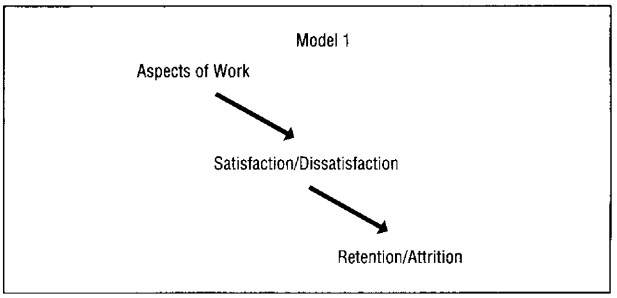

Figure 1. *Model of traditionally believed relationship between satisfaction and retention.*

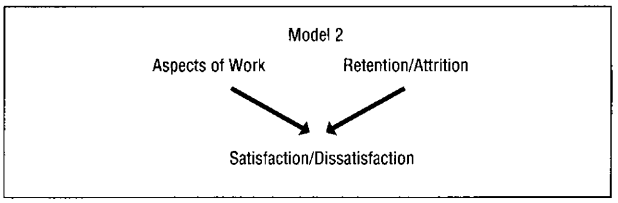

Figure 2. *Alternative model of relationship between satisfaction and retention.*

It is likely that with future study, both models 1 and 2 will be found to hold, but for different facets of physicians' work and satisfaction. For policy makers to solve the problem of rural physician attrition, they will need to address only those aspects of rural physicians' work and satisfaction that are associated with retention according to model 1. Retention will not be enhanced by addressing dissatisfying issues for rural physicians that result from their previously established plans to leave, as occur according to model 2. Dissatisfaction in these cases is a symptom of leaving, not a cause of leaving. The symptom might subside with the right interventions, but the disease of attrition will remain.

Mainous et al[5] have taught us something of the complexities of the relationships between rural physicians' workload, their reactions to it, and their retention. There likely will be some disappointing outcomes if we rush in to address the problem of the shortage of rural physicians with solutions like workload relief, which seem to make sense but have not been proven effective. Quick-fix solutions have been pursued too often, and this, in part, explains why the shortage is still with us. At this point, workload relief

efforts can be accepted as good for the morale of rural physicians but only as possibly effective as measures to enhance the recruitment of rural physicians and to stem their attrition.

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