Expanding Convenient Access to the Flu Vaccine for Young Children

Up to **$0.9 billion** per Year at Full Vaccination (0.2% of Total Health Spending)

Published: September 2026

Author: Michael L. Anderson, University of California, Berkeley

Issue Summary: Pediatric influenza (flu) imposes a substantial and costly burden. Children under five have among the highest rates of flu- and pneumonia-related emergency department visits of any age group except the very elderly. Yet despite a longstanding recommendation that all children six months and older be vaccinated annually, more than 40% went unvaccinated in 2022–23—coverage that has plateaued well below the 70% national flu vaccination target. For young children, access is unusually narrow: survey data show roughly 95% of children ages 2–5 are vaccinated at a doctor's office or clinic and under 1% at a retail location such as a pharmacy. To the extent that a lack of convenient vaccination locations suppresses vaccination rates, it generates avoidable illness, outpatient and emergency department visits, and health care spending. The real-world benefits of increasing pediatric vaccination rates on health care use and spending are poorly quantified. Thus, policymakers lack rigorous evidence on the returns to making flu vaccination more common among young children.

Policy Recommendation: Federal and state lawmakers should continue to make it more convenient for young children to receive the pediatric flu vaccine by expanding the settings where they can be vaccinated. Specifically, where not currently permitted, lawmakers should authorize and encourage pharmacies to vaccinate young children.

Potential Savings: At full (100%) vaccination, the avoided outpatient, emergency department, and inpatient visits would be worth roughly $938 million per year for U.S. children ages 2–5 in 2021 dollars—about 0.02% of total U.S. health spending. This implies about $50 in avoided health care costs per vaccination—more than double the $21 cost of purchasing and administering a dose. This is a lower bound that excludes averted school absences, parental sick days, and transmission spillovers.

Related Literature and Evidence:

Anderson, Michael L., Carlos Dobkin, Devon Gorry, and Hung-Fu Tseng. 2026. "Real-World Effectiveness of the Influenza Vaccine in Young Children." *American Economic Journal: Applied Economics* 18 (2): 210–228.

Background

The flu causes substantial illness among young children. Children under five have among the highest rates of flu- and pneumonia-related ED visits of any age group except the very elderly, and childhood flu is estimated to account for up to 32 million missed workdays per year among parents.

Despite the Advisory Committee on Immunization Practice (ACIP)'s recommendation that all children six months and older be vaccinated annually, more than 40% go unvaccinated each season—coverage that has plateaued well below the 70% national flu vaccination target. Part of the reason is timing: because circulating strains change annually, the vaccine becomes widely available only shortly before flu season—typically September in the United States. This timing introduces a brief window during which vaccination is recommended.

For young children, access is unusually narrow. Unlike adults—who can be vaccinated at pharmacies, supermarkets, workplaces, and clinics—children ages 2–5 are vaccinated almost exclusively in a health care setting: survey data show roughly 95% are vaccinated at a doctor's office or clinic and under 1% at a retail location such as a pharmacy. This concentration imposes a high time cost on parents unless the vaccination is linked to another pediatric visit. Well-child visits are recommended at set ages (roughly annually for this group) and tend to occur around a child's birthday, so whether a child is vaccinated depends heavily on whether that birthday-timed visit falls after the vaccine becomes available.

To the extent that this convenience barrier suppresses vaccination, it generates avoidable illness, avoidable outpatient and emergency department (ED) visits, and avoidable health care spending. But the size of these avoidable costs has been hard to quantify. Existing randomized trials confirm the vaccine prevents laboratory-confirmed flu but have samples too small to estimate its effects on health care use.

Evidence Base

To estimate the effectiveness of the flu vaccine in reducing pediatric health care visits and costs, we draw on administrative records from a large Southern California HMO (Kaiser Permanente) for doctor's office visits and vaccinations, covering roughly 148,639 children ages 2–5 per year from 2008–2016. We use statewide California administrative data for ED visits and inpatient stays. We focus on children ages 2-5 because they incur higher per-capita flu-related health care costs than any group except seniors.

Our estimates come from a natural experiment. Because the seasonal vaccine becomes available only in early fall, children whose annual well-child visit happens to fall just after it arrives are far more likely to be vaccinated than otherwise-similar children born a few months earlier. Comparing these groups lets us isolate the vaccine's causal effect and avoid the selection bias that confounds studies that simply compare vaccinated with unvaccinated children. Three findings stand out:

The pediatric flu vaccine meaningfully reduces real-world health care use. Among outpatient visits, vaccination prevented essentially all flu-coded office visits and about three-quarters of flu- or influenza-like illness (ILI) visits. For every 100 children vaccinated, there are about 2.1 fewer flu-coded and 1.9 fewer flu-or-ILI visits than if they were unvaccinated. Its effect on all respiratory-illness visits was far larger—about 25 fewer per 100 children, or roughly a quarter to a third of them—five to ten times the reduction found in clinical trials, which count only lab-confirmed flu.

Among ED visits, we observed smaller but statistically significant reductions—about 0.13 fewer flu-related ED visits and 0.25 fewer flu-or-ILI ED visits per 100 children vaccinated.

We did not detect a reliable effect on hospitalizations. This is unsurprising, since hospitalizations in this age group are about 100 times rarer than office visits, leaving too few cases to measure an effect.

The flu burden is substantially undercounted. The gap between the respiratory-visit effect (about 25 per 100) and the flu-coded effect (about 2 per 100) implies that most flu-caused visits are never recorded as flu. Most respiratory visits do not lead to a flu test. Moreover, rapid tests miss many true cases, and symptom-based definitions like ILI exclude many flu-related coughs. As a result, standard estimates of flu's public-health burden are understated, and cost-benefit analyses that count only coded-flu visits undervalue the vaccine.

Convenience is a powerful, underused lever for increasing vaccinations. We find that having a well-child visit while the vaccine is available raises the probability of vaccination by 23.4 percentage points. The 23.4-percentage-point convenience effect is several times larger than the response to monetary incentives documented in other settings: field experiments imply that raising uptake by 10 points via cash requires roughly $33–$57 per person (Bronchetti et al. 2015, Campos-Mercade et al. 2021), so the convenience of a well-timed visit is equivalent to an incentive on the order of $77–$133. This timing-

driven gap in vaccination is larger than the gaps associated with a child's usual source of care, insurance type, income, or race and ethnicity. The only factor that predicts a bigger gap is having no insurance at all.

Policy Recommendation

Federal and state lawmakers should make it more convenient for young children to receive the pediatric flu vaccine by expanding where and when they can be vaccinated. Because uptake is driven far more by convenience than by price, policy should widen access points rather than subsidize demand.

Specifically, in states where not currently permitted, lawmakers should authorize and encourage pharmacies to vaccinate young children. Pharmacies are more numerous, offer longer hours, and do not require an appointment, making them a natural way to decouple vaccination from the pediatric visit. Much of that access currently rests on a temporary federal authority set to expire at the end of 2029 (see below). To keep it from lapsing, Congress or HHS should make pharmacists' pediatric vaccination authority permanent, and states should write it into their own scope-of-practice laws.

Potential Savings

We combine our per-visit utilization effects with published per-visit costs (Putri et al. 2018, inflated to 2021 dollars) of about $134 per pediatric flu outpatient visit, $1,011 per ED visit, and $8,596 per inpatient stay.

Applying the estimated reductions in respiratory-illness visits yields cost reductions of about $3,298 (outpatient), $234 (ED), and $1,624 (inpatient) per 100 vaccinated children—a combined $4,688 per 100 vaccinated children.

Scaling the per-child savings (about $47 per vaccinated child) across the roughly 20 million U.S. children ages 2–5 implies about $938 million in avoided medical costs per year if the entire cohort were vaccinated. About half of that ($469 million) is already realized at the current 50% vaccination rate, so raising coverage from 50% toward 100% would save on the order of an additional $469 million per year. The benefit is about $50 per vaccination, more than double the roughly $21 combined cost of purchasing (about $14/dose) and administering (about $7) the vaccine.

These savings would accrue to whoever pays for the averted care—primarily Medicaid/CHIP and employers or commercial insurers, and families through lower out-of-pocket spending. Our estimate is a lower bound: it excludes the value of avoided school absences and parental sick days and the spillover benefits of reduced transmission, all of which would raise the benefit-cost ratio.

To caveat, the headline figure relies on the larger respiratory-illness point estimates; the inpatient

component in particular is not statistically robust, so the true medical-cost savings could be smaller. Per-visit costs come from a single source, and the effectiveness estimates are drawn from one large California HMO plus statewide California data, which may limit national generalizability. The estimate also does not net out the administrative cost of expanding access points.

Existing Policy Proposals

Access to pharmacist-administered flu vaccination for young children is governed by an uneven state patchwork. All 50 states and DC permit pharmacists to administer flu vaccines, but the minimum age and levels of immunization authority vary widely (NASPA 2024). Beyond administration authority, some states may allow pharmacists to independently prescribe vaccines or delegate vaccine administration to a pharmacy technician. According to data from the National Alliance of State Pharmacy Associations and the American Pharmacists Association dated August 2024, 15 states allow pharmacists to administer the flu vaccine to individuals of all ages (NASPA 2024). Two states allow administration for individuals six months and older, one allows it for ages 2 and older, and 13 allow it for ages three years and older. The remaining states set higher minimum ages.

A temporary federal authority currently overrides this patchwork. Under the Public Readiness and Emergency Preparedness (PREP) Act, the current declaration lets pharmacists nationwide administer seasonal flu (and COVID-19) vaccines to children ages 3–18—preempting stricter state limits—through December 31, 2029 (its 12th Amendment, effective January 1, 2025). If this authority lapses, the state patchwork will govern access again.

References

Anderson, Michael L., Carlos Dobkin, Devon Gorry, and Hung-Fu Tseng. 2026. "Real-World Effectiveness of the Influenza Vaccine in Young Children." *American Economic Journal: Applied Economics* 18 (2): 210–228.

Bronchetti, Erin Todd, David B. Huffman, and Ellen Magenheim. 2015. "Attention, Intentions, and Follow-Through in Preventive Health Behavior: Field Experimental Evidence on Flu Vaccination." *Journal of Economic Behavior and Organization* 116: 270–291.

Campos-Mercade, Pol, Armando N. Meier, Florian H. Schneider, Stephan Meier, Devin Pope, and Erik Wengström. 2021. "Monetary Incentives Increase COVID-19 Vaccinations." *Science* 374 (6569): 879–882.

National Alliance of State Pharmacy Associations (NASPA). 2024. "Influenza Vaccine Administration Authority by State." In "Pharmacist and Pharmacy Technician Vaccination Authority," in collaboration with the American Pharmacists Association. Updated August 2024. https://naspa.us/resource/2024-pharmacist-immunization-authority/.

Putri, Wayan C. W. S., David J. Muscatello, Melissa S. Stockwell, and Anthony T. Newall. 2018. "Economic Burden of Seasonal Influenza in the United States." *Vaccine* 36 (27): 3960–3966.