The work of Maglione et al.1 in this issue, “Mass Mailings Have Little Effect on Utilization of Influenza Vaccine Among Medicare Beneficiaries,” is an important addition to the growing body of rigorous intervention studies and systematic reviews that are helping to refine approaches to improve vaccine coverage in communities and healthcare systems.

This study, which is based on part of a larger systematic reviews2 by the Center for Medicare and Medicaid Services (CMS), formerly the Health Care Financing Administration examines the effect of mass mailings in promoting influenza vaccination of Medicare beneficiaries. The report is based on nine interventions from six states, of which only two had been previously published. Net percentage point improvements in coverage ranged from 1% to 8.4% (median, 1.7%).

This result is a bit disappointing and perhaps puzzling given that several recent, well-done systematic reviews have suggested that reminder systems improve vaccination coverage by approximately 10 percentage points in a variety of populations.3,4 Therefore, we thought it important to try to reconcile the results of the various available systematic reviews and to assess their implications for research and practice.

How Are We to Reconcile This Study with Previous Research?

As noted by Maglione et al.,1 one possible explanation is that some of these studies may not have provided true reminders. The Task Force on Community Preventive Services3 has previously defined reminders and recall, respectively, as notifying members of a target population that they are due (reminders) or late (recall) for vaccination. The Task Force would have called less specific information (such as a letter about influenza vaccine without a specific reminder or recall) to be an education-only intervention. Considerable conceptual and empirical work now demonstrates that education alone is less effective in changing behavior than education combined with other strategies. Knowledge is important but is not enough.

Another possible explanation for the differences in effect size across meta-analyses is that this study included different primary studies compared with previous reviews. In an effort to minimize publication bias (i.e., that studies with more-positive effects are more likely to be published or to be published sooner5), Maglione et al.1 went to considerable lengths to find and communicate previously unpublished experiences that might have caused overestimates of mass mailing effects in previous reviews. We commend Maglione and colleagues for having gone to the considerable effort of finding and publicizing previously unpublished work, the original investigators and the participating peer review organizations for doing the evaluations, and the CMS for supporting the work and the synthesis. It is at least as important to learn from our failures as from our successes. Other funders, investigators, and synthesizers should strive to replicate this excellent example. On the other hand, we are aware of at least one positive study that might have been missed in spite of apparently having met the inclusion criteria for this review. That study, published in 1999, was a randomized controlled trial conducted among almost 10,000 Medicare beneficiaries in Indiana. It found a significant increase in coverage rates (4.8%) in people receiving a mailed influenza reminder compared to a control group.6

A third possible explanation for the results is that these studies were ongoing at a time of considerable attention to adult immunizations, making the independent contribution of this relatively modest intervention difficult to discern. The Montana, Minnesota, and Wyoming studies discussed in Maglione et al.1 showed increases in vaccination in the control group of 4.4, approximately 7, and 11.5 percentage points, respectively. The comparison group in the Washington study showed an increase of claims of 20 percentage points. Nationally, during the time these studies were being conducted (1994–1997), coverage rates also rose substantially (approximately 8 percentage points).7 A rising tide may raise all boats, but is likely to make the...
independent contribution of any one intervention difficult to discern. We would be cautious about generalizing the modest marginal effects shown here to situations in which there is less background intervention activity.

**How Can the Findings from This Study Inform Public Health Practice?**

The study by Maglione et al. underscores the need to choose interventions thoughtfully on the basis of what has been shown to be effective elsewhere and on the unique needs of particular communities or healthcare systems. The Task Force on Community Preventive Services has published both descriptions of interventions that have worked previously and advice about matching effective interventions to the particular needs of local communities and healthcare systems to improve vaccine coverage in adults and children. Also important, we need to implement interventions carefully and with fidelity. For example, generic education-only interventions are probably not an adequate substitute for true reminders.

Next, although Maglione et al. have concluded that small percentage-point increases in vaccine coverage are not “clinically significant,” such increases might nonetheless have public health importance. Small percentage-point improvements achieved by large populations might have substantially greater impact than larger percentage-point improvements in small populations. Furthermore, assuming that reminders or education could be delivered at minimal cost, modest percentage-point improvements in coverage could result in a reasonable cost per additional vaccination. We think that more programmatic work is needed to overcome the barriers to delivering accurate, credible, and effective reminders, especially from larger organizations such as managed care organizations, funders of health care, worksites, or public health or healthcare agencies, and that relatively modest percentage-point changes need not, necessarily, be a barrier to implementing such programs.

**How Can the Findings from This Study Inform Additional Research?**

As the authors have suggested, it may be possible to develop smarter mailings. Mailings might be better targeted, for example, focusing only on people who did not receive an influenza vaccine in the previous year. Although the Washington study cited in Maglione et al. did not find an effect even when only previously unvaccinated people were targeted, none of the other studies attempted to focus efforts on populations that were particularly at risk of underimmunization. Similarly, although reminders seem to be generally effective across a wide range of characteristics (e.g., signed by a personal physician or not, providing more specific or more general information), it may still be possible to identify particular characteristics that contribute to greater effectiveness generally, or are particularly well tailored to the needs of particular clients, or both. Indeed, better designed or targeted mailings might lead to more-effective interventions, more efficient use of resources, or both, and are worthy of additional exploration. In addition, there may be more-efficient ways to deliver materials. For example, e-mail might be an efficient way of reaching some audiences.

**Conclusion**

We commend these researchers for highlighting the continuing effort that needs to be placed on vaccinating our older adult population in the United States, a population in which influenza and its complications kill about 20,000 people every year. Increasing use of influenza as well as pneumococcal vaccine among older adults would have tremendous health impacts. It is estimated that for each additional 1 million elderly people vaccinated each year, 900 deaths and 1300 hospitalizations would be averted (Centers for Disease Control and Prevention, unpublished data, 2002). The stakes are too high to fail to bring vaccination and its benefits to people who need it.

**References**