

fit perfectly. While Dr Winett advocates more physical activity interventions, we note that he also concedes that results to date have been disappointing.

We appreciate his interest in our work and collegial discussion of how to make public health interventions more effective.

*John B. McKinlay, PhD
Lisa D. Marceau, MPH*

The authors are with the New England Research Institutes, Watertown, Mass.

Requests for reprints should be sent to John B. McKinlay, PhD, New England Research Institutes, 9 Galen St, Watertown, MA 02172 (e-mail: johnm@neri.org).

References

1. McKinlay JB, Marceau LD. A tale of 3 tails. *Am J Public Health*. 1989;89:295-298.
2. McKinlay J. The new public health approach to improving physical activity and autonomy in older populations. In: Heikkinen E, Ruoppila I, Kuusinen J, eds. *Preparation for Aging*. London, England: Plenum Publishers, Ltd; 1995.

Immunization Practices

The article by Fairbrother et al.¹ raises questions regarding physicians' immunization practices and has significant implications for both child health promotion and future study. Immunization has long been a bulwark of pediatric public health, aggressively promoted for nearly a century in the United States, as new antigens became available. A look at the data presented reveals that several important issues remain.

The financial barriers to immunizing pediatric patients are multifaceted. Of significance is the discrepancy between the recommendations of the Advisory Committee on Immunization Practices and the American Academy of Pediatrics Committee on Infectious Disease, as well as the subsequent delay in reimbursement for new vaccines. Witness the present rotavirus vaccine quandary, which has resulted in the inclusion of language in the American Academy of Pediatrics statement that allows fiscal reality to guide pediatrician use of this outstanding public health measure.² Similarly, the previously approved varicella vaccine, when recommended, was neither initially included in the Federal Vaccines for Children program nor covered by most public or private insurers. These circum-

stances create a disincentive for physicians to offer such vaccines.

Fairbrother et al. address bonuses and enhanced compensation to physicians. Although bonuses, in particular, produced laudable results, it is significant that reimbursement for physicians by Medicaid or private insurance is poor and rarely covers associated costs.³ Data show that physicians tend to refer their patients to public sector clinics to offset such losses. The authors fail to include the necessary concrete data on the poor, urban population that was studied, which would validate their conclusion that incentives or bonuses are truly meaningful.

The article alludes to the barriers created by inadequate physician understanding of the true contraindications to immunization. Recent work has shown that provider education is crucial.⁴ Beyond creating the "immunizable moment," physicians need to clearly understand when immunization is inappropriate.

The study fails to address a third and critical barrier to immunization: inadequate records. Patients change providers frequently under managed care. Without a national immunization registry linked to every provider, this factor will continue to contribute to inadequate rates of immunization in children. Such a system would involve a financial cost to physicians as well as the public but would indeed be a wise investment, one potentially more significant than monetary compensation or bonuses in improving immunization levels in pediatric populations.

Fairbrother et al. have identified an important area for future study as we work together to improve the health of US children via an intervention that is simple, time tested, and effective. □

Bradley J. Bradford, MD

Requests for reprints should be sent to Bradley J. Bradford, MD, Mercy Children's Medical Center, Mercy Hospital of Pittsburgh, 1400 Locust St, Pittsburgh, PA 15219-5166.

References

1. Fairbrother G, Hanson KL, Friedman S, Butts GC. The impact of physician bonuses, enhanced fees, and feedback on childhood immunization coverage rates. *Am J Public Health*. 1999;89:171-175.
2. American Academy of Pediatrics, Committee on Infectious Diseases. Prevention of rotavirus disease: guidelines for the use of rotavirus vaccine. *Pediatrics*. 1998;102:1483-1491.

3. Schulte JM, Brown MR, Schwartz B, Green HG, Haley CE, Anderson RJ. Changing immunization referral patterns among pediatricians and family practice physicians. *Pediatrics*. 1988;87:204-207.
4. Zimmerman RK, Bradford BJ, Janosky JE, Mieczkowski TA, DeSensi E, Grufferman S. Barriers to measles and pertussis immunization: the knowledge and attitudes of Pennsylvania primary care physicians. *Pediatrics*. 1997;13:89-97.

Fairbrother et al. Respond

Bradford's letter underscores some important points to consider in a discussion of financial incentives for immunization. First, he points out that if the goal is to immunize with all approved vaccines, then any financial incentive should apply to all of these vaccines. Lack of authorization for reimbursement for some vaccines under the federal Vaccines for Children (VFC) program could produce financial disincentives to immunize with those vaccines. Although this is certainly the case, it is not pertinent to our study, which examined the current status of vaccines both approved and reimbursed.

Second, he notes that financial incentives need to be meaningful, especially since current reimbursement systems for immunization are often inadequate to cover costs. As our article stated, the physicians in our study were offered bonuses that ranged from \$1000 for improving coverage by 20% at 3 different times in a year to \$5000 for achieving 80% coverage. Thus, physicians in the bonus group had the potential for receiving up to \$15 000 over the course of a year, an amount likely to be meaningful. We noted also that financial incentives in this study were applied on top of New York's fairly generous VFC reimbursement of \$17.85 per dose for administration.

Another condition for achieving immunization coverage, not stated by Bradford, is that physicians need to believe that the goal is attainable. Anecdotal evidence suggests that physicians to the poor, who see children mainly on a walk-in basis when they are sick, may believe that the goal of immunization coverage is out of reach, even though our hypothetical calculations showed the physicians that they could approach 80% coverage if they immunized these children at every opportunity.

Bradford's final point, dealing with poor records as a barrier to immunization, is especially important in the population that we studied: children from poor families may go to several health care providers,