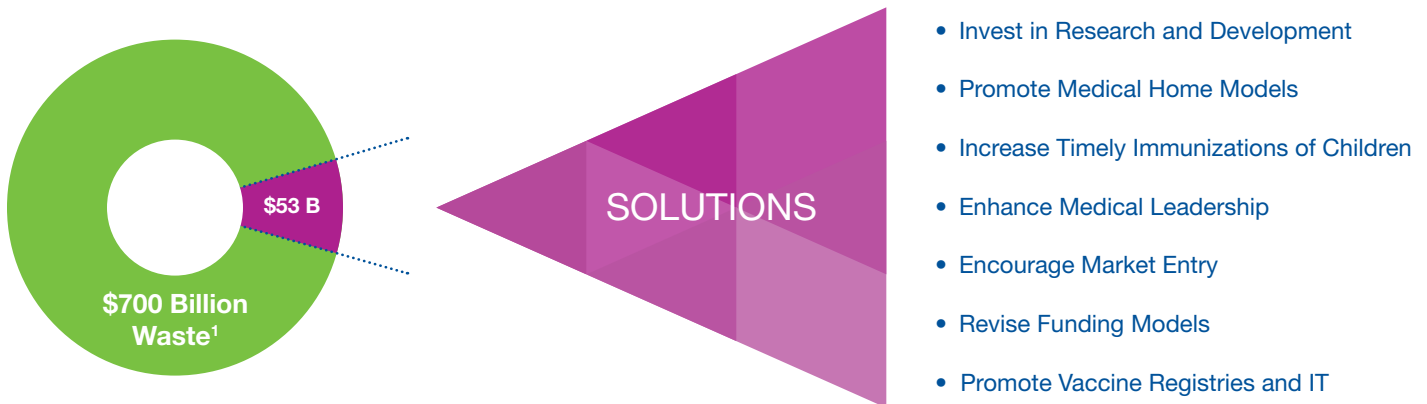


# Reducing Vaccine Underuse: A \$53 Billion Opportunity



Targeting the \$53 billion spent annually because of vaccine underuse requires building on proven practices and implementing policy actions that target the root causes of the problem.<sup>2</sup>

Vaccine underuse represents a significant source of wasteful health care spending. The causes of vaccine underuse are complex and systemic, resulting from shortages, exemptions from vaccination requirements, provider financing issues and health disparities.

Reducing vaccine underuse requires building on a coordinated set of proven practices in the field coupled with policy actions in both the public and private sectors.

## THE PROBLEM

### Scope of Vaccine Underuse

- One of every five children is not completely up to date on recommended immunizations.<sup>3</sup>
- More than one in 10 parents uses a vaccination schedule for their children other than the U.S. Recommended Immunization Schedule, including delaying some shots and refusing others.<sup>4</sup>
- Twenty-five percent of children lack full protection against vaccine-preventable communicable diseases.<sup>5</sup>
- Coverage levels for adolescents and adults are well below Healthy People 2010 targets.<sup>6</sup>
- Avoidable Deaths: For each birth cohort of children immunized, 14 million cases of vaccine-preventable diseases (VPD) are avoided and 33,000 VPD-related deaths are averted.<sup>7</sup>
- Influenza: 36,000 deaths annually in the elderly are due to the flu or its complications.<sup>8</sup>

### Costs of Vaccine Underuse

- Financial Cost: \$10 billion in annual direct health care costs.<sup>9</sup>
- Societal Cost: \$43 billion in annual indirect costs.<sup>10</sup>

### Causes of Vaccine Underuse

- Shortages: Interruptions in production and supply, higher-than-expected demand, and the time lag between the initial development and production contribute to vaccine shortages.<sup>11</sup>
- School Exemptions: Exemptions from school immunization requirements, often easily obtained, have risen over the last decade.<sup>12</sup>
- Provider Financial Barriers: The product-related costs of vaccine supply acquisition and maintenance and inadequate reimbursement for administering vaccines to children can be prohibitive.<sup>13</sup>
- New, Costly Vaccines: The number of new vaccines has increased in recent years, and newer vaccines are substantially more expensive than “traditional” vaccines.<sup>14</sup>
- Public Opinion: Increased concern regarding the supposed link between vaccines and autism, despite studies refuting the relationship, has led some to refuse vaccinations.<sup>15</sup>
- Income: Childhood poverty is a major risk factor for under-immunization.
- Race and Ethnicity: Immunization rates for Hispanics (47 percent) and Blacks (52 percent) are significantly lower than for Whites (65 percent).<sup>16</sup>
- Age: Adolescents and adults in general have lower vaccination rates than children.<sup>17</sup>

## SOLUTIONS

### Invest in Research and Development

- **Proven Practice:** Firms in the U.S. and abroad are experimenting with alternative production tech-

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Innovations in vaccine development, the promotion of medical home models of care, increasing the immunizations of children and encouraging entry into untapped markets can significantly increase the appropriate use of vaccines.

These interventions increase access to the appropriate use of vaccines and help to lower the costs of vaccine administration and distribution.

nologies to reduce the lead time and dependence on egg-based production of vaccines, which could help to decrease vaccine shortages.<sup>18</sup>

#### Promote Medical Home Models

- **Proven Practice:** Children in states with a higher number of medical home practices received childhood vaccinations at a higher rate than others.<sup>19</sup>
- **Proven Practice:** Children achieve higher immunization rates when clinicians and providers focus on ensuring that every child receives all recommended vaccines.<sup>20</sup>
- **Policy Action:** Promote the immunization of children covered by Medicaid via medical home approaches.

#### Increase Timely Immunization of Children

- **Proven Practice:** Undertaking community interventions that include education and outreach and increase the adoption of effective practices by health care providers.<sup>21,22</sup>
- **Policy Action:** Adopt public policies to ensure adequate vaccine supply and financing and to improve tracking systems and participation in immunization registries.<sup>23,24</sup>

#### Enhance Medical Leadership

- **Policy Action:** Garner the support of hospital executives and physician leaders to educate hospital staff, patients and their communities about the appropriate use of vaccines.
- **Policy Action:** Medical organizations should work in partnership to educate policymakers on the appropriate use of exemptions from mandatory immunizations.<sup>25</sup>

#### Encourage Market Entry

- **Policy Action:** Provide financial incentives to accelerate the development and approval of new vaccines, such as those to prevent Dengue, RSV, AIDS, SARS and others.<sup>26</sup>

#### Revise Funding Models

- **Policy Action:** Encourage evidence-based practices that increase the number of vaccines appropriately given by linking payment reimbursements to multiple, simultaneous vaccine administrations as well as timely immunizations.

#### Promote Vaccine Registries and IT

- **Policy Action:** Registries and information technologies have shown demonstrable successes in identifying vaccine underuse; further promotion of these approaches should help to improve the appropriate administration of vaccines.

- ▶ Learn more about ways to Bend the Curve in health care costs at: [www.nehi.net/bendthecurve](http://www.nehi.net/bendthecurve)

#### THE PROBLEM

1. NEHI. (2008). How Many More Studies Will It Take? A Collection of Evidence That Our Health Care System Can Do Better. Retrieved from [http://www.nehi.net/publications/30/how\\_many\\_more\\_studies\\_will\\_it\\_take](http://www.nehi.net/publications/30/how_many_more_studies_will_it_take). Last accessed October 2011.
2. NEHI. 2008.
3. The Commonwealth Fund. (2008). Immunization of Young Children. Retrieved from <http://www.commonwealthfund.org/Performance-Snapshots/Immunizations/Immunization-of-Young-Children.aspx>. Last accessed August 2011.
4. Dempsey, A.F., Schaffer, S., Singer, D., et al. (2011). Alternative vaccination schedule preferences among parents of young children. *Pediatrics*. 2011 Oct 3. [Epub ahead of print] PubMed PMID: 21969290.
5. The Commonwealth Fund Commission on a High Performance Health System. (2011). Why Not the Best? Results from the National Scorecard on U.S. Health System Performance.
6. Shen, A.K. (2009). The U.S. vaccine and immunization enterprise: Working to sustain and foster vaccine innovation. *Human Vaccines*, 5(10), 649-653.
7. American Academy of Pediatrics. (2007). Immunization Financing: Where is the Breaking Point? Task Force on Immunization. February 28, 2007. Retrieved from <http://www.aap.org/immunization/pediatricians/pdf/TaskForceWhitePaper.pdf>. Last accessed on August 23, 2011.
8. Centers for Disease Control and Prevention (CDC). (2007). Prevention and control of influenza: Recommendations of

the Advisory Committee on Immunization Practices (ACIP).

9. *MMWR Morb Mortal Wkly Rep*, 56(RR-6), 1-54.
10. American Academy of Pediatrics. 2007.
11. Zhou, F., Santoli, J., Messonnier, M.L., et al. (2005). Economic evaluation of the 7-vaccine routine childhood immunization schedule in the United States, 2001. *Archives of Pediatric and Adolescent Medicine*, 159(12), 1136-44.
12. Peter, G., des Vignes-Kendrick, M., Eickhoff, T.C., et al. (1999). Lessons learned from a review of the development of selected vaccines: National Vaccine Advisory Committee. *Pediatrics*, 104, 942-50.
13. The Council of State Governments' Healthy States Initiative. (2007). Exemptions from School Immunization Requirements. Retrieved from <http://www.healthystates.csg.org/NR/rdonlyres/7B29EF52-6408-4D67-904D-CFBE28AF35CA/0/ExemptionsLPB.pdf>. Last accessed on August 23, 2011.
14. American Academy of Pediatrics. 2007.
15. Hinman, A.R., Orenstein, W.A., Santoli, J.M., et al. (2006). Vaccine shortages: History, impact, and prospects for the future. *Annu Rev Public Health*, 27, 235-59.
16. CDC. (2010). Autism Spectrum Disorders, Research. Page last updated: December 29, 2010. Retrieved from <http://www.cdc.gov/ncbddd/autism/research.html>. Last accessed August 25, 2011.
17. Zimmerman, R.K., Nowalk, M.P., Raymund, M., et al. (2003). Tailored interventions to increase influenza vaccination in neighborhood health centers serving the disadvantaged. *Am J Public Health*, 93(10), 1699-705.
18. Zimmerman, Nowalk, Raymund, et al. 2003.

#### SOLUTIONS

18. Seiguer, E. (2005). Protecting the Nation's Health: Ensuring a Stable Supply of Influenza Vaccine. The Commonwealth Fund. July 2005.
19. Seipel, M.M. (2011). The impact of medical home on selected children's health outcome. *Soc Work Health Care*, 50(5), 347-59.
20. American Academy of Pediatrics. 2007.
21. Briss, P. A., Rodewald, L.E., Hinman, A.R., et al. (2000). Reviews of evidence regarding interventions to improve vaccination coverage in children, adolescents, and adults. *American Journal of Preventive Medicine*, 18 (1 Suppl), 97.
22. CDC. (1996). Recommendations of the Advisory Committee on Immunization Practices: Programmatic strategies to increase vaccination rates--assessment and feedback of provider-based vaccination coverage information. *MMWR Morb Mortal Wkly Rep*, 45(10), 219-20.
23. Institute of Medicine. (2003). Financing Vaccines in the 21st century: Assuring Access and Availability. Washington, D.C.: National Academy Press.
24. Wood, D., Saarlans, K.N., Inkelas, M., et al. (1999). Immunization registries in the United States: Implications for the practice of public health in a changing health care system. *Annual Review of Public Health*, 20, 231.
25. Zacharyczuk, C. Multifaceted approach advocated for vaccine-hesitant parents. Infectious Diseases in Children. Retrieved from <http://www.pediatricsupersite.com/view.aspx?rid=84600>. Last accessed October 11, 2011.
26. Hinman, Orenstein, Santoli, et al. 2006.