

## Improving Adult Immunization Rates: Overcoming Barriers

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As illustrated by Drs. Vaughn and Miller in this issue of *American Family Physician*,<sup>1</sup> adult vaccinations are underutilized despite proven efficacy and cost-effectiveness.<sup>2</sup> There are many barriers to immunization that are more prominent in adults than in children, including cost, lack of tracking systems, and competing demands.<sup>3</sup>

Most children's vaccinations are covered by private or public insurance, so cost is rarely a factor in this population. Although the Affordable Care Act will provide expanded vaccination coverage for adults in the future, the current cost of vaccines—especially newer ones such as the human papillomavirus vaccine—can be prohibitive for uninsured adults.<sup>4</sup> Even among insured patients, cost and reimbursement can be significant barriers to receiving some vaccines. For example, the herpes zoster vaccine is covered under Medicare Part D but not under Part B, as the pneumococcal and influenza vaccines are. This has created billing issues and costly copayments for patients, which have contributed to the underutilization of the vaccine nationwide.<sup>5</sup>

Unlike childhood vaccinations, which are standardized by age and mandated by schools, adult vaccinations have different target groups and are not statutory, so adults do not have the same impetus to keep track of their immunization records. Adults often receive vaccinations at different locations, and these records do not transfer from institution to institution. This lack of tracking systems can lead to under- and over-vaccination.

Immunization registries provide a way for health care professionals to keep track of vaccinations. At Denver Health, an integrated health system in Colorado, an electronic immunization registry that was initially

used only for children was expanded to include adults in 2002. Anytime a vaccine is given, whether in the hospital, at a specialty clinic, or at a primary care office, this information is entered into the registry. This has helped physicians avoid redundant vaccinations, find immunization history easily, and track immunization rates efficiently. The registry also allows for clinic-specific tracking of immunization rates.

All 50 states have developed their own immunization registries. Although most include persons of all ages, the registries are used primarily for children's records. These registries should be expanded to include more data for adults, as is happening in Colorado and Washington. This would allow a patient's data to be accessible even if he or she moves to another city, and would give practices without electronic records access to Web-based immunization registry technology. State registry information is available at the American Immunization Registry Association Web site (<http://www.immregistries.org/public.php/ImmRegs/regMain.php>). The best possible scenario would be a national immunization registry.

Primary care physicians have many competing demands, and only limited time during office visits to address medical problems and routine health maintenance. We often forget or choose not to discuss immunizations during sick visits.<sup>6</sup> The use of standing orders and patient reminders and recalls can help us overcome this barrier.<sup>7,8</sup> Reminders can be in the form of postcards, letters, or telephone calls. Standing orders can be paper-based or electronic, and can be used by nursing staff to give vaccinations without a physician order. Electronic clinical decision-support (CDS) systems can create individualized orders for patients at the time of their visits. Unlike childhood vaccinations, which are based primarily on age and vaccination history, decisions about adult vaccinations often must take into account comorbid medical conditions.

An electronic CDS system for multiple ►

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vaccinations was implemented at Denver Health in 2007 and has been used for standing orders by physician assistants and nurses. The system reviews patients' immunization histories from the registry, and reviews their electronic list of diagnoses to determine whether a vaccination is recommended. This has led to improvements in immunization rates and has enabled physicians to spend time on other issues during patient visits. The system can be reprogrammed easily when recommended vaccinations change. The Institute of Medicine has been advocating the use of CDS systems for more than a decade. These systems have been used in multiple aspects of medicine and can improve quality of care. They can be created by individual institutions or bought as part of an EHR system. Monetary incentives by the federal government or by private payers are needed to encourage the use of EHR and CDS systems, because many freestanding practices do not currently have access to such technology.<sup>9</sup>

Despite many patient and physician barriers to adult vaccinations, rates can be improved, often with simple interventions such as patient reminders and recalls, standing orders, and patient education. As our health systems become increasingly automated, CDS systems can help make vaccination more efficient and reliable.

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