

Using reminder/recall to improve immunization rates in Arkansas

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Immunizations are one of the top ten public health achievements of the 20th century identified by the Centers for Disease Control (CDC) and one of the most cost-effective. Vaccine-preventable diseases result in increased numbers of doctor visits, hospitalizations and lost parental work time. Every \$1.00 spent on childhood immunization saves \$16.50, and for the basic vaccine series, society saves \$9.9 billion in direct health care costs; 33,000 lives are saved; and 14 million cases of disease are prevented.¹ Healthy People (HP) 2010 sets 80% as the goal for overall immunization rates and 90% for individual vaccines. However, according to the 2010 National Immunization Survey, just 66% of two-year-olds in Arkansas during 2008-09 completed their routinely recommended childhood vaccinations, with individual vaccine rates ranging between 73% and 91%. Under-immunized children lead to outbreaks of disease that have been well documented in the US. Additionally, immunization rates currently fall below the HP 2010 goals for racial/ethnic minorities, people with limited education, the impoverished and the uninsured, preschoolers, and residents of inner-city urban, rural and border areas.

The logistical challenges to immunizations are numerous, including the number of vaccines now recommended, the patchwork financing system in the United States, and sensationalist media coverage of alleged adverse effects of immunizations. The number of childhood diseases protected by routine immunizations has risen from seven in 1985 to 16 in 2010, comprising up to 52 vaccine doses.² Combination vaccines do reduce the number of actual injections, but the time and logistical demands on the office staff has risen considerably. Erratic vaccine supplies have led to shortages of at least seven vaccines in the last 10 years that resulted in significant cohorts of children that were not fully immunized.³ Vaccines are often given at well-child visits, yet many children in Arkansas do not receive timely well-child visits. In 2009, according to the Centers for Medicare & Medicaid Services, just 38% of eligible children (0-21) received a Medicaid-required Early and Periodic Screening, Diagnosis and Treatment (EPSDT) screen.

The cost of immunization has become significant for many practices. The total approximate cost of immunizing boys is now \$1105, and girls \$1407, which is a six-fold increase since 1995. This is due in part to the

newer vaccines being significantly more expensive. Vaccine purchasing costs can now account for 20% of a pediatric practice's expenses.⁴ The cost to a practice includes not only the cost of acquisition, but also the cost of storage, administration and counseling. While the American Academy of Pediatrics (AAP) recommends that immunization reimbursement (excluding administration fee) be 17%-28% above the purchase price, most vaccines are reimbursed at lower rates, with considerable variation among physicians.⁵ The federally-funded Vaccines For Children (VFC) program, instituted in 1994, now purchases slightly more than half of all pediatric vaccine doses and eliminates cost for eligible children. However, many states, including Arkansas, have different acquisition mechanisms, storage requirements and administration requirements of VFC-sourced vaccines compared to those acquired privately, placing an additional administrative burden on practices. A recent study of 600 physicians found that 49% reported delaying vaccine purchases for financial reasons in the prior three years, and 11% of physicians (including 21% of family physicians) seriously considered discontinuing immunizations to children.⁶ This impact may be acutely felt in rural

areas, including many parts of Arkansas, where children are predominantly served by family physicians.

Finally, there have been recent well-publicized incidents of alleged vaccine reactions, including autism, which have also generated numerous legal challenges. Despite overwhelming scientific evidence supporting the safety and efficacy of vaccines, some families are demanding alternate vaccine schedules, selected or complete refusals, and non-medical exemptions from school requirements.⁷ Many physicians now devote significant time and resources for counseling even for families who do accept vaccines. In Arkansas, the introduction of the philosophical exemption in 2003 resulted in the doubling of school immunization exemptions within two years, with 95% of exemptions attributed to non-medical reasons and geographic clustering of exemptions.⁸ The number is now five times higher than in 2002-2003, according to the Arkansas Department of Health (ADH). This does not include those who are in home school settings and are not required to vaccinate.

Studies support the role of the physician as an enhancing force in increasing rates of vaccination.⁹ The U.S. Task Force on Community Prevention Services, the CDC, the National Vaccine Advisory Committee and the AAP recommend that providers implement reminder/recall (RR) systems to improve childhood vaccination coverage rates. All methods of patient RR increase immunization rates by 5-20%, with telephone reminders being more effective than mailed reminders and multiple reminders being more effective than single reminders.¹⁰ However, less than 15-20% of private providers currently use RR.¹¹

Cited barriers to the adoption of RR messages include lack of time to learn

the system, lack of staff and funding, and incomplete records due to multiple vaccine providers. The latter is a problem readily addressed by immunization registries such as the Arkansas Immunization Network for Children (INC). Once a child is entered into the system at birth, registered users (including physician offices, schools and childcare facilities) can access his/her current age and vaccine status, including both recommended and overdue vaccination dates. Currently, there are few private practice providers using the INC to recall patients. The ADH recently successfully tested the recall system to send booster reminders to parents during the recent H1N1 outbreak.

Efforts to improve RR as part of vaccination practice in Arkansas are now underway. Arkansas Children's Hospital is beginning to use RR activities to target children between 1 and 2 years of age who have the highest rates of under-vaccination. The Arkansas Foundation for Medical Care, in collaboration with the ADH, has received funding from the CDC to study recall procedures that will increase vaccination rates for children under two years of age. The research design will compare office-based recall procedures to a centralized recall center and use multiple communication methods (e.g. telephone, cell phone, texts and Facebook).

As health information technology is utilized by more Arkansas physicians, incorporating INC data can lead to more vaccinated Arkansans. For the highest possible rates to occur, it is necessary for physicians, health care providers and the health insurance industry to adopt systematic initiatives that embrace preventive health within the social context of our patients.

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