Common Health Coalition

# More Illness, Greater Cost Spotlight Brief: *Childhood Immunizations*

## Executive Summary

Building upon the Common Health Coalition's report *More Illness, Greater Cost: The consequences of public health cuts for the health care system*, this Spotlight Brief demonstrates how declines in childhood vaccination will carry substantial human and economic consequences, using measles as a case study. This modeling analysis, conducted by the Yale School of Public Health, finds that a **sustained 1% annual decline** in measles, mumps, and rubella (MMR) vaccine coverage could lead to more than **17,000 measles cases**, **4,000 hospitalizations**, and **36 preventable deaths** each year, while adding billions in avoidable costs across the United States health system and economy by 2030.

Over the next five years, declining measles vaccination rates could cost **$1.5 billion annually** and add approximately **$7.8 billion in cumulative costs** (a range of $5.6 billion to $11.6 billion). Outbreak response and direct medical costs are inversely related: when public health-led outbreak response is well-resourced and robust, the response can be more comprehensive and can contain outbreaks early, reducing the number of people who contract measles, thus decreasing the downstream costs to health care.

While most children in the United States remain protected by expert-recommended routine vaccines, the convergence of multiple federal policy changes in 2025 and 2026 is likely to **accelerate** current declines in national childhood vaccination coverage.

### $1.5 Billion Added in Annual Costs

**$41.1M**
in Direct Medical Costs

**$26.5M** borne by **private insurers**, **$5.4M** borne by **public insurance** programs, and **$9.2M** borne by **uninsured individuals**. These costs do not include health care operational costs, such as isolation protocols and dedicated beds, staff exclusions, staff testing, hospital exposure protocols, etc.

**$947.0M**
in Public Health Outbreak Response Costs

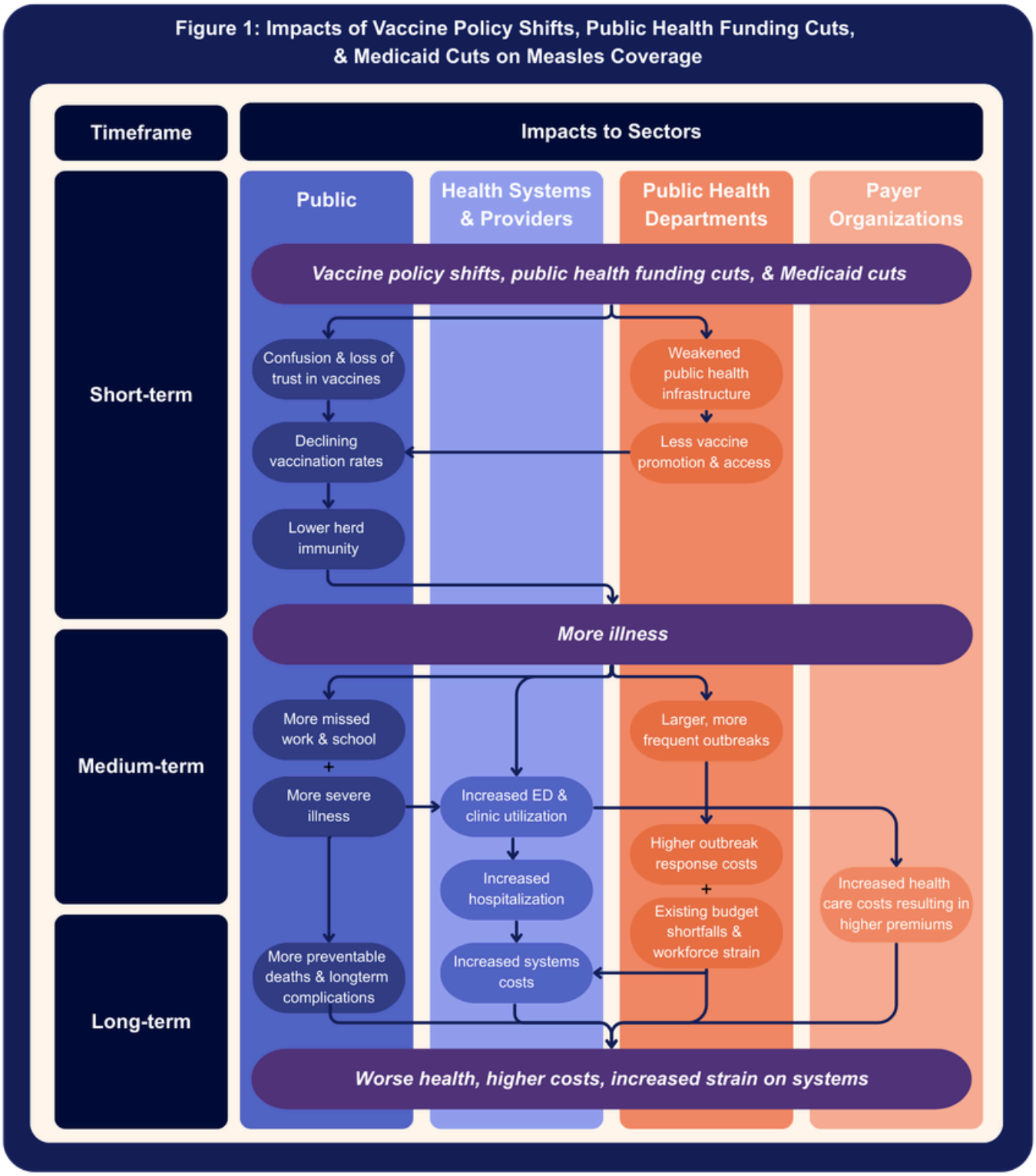
For public health, these costs manifest through **surveillance and case investigation, contact tracing, community outreach, risk communication, and vaccination clinics**, among other impacts. As modeled, these costs do not include health care costs related to outbreak operations. **If public health is unable to respond at the level required due to budget constraints and staffing limitations, the direct and indirect medical costs, and costs due to productivity loss and missed work may grow substantially as measles cases increase.**

**$510.4M**
in Productivity & Missed Work Costs

Economic costs associated with **lost productivity** in the workforce, for example, **missed work** due to having to care for sick children.

The potential for cascading impacts from declining vaccine uptake (see fig. 1) is concerning but not inevitable; **coordinated action can prevent this projected suffering, disruption, and resulting costs**. Cross-sector collaboration – such as local and regional immunization coalitions, as well as health system-public health partnerships – will be essential.

**Figure 1: Impacts of Vaccine Policy Shifts, Public Health Funding Cuts, & Medicaid Cuts on Measles Coverage**

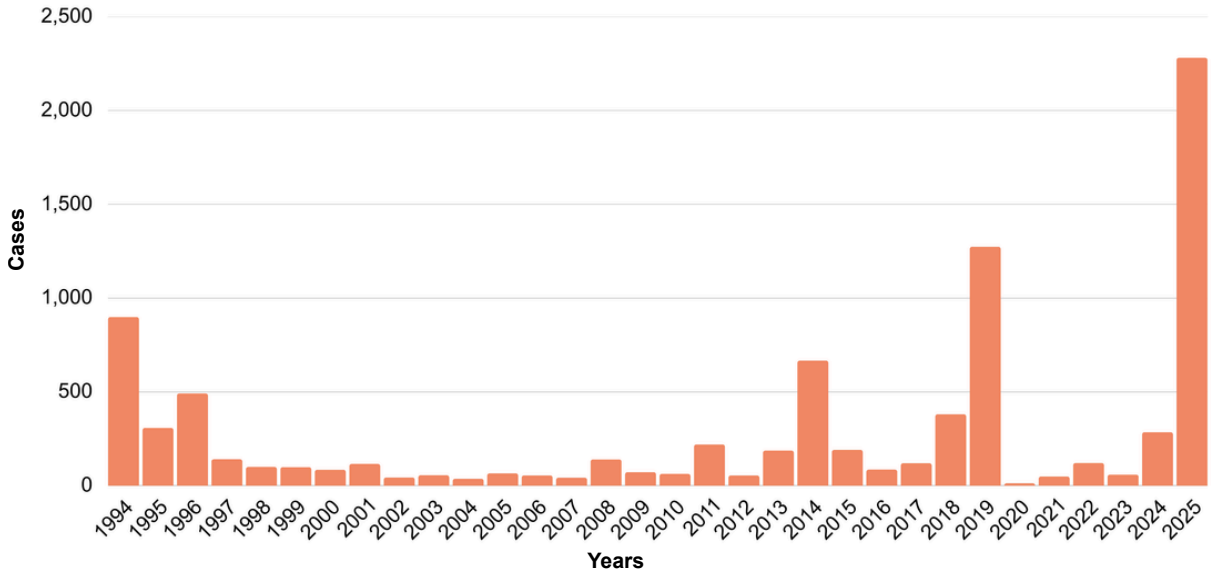



## Policy Context

Childhood immunization, one of the most successful public health achievements of the past half-century, is at a critical inflection point. For decades, routine childhood immunizations have protected communities against more than a dozen serious diseases including measles, mumps, rubella. A number of federal programs – most notably the Vaccines for Children (VFC) program, Section 317 immunization grants, Medicaid, and Affordable Care Act (ACA) – have provided states and localities with the resources needed to make childhood vaccines widely accessible at no cost to families. The systems have worked with elimination or near elimination of

measles, polio, diphtheria, and other serious diseases through vaccine coverage rates of over 90% for young children (2024 MMWR report). Routine childhood vaccination has prevented an estimated 508 million illnesses and 1.13 million deaths among children in the U.S. since 1994, (2024 MMWR report) and averted roughly $13.5 billion in direct medical costs per birth cohort (Zhou et al., 2014).

**Figure 2: Annual Measles Cases Across the United States 1994 - 2025**




*Source: the U.S. Centers of Disease Control and Prevention*

Today, this historic progress in protecting children from deadly and debilitating diseases is at risk. Rising vaccine hesitancy and policy-driven weakening of the childhood immunization infrastructure are contributing to declining vaccination rates, with recent measles and pertussis outbreaks signaling early consequences.

## *Weakened Public Health Infrastructure*

### Federal vaccine policy shifts reduce vaccine access and confidence

Most recently, changes to the national child immunization schedule on January 5, 2026 shifted six previously routine vaccines – RSV, rotavirus, COVID-19, influenza, Hepatitis A, Hepatitis B, and meningococcal – to high-risk-only or shared clinical decision-making recommendations, contrary to existing evidence.

Because the schedule functions as a core organizing framework for clinical practice, payer policy, public health programming, and manufacturer planning, changes to routine recommendations have implications that extend beyond individual clinical encounters.

Though MMR vaccine recommendations currently remain strong and unchanged, schedule changes that are not based on the latest scientific evidence can introduce confusion, uncertainty, and loss of trust from families and their providers, and as a result drive reduced access to evidence-based vaccines, including MMR.

Over time, reduced consistency in vaccine delivery can contribute to lower and more uneven uptake, with downstream implications for disease spread and health system utilization. The extent of these effects depends on disease characteristics, local implementation decisions, and existing care infrastructure, but they are most likely to surface first in communities with fewer public health and clinical resources to absorb the impact.

As states and localities consider the impact of these policies on school and daycare requirements, and pediatric offices reassess which vaccines to stock, these downstream effects impede access for families and further erode confidence in vaccination as a routine, proactive measure to protect children.

While insurance coverage for routine vaccinations has not changed at this time, any future introduction of cost-sharing would substantially undermine families' access to routine vaccination and thus increase illness and downstream costs for payers. Changes to coverage policies are associated with lower vaccination uptake, whereas when cost-sharing is reduced or eliminated, immunization rates among children and adolescents increase (Johnson et al., 2015).

**Reductions in public health federal funding weaken local vaccination programs and the federal workforce needed to support them**

As summarized in *More Illness, Greater Cost*, potential disinvestment in public health would undermine basic infrastructure for vaccination, and in turn impact the health care system. Specifically, these impacts include potential and actualized cuts to:

- **Federal support for vaccine infrastructure**. Critical programs to prevent and control outbreaks, such as the CDC's Section 317 Immunization Program and the Prevention and Public Health Fund (PPHF), have recently faced reductions in funding and staffing. The 317 program is the core grant and vaccine-purchase program that underpins state and local immunization infrastructure and IIS modernization – and the PPHF supplies nearly all Immunization Program dollars and 100% of Epidemiology and Laboratory Capacity (ELC) grants that support state lab and surveillance capacity.

- **CDC workforce, training pipelines, and contracts**. Recent HHS and CDC layoffs and reduction-in force plans, and the disruptions caused by reversals of some of these decisions, undermine the technical assistance and surge personnel for on-the-ground outbreak and vaccination responses. These workforce gaps were evident in the 2025 Texas measles outbreak response.

- **Community Health Worker (CHW) capacity**. Cuts to CHW federal funding streams leave fewer CHWs for vaccine outreach, education, and navigation at the community level before, during, and after outbreaks.

**Budget cuts to Medicaid and loss of Medicaid coverage compound public health policy and funding threats**

Medicaid covers approximately half of the children in the US. Thus, federal proposals to reduce Medicaid spending by $57-$114 billion over the next decade have significant downstream effects on childhood vaccination rates (Children's Hospital Association/Avalere Health, 2025).

Providers must purchase vaccines upfront, maintain cold-chain storage, and dedicate staff time to counseling, administration, and documentation. When Medicaid reimbursement is reduced or becomes less predictable, these costs are often not fully covered. Over time, this creates financial pressure – particularly for independent practices, community health centers, and rural providers – that may lead providers to limit the vaccines they stock, refer patients elsewhere, or stop offering vaccines altogether.

Medicaid payment changes also intersect with quality measurement. Childhood immunization measures are widely used in Medicaid managed care and value-based payment programs. If financial pressures make consistent vaccine delivery harder, performance on these measures may decline, affecting payments and plan ratings and further reinforcing provider disincentives.

## Modeling The Impacts

In partnership with the Common Health Coalition, Yale School of Public Health researchers Wells et al. modeled county-level MMR vaccination coverage to assess how continued or worsening declines in vaccine uptake could translate into poorer health outcomes for children and communities, as well as downstream costs to the U.S. health system. The analysis centers on projected measles cases and costs in the model baseline year of 2025, a historic year for measles resurgence, with the United States recording its highest number of measles cases in 30 years. The model estimates that measles cost the U.S. health system over **$166.1 million** in 2025 alone, or **$76,155 per case**.

### *About the Model*

The model contains ranges for each projection, for example, the range for the $1.5 billion in annual costs is $0.9 billion to $2.9 billion. Projections used in this report are modes of the modeled ranges. Full methodology, ranges for modeled projections, and underlying assumptions are described in the accompanying manuscript.

While the model conservatively estimates approximately $41 million in annual direct medical costs under an accelerated decline in MMR coverage, this figure likely understates the true financial burden on the health care system. This estimated direct medical cost carries wide uncertainty bounds which are driven by the substantial differences in cost by payer type, state, and patient age, meaning higher national costs are plausible. The analysis also focuses on acute infection and excludes rare but severe long-term sequelae. Encephalitis occurs in up to 1 in 1,000 measles cases and can result in permanent neurologic disability, with lifetime societal costs exceeding $2.5 million (2025 USD) per case. In addition, rare complications such as subacute sclerosing panencephalitis (SSPE) may not present until years after the initial infection, creating delayed but catastrophic health and financial consequences that are not captured in near-term projections.

The model does not for account operational costs associated with measles cases and exposures within clinical settings – such as infection control measures, exposure investigations, post-exposure prophylaxis for staff, hospital overcrowding during outbreaks, and workflow disruptions – which are discussed further in this brief. Further, while costs were stratified by private, public, and uninsured coverage, the fiscal implications for Medicaid and the Children's Health Insurance Program (CHIP), which insure a substantial share of U.S. children, are not fully delineated. Nor does the model capture the increased incidence of rare long-term complications that would likely accompany sustained declines in vaccination coverage. Taken together, these exclusions suggest that the reported direct medical expenditures are conservative and that the true downstream financial exposure to payers, providers, public programs, and families would likely be significantly higher.

And while this report focuses exclusively on measles as a case study, the impacts of reduced childhood immunization uptake will have consequences across vaccine-preventable diseases, including pertussis, rotavirus, pneumococcal, and other costly infections.

### *What to Expect by 2030*

Looking ahead over the next five years, the model assesses the compounded impacts of policies that weaken childhood vaccine infrastructure as a consistent decline in coverage of 1% annually nationwide (accounting for variation at the county-level), a highly plausible scenario, if not conservative given current policy and coverage trajectory. National MMR coverage declined by roughly 2.5-3 percentage points total over 2019-20 to 2024-25, i.e. about 0.3-0.4 points per year on average nationally prior to the implementation of these policy changes, and recent polling indicates further erosion in vaccine confidence.

A 5% reduction in MMR vaccine coverage over the next five years is highly plausible given current trends, as vaccine coverage has already fallen by roughly 2.5-3 percentage points since 2020 prior to recent policy changes. This scenario would place coverage at roughly **87.5%** nationally, 7.5 percentage points below the 95% threshold widely recognized as required to sustain herd immunity due to high transmissibility. While coverage will continue to vary by more localized geography, the loss of herd immunity at a national level means more people, particularly children, are likely to get infected by this highly infectious virus.

An annual decrease of 1% could result in more than 17,000 cases, 4,085 hospitalizations, and 36 deaths annually by 2030 – a **seven-fold increase in illness**. Total annual national expenditure could increase **six-fold**, reaching **$1.5 billion**, **$988.1 million** of which fall to health and public health systems. The analysis assumes uneven MMR declines across counties, with some experiencing steeper year-to-year losses than others.[1]

[1]On average, counties experienced about a three-fold increase in cases, hospitalizations, deaths, and costs, however large standard deviations (8-10) indicate considerable heterogeneity across counties.

These cost estimates reflect the local outbreak response measures used in recent comparable outbreaks. If public health funding declines, actual spending may fall short of these levels – not because outbreaks become less costly, but because localities lack the resources to carry out a robust response. That shortfall would allow more transmission, driving higher medical and societal costs downstream.

### *Who Pays*

Health system costs include direct medical care for outpatient visits and hospitalizations (projected at **$41.1 million** annually by 2030) as well as public health outbreak response activities – such as **contact tracing**, **testing**, and **post-exposure vaccination** (projected at **$947.0 million** annually by 2030). Outbreak response costs are typically borne by public health agencies that lead these activities – **however, funding levels and decisions made by state and local leaders determine the scale at which public health agencies can respond**.

Direct medical costs are projected to fall heavily on payers: private insurers would bear approximately **$26.5 million** and public insurers **$5.4 million** in annual costs by 2030, with uninsured individuals accounting for an additional **$9.2 million**. Not included in the model, but likely to impact individual health care providers, are operational costs related to measles cases and exposures within health care settings.

**Figure 3: Modeled Costs & Impacts**

| | 2025 Baseline Estimates | Model: 1% Annual Decline in MMR Coverage (2030) |
|---|---|---|
| **Measles cases annual total** | 2,181 | 17,232 |
| Additional over baseline | — | 15,051 |
| **Hospitalizations annual total** | 554 | 4,085 |
| Additional over baseline | — | 3,531 |
| **Deaths annual total** | 5 | 36 |
| Additional over baseline | — | 31 |
| **Total national expenditure (annual)** | **$244.2 million** | **$1.5 billion** |
| Additional over baseline | — | $1.3 billion |
| Cumulative (2026-2030) | N/A | $7.8 billion |
| **Health system costs (annual)** | **$166.1 million** | **$988.1 million** |
| Additional over baseline | — | $822.0 million |
| Outbreak response costs | $158.9 million | $947.0 million |
| Direct health care costs | $7.2 million | $41.1 million |
| *Private insurance* | $4.6 million | $26.5 million |
| *Public insurance* | $1.0 million | $5.4 million |
| *Uninsured individuals* | $1.5 million | $9.2 million |
| **Productivity loss (annual)** | **$78.1 million** | **$510.4 million** |

### *Weakened Public Health Outbreak Response Leads to More Cases, & Higher Health Care Costs*

These findings show that sustained drops in childhood vaccination can generate substantial and avoidable health consequences and economic costs. Outbreak response and direct medical costs are inversely related: when public health-led outbreak response is well-resourced and robust, the response can be more comprehensive and can prevent and contain outbreaks early, reducing the number of people who contract measles, thus decreasing the downstream costs to health care. When public health entities lack the resources

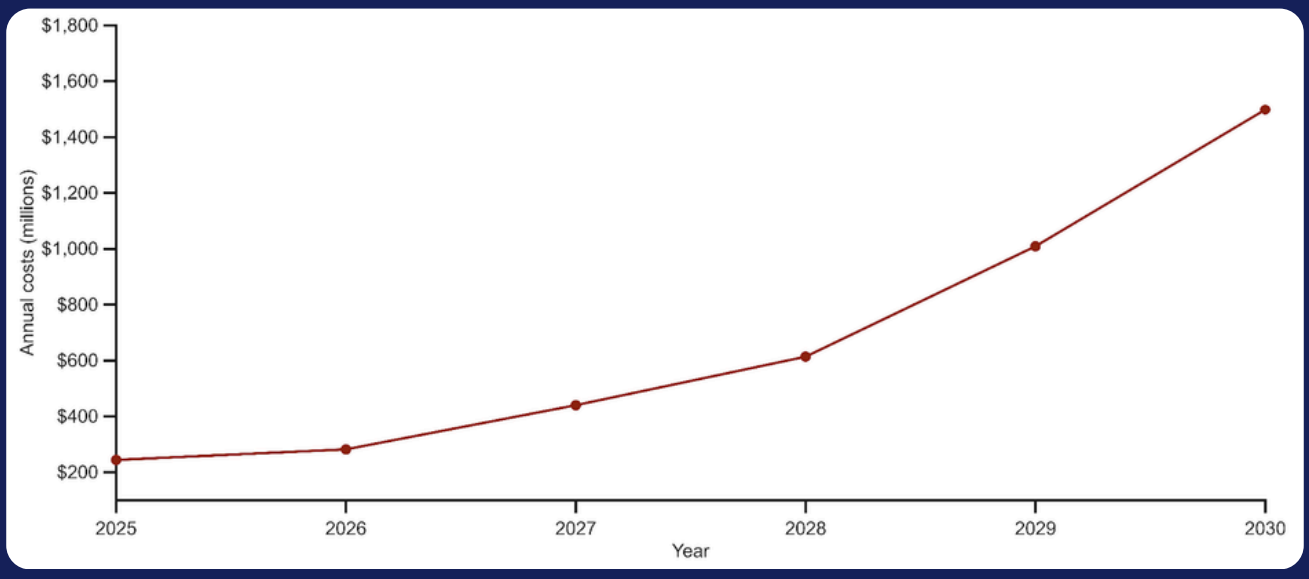
required to respond at scale, cases may rise beyond levels predicted by this model – driving even higher direct medical costs, operational strain, and productivity losses. A summary of the model methodology appears at the end of this brief, and a pre-publication version of the corresponding manuscript is available here.

### *Beyond Direct Medical Costs: Operational Burden and Disruption*

Rising rates of vaccine-preventable disease can cause widespread disruption for health care institutions and employers.

Surges in infectious diseases strain bed capacity and clinical throughput in pediatric and intensive care units, require additional resources for isolation and staff safety measures, cause postponement of elective surgeries and overwhelm emergency departments. When infectious diseases like measles appear in outpatient settings, staff face workflow disruptions due to increased screening protocols, exposure notifications, and fluxes in patient demand for services. For example, pediatricians have seen families scramble to vaccinate their children amid policy uncertainty, with some parents seeking appointments to vaccinate infants even before they are eligible, driven by uncertainty and confusion about insurance coverage and vaccine supply disruptions. Conversely, some parents may postpone child well visits for fear of exposure in areas experiencing outbreaks.

**Figure 4: Annual Costs Associated with Measles Cases Across the United States**




**Annual measles-attributable costs (in millions USD) in the US under declining MMR vaccination coverage**. Estimated annual costs associated with measles cases, assuming 2025 importation[2] patterns, under an absolute annual reduction of 1% in MMR vaccination coverage among children aged 0–6 years.

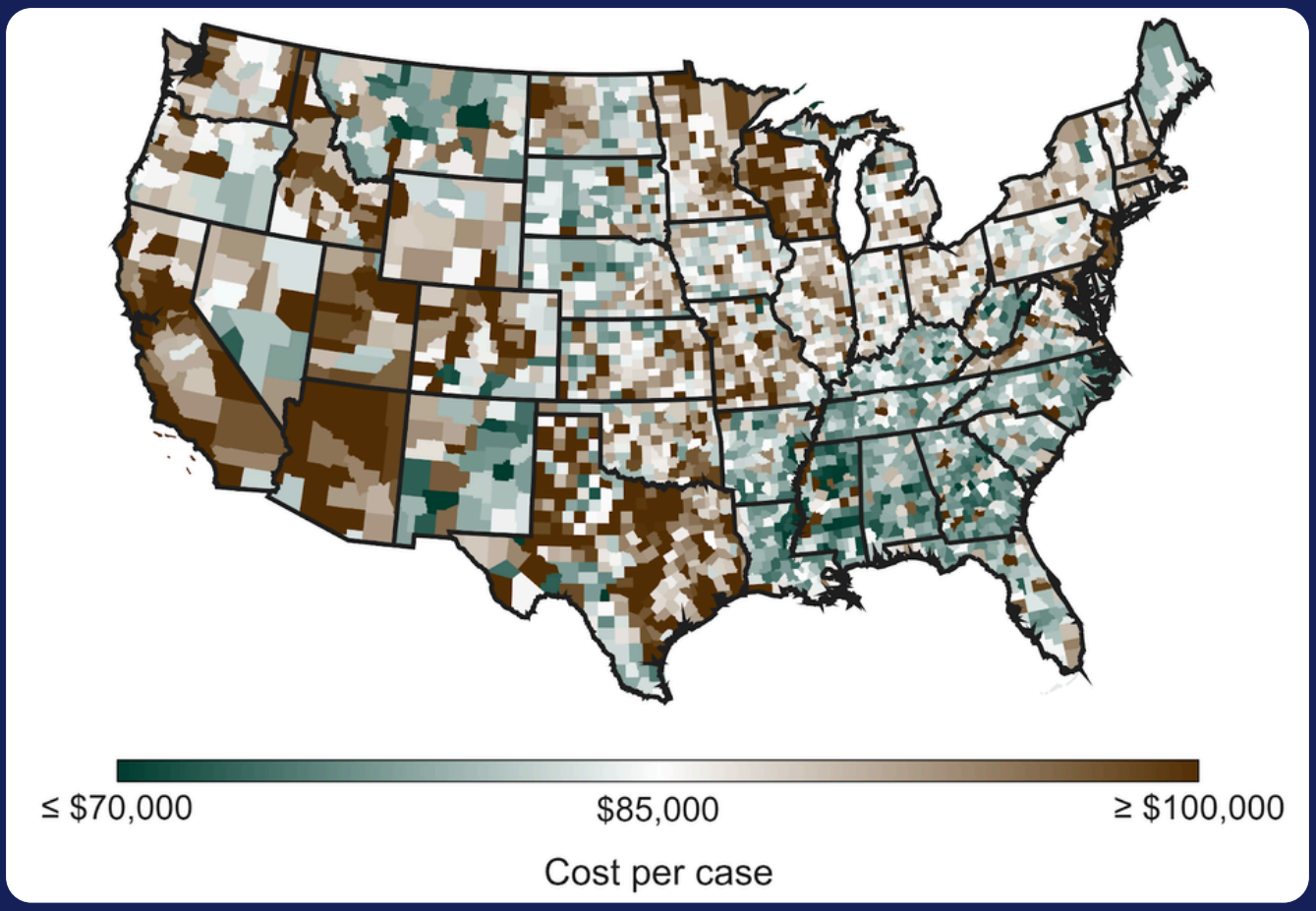
On top of additional clinical load, clinicians, nurses, infection prevention teams, and support staff across in-patient and outpatient settings will absorb time-intensive activities such as exposure management and case reporting to public health departments. Even in jurisdictions with electronic case reporting, substantial manual

[2]Importation events refer to the introduction of measles cases into a community from areas outside that population where measles transmission is ongoing.

follow-up is routinely required to reconcile data, clarify case details, and coordinate with public health authorities. What is manageable at low case volumes can quickly become overwhelming during outbreaks, exceeding the capacity of hospital infection preventionists alone and potentially requiring staff redeployments.

For employers, particularly self-insured employers, these dynamics extend beyond hospital walls. Outbreaks in infectious disease, like measles, generate substantial workforce and business disruption. Employees may miss work due to illness, caregiving responsibilities for children home from school for illness or weeks-long quarantine requirements, which in turn drives absenteeism, productivity losses, and in some cases overtime or backfill costs. In sectors reliant on on-site staffing, even modest increases in infectious disease burden can disrupt operations and elevate labor costs.

**Figure 5: Cost per Measles Case by U.S. County**




**County-level estimates of cost per measles case**. Median estimated cost per case by US county, assuming a fixed outbreak size of 50 cases in the county. Cost per case, which varies county by county due to variation in hospitalization costs and local wages, was found to be elevated in regions with lower immunity levels.

For self-insured employers, rising measles cases translate into additional claims and higher medical costs – particularly for inpatient admissions, intensive care, and pediatric services – affecting overall claims experience, risk pools, and renewal rates. These costs are borne directly for self-insured employers, increasing per-member spending and exposure to high-cost claims.

Together, these dynamics underscore how declining vaccination coverage creates cascading stress across health care and workforce operations, beyond direct medical costs for hospitals and payers.

## Turning to Solutions

Health leaders can anticipate and mitigate these impacts by safeguarding policies that protect vaccine access. Cross-sector collaboration will be essential. The following strategies mobilize lessons learned from past and current efforts to ensure that patients and communities have what they need.

### *All Health Leaders can:*

**Establish or grow regional, state, or local immunization coalitions** to share policy approaches and resources.

- *Examples*: Northeast Public Health Collaborative, Infectious Disease Prevention Network

**Formalize health system-public health partnerships**, including for outbreak-response readiness to enable coordinated surveillance, rapid deployment of resources, and surge capacity mechanisms.

- *Examples:* Northwest Healthcare Response Network, expansion of Regional Action Networks

**Explore creative shared funding between health care, public health, and philanthropy**, such as public health bonds and pooled purchasing models to stabilize vaccine infrastructure through fluctuations in federal funding and policy change.

- *Examples*: New York City Department of Health's partnership with seven health insurance plans to create their Vaccine Outreach and Counseling Program

### *Public Health & Health Care Organizations can:*

**Expand vaccine access points,** including through maintaining/increasing provider participation in the VFC program, on-site community vaccination (e.g. schools, workplaces, community centers) and emergency department-based vaccine access.

- Examples: National Association of County and City Health Officials (NACCHO)' School-Located Vaccination Clinic model; Chicago Department of Public Health's community vaccination events

**Build provider and public confidence in vaccines** through trusted messengers and clear, evidence-based communication.

- Examples: Campaigns from the AAP, Trusted Messenger Program, or Children's Hospital Association

**Embed community health workers (CHWs) in vaccine access strategies** and explore interprofessional models of collaboration among CHWs, pediatric practices, and pharmacies, particularly those that help build trust and vaccine confidence in communities.

- Examples: Missouri's Vaccine Gap Closure program, the Public Health Institute's Together Toward Health Initiative

**Ensure continuity of access to data,** and the public sharing of that de-identified, population-level data, on vaccine uptake at the state and local level via initiatives that share data across sectors and with the public.

- Examples: PopHIVE, Health Compass Milwaukee, Minnesota EHR Consortium

**Support and expand mechanisms for bidirectional, accurate public information sharing**, utilizing social listening programs to drive creative partnerships with new media partners, scientific communicators, and community leaders and members.

- Examples: Project Stethoscope by Your Local Epidemiologist, The Evidence Collective, Michigan Health Communications Initiative

**Forecast and mitigate interruptions to vaccine supply**.

- Examples: work with manufacturers to forecast and prevent supply issues; release operational guidance for VFC providers on requirements, stocking, and documentation.

### *Payers can:*

**Continue private insurance coverage** of childhood immunizations without cost-sharing, as affirmed by AHIP in September 2025.

**Affirm Medicaid and private coverage** of childhood immunizations by payers to vaccine providers and the public.

**Partner on prevention efforts** – via creative programming and shared financing – with state and local health leaders.

### *Policymakers can:*

**Maintain school-entry immunization requirements** and direct state agencies to clearly communicate the importance of vaccination.

- Example: Pennsylvania's Executive Order 2025-02 reaffirms that existing school and child care vaccination requirements remain in effect

**Establish state-level policies** to link authority, liability protections, and payment to evidence-based vaccine recommendations, such as those published by professional medical societies through public health, executive or legislative action.

- *Example:* New Mexico's Board of Pharmacy vaccination protocol requires pharmacists to follow evidence-based vaccine recommendations from ACIP, leading professional medical societies (e.g., AAP, AAFP, ACP, and ACOG), and the New Mexico Department of Health.

### *Employers can:*

**Maintain comprehensive vaccine coverage** in employer-sponsored plans. For self-insured employers, this includes affirming coverage without cost-sharing and avoiding administrative barriers that delay vaccination.

**Facilitate access to vaccination,** including for dependents. Partner with health plans, pharmacies, or community vaccinators to promote convenient vaccination sites and offer paid time off for vaccination appointments for both employees and their children.

**Support workplace policies that encourage staying home when sick**. Ensure leave policies allow employees to take time off when they are ill or when a household member shows symptoms, reducing workplace exposure and limiting further community transmission.

## Conclusion

Childhood immunization is as essential to community health as it is to health system stability. This analysis shows that even a conservative, sustained decline in vaccination coverage will produce tangible human and economic consequences, thousands of preventable illnesses, and billions in avoidable costs. Those costs will be borne by public health agencies, hospitals, insurers, employers, and families alike.

Continued erosion of vaccine access is not a clinical inevitability and it is preventable through shared action. Acting now to stabilize and strengthen immunization infrastructure is far less costly than paying for preventable outbreaks later.

## Model Methodology & Limitations

The report's estimates are derived from an integrated statistical and transmission modeling framework that links county-level MMR vaccination coverage, population immunity, measles importation and spread, and associated health and economic outcomes.

County-level coverage was inferred using an insurance-stratified regression model informed by historical school-entry vaccination data (2017-2018 through 2023-2024), demographic and policy covariates, and calibrated to observed 2023-2024 coverage. These estimates were translated into age-structured immunity profiles and used to model measles importation, spatial spread between counties, and within-county transmission dynamics, which in turn generated projections of cases, hospitalizations, and costs.

This study has limitations, including simulated importation patterns that may not fully reflect the complexity of global measles transmission and the use of uniform public health response costs across counties, which could affect absolute cost estimates. It also does not account for broader social disruptions or healthcare system strain, meaning the true impact of large outbreaks may be even greater.

Full methodology, ranges for modeled projections, and underlying assumptions are described in the accompanying manuscript.

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