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Immunization Practices in 2018: Challenges and Opportunities

THE DEVELOPMENT OF VACCINES has been invaluable to global welfare.¹ For example, childhood immunization prevents 2 million to 3 million deaths per year, according to the World Health Organization, and the Centers for Disease Control and Prevention (CDC) has reported that 16 diseases are under control or considered eradicated by vaccination.^{2,3} In the United States, among children within a recent 20-year birth cohort, vaccination will prevent an estimated 21 million hospitalizations and 732,000 deaths.³ From a financial burden perspective, this results in a net savings of \$295 billion in direct costs and 1.38 trillion in total societal costs, according to a 2014 CDC report.³

By improving the health of the global population and saving millions of lives in a cost-effective manner, vaccines represent an important milestone in the trajectory of medicine and healthcare more broadly.⁴ However, despite the unmistakably positive impact that vaccines have had on public health, several notable gaps in knowledge and barriers to access limit their potential in the healthcare spectrum. Rates of adult vaccination are far below recommended levels, while community pharmacies, despite offering convenient and potentially cost-effective means for vaccination, remain underused sources of vaccine administration. Overcoming these challenges requires health systems, payers, and regulatory groups to take significant steps to boost education and awareness efforts and increase access to vaccine coverage. This article examines current reported vaccine rates and potential population health strategies to improve overall coverage.

Vaccine Rates and Recommendations

The CDC and other institutions recommend that individuals receive vaccines throughout life to prevent the incidence, prevalence, morbidity, and mortality of vaccine-preventable diseases. Serious diseases that occur in adults that can be prevented by vaccines include varicella, diphtheria, influenza, hepatitis A, hepatitis B, HPV, measles, meningococcal disease, mumps, pneumococcal disease, rubella, shingles/zoster, tetanus, and pertussis.⁵

The CDC's Advisory Committee for Immunization Practices (ACIP) publishes recommendations for childhood and adult vaccinations (**Table**).⁶ Immunization recommendations are grouped according to age for adults 18 to 65 years old and adults 65 years old and above. The current recommendation lists vaccines against influenza; tetanus-diphtheria (Td); tetanus-diphtheria-acellular pertussis (Tdap); varicella; human papillomavirus (HPV); herpes zoster; measles, mumps, and rubella (MMR); and *Streptococcus pneumoniae*. Depending on the individual's specific indications, other vaccines may be advised. These include vaccines against hepatitis A and B, meningococcus, and Haemophilus influenzae type b.⁷

Despite recommendations that adults receive routine vaccinations throughout their lives, rates of adult vaccination in the United States are low. Every year, at least 45,000 adults in the United States die from vaccine-preventable diseases.⁸ Patients who go without routine or recommended vaccinations cost the United States health system approximately \$10 billion per year.⁸ Moreover, although the majority of people who die from vaccine-preventable infections had visited their healthcare provider in the year before their death,