



**Vaccines and Global Health: The Week in Review**  
**27 April 2019**  
**Center for Vaccine Ethics & Policy (CVEP)**

*This weekly digest targets news, events, announcements, articles and research in the vaccine and global health ethics and policy space and is aggregated from key governmental, NGO, international organization and industry sources, key peer-reviewed journals, and other media channels. This summary proceeds from the broad base of themes and issues monitored by the Center for Vaccine Ethics & Policy in its work: it is not intended to be exhaustive in its coverage.*

*Vaccines and Global Health: The Week in Review is also **posted in pdf form** and as a set of blog posts at <https://centerforvaccineethicsandpolicy.net>. This blog allows full-text searching of over 8,000 entries.*

*Comments and suggestions should be directed to*

*David R. Curry, MS*

*Editor and*

*Executive Director*

*Center for Vaccine Ethics & Policy*

*[david.r.curry@centerforvaccineethicsandpolicy.org](mailto:david.r.curry@centerforvaccineethicsandpolicy.org)*

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## ***Milestones :: Perspectives :: Research***

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### **WHO: [Vaccines and the power to protect](#)**

25 April 2019

This week is World Immunization Week, which runs from April 24th to 30th. The campaign, celebrated worldwide, aims to champion the power of vaccines to protect our health, and prevent outbreaks.

This year's #VaccinesWork campaign comes at a critical time and will involve all of us to ensure every person is vaccinated at the right time, and that we remain protected together.

:: [Read the spotlight on vaccines](#)

:: [More on the World Immunization Week campaign](#)

:: [Watch the Facebook chat with Dr O'Brien on why immunization matters](#)

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## **SAGE - April 2019**

### **[Highlights from the Meeting of the Strategic Advisory Group of Experts \(SAGE\) on Immunization](#)**

2-4 April 2019

*(Full report will be published in the Weekly Epidemiological Record on 31 May 2019)*

#### **Report from Director, IVB and Regional Updates**

:: The Director of the WHO Department of Immunization, Vaccines and Biologicals provided a preview of what the vision for the next decade of work in the vaccine and immunization field will entail and stressed four key aspects: (1) over the last many decades, the world has been on a trajectory of great advances in the development and health of communities; (2) however, the world in 2019 is increasingly uncertain and volatile with the risk of backsliding; (3) the vaccine and immunization agenda is being re-shaped with a central view toward equity, security and prosperity for all; and (4) vaccines and immunization are central to achieving the Sustainable Development Goals (SDGs), with at least 14 of 17 linked to achieving vaccine goals.

:: The next decade is an opportunity for the global community to address key issues and harness new solutions in vaccines and immunization while at the same time contributing to the broader global health agendas including not only the SDGs but also WHO's "triple billion" goal as part of its 13<sup>th</sup> Programme of Work, Primary Health Care, and Universal Health Coverage.

:: Regional Offices highlighted major achievements and challenges. Of concern are the multiple outbreaks of measles and other vaccine-preventable diseases as these reflect weakened immunization systems. Fragile and conflict-ridden countries face challenges in sustaining immunization, as do many lower-middle-income countries in relation to financing. Several regions reported on efforts to increase life-course vaccination and on strengthening country decision making.

#### **Report from Gavi, the Vaccine Alliance**

:: Approvals of new and expanded vaccine programmes at the December 2018 Gavi Board reflect a shift from infant vaccination to a life-course approach, which aligns with the priorities of the 13<sup>th</sup> WHO Programme of Work.

:: The Gavi Board retreat on the Gavi 5.0 strategy focused on ways that the Alliance contributes to the SDG vision of leaving no one behind. Four key areas were highlighted including: vaccine introductions; reaching the under-immunized; financial and programmatic sustainability; and healthy markets and innovation.

:: In 2019-2020, Gavi will update its core policies on country eligibility and transition, co-financing, health system investment framework and gender. In addition, the policies will focus on a more differentiated approach to accelerate equitable vaccination coverage and use an evolving support model to further unlock domestic resources.

### **Data use and quality**

:: Discussed were major findings and knowledge gaps around data quality and use, and possible interventions to strengthen governance, tools, assessment and improvement planning in order to use data for continuous quality improvement (CQI) for immunization program decision-making.

:: Considerable amounts of immunization and vaccine-preventable disease surveillance-related data are routinely collected and available nationally, regionally, and globally, though quality and access often remain challenging and more needs to be done to create a “culture of data use”.

:: The use of data was emphasized as one of the major drivers of ongoing improvement in data quality. Any information and communication technology solutions require adequate infrastructure, sustainable financing, political will and a skilled and motivated workforce.

:: SAGE will further discuss this extensive review of data use and data quality in order to make decisions on recommendations at a future SAGE meeting.

### **Update on the development of a post 2020 Global Immunization Strategy**

#### *(i) Interim review and lessons learnt report*

:: SAGE welcomed the interim review and lessons learnt report on the Global Vaccine Action Plan (GVAP). The final report will be presented to SAGE in October 2019. This interim report aims to provide a differentiated view on the achievements and shortcomings of GVAP and inform the development of the post 2020 strategy.

:: Interim findings highlighted achievements such as the alignment of all global actors, a strong monitoring and evaluation framework, emphasis on data quality and the increased numbers of national immunization technical advisory groups (NITAGs).

:: Reported shortcomings included the perception of a top-down plan, little guidance to offer solutions to address challenges, and weaknesses in advocacy and communications.

:: Progress towards the GVAP goals occurred mainly in well-funded areas such as new vaccine introduction.

#### *(ii) Post 2020 strategy*

:: SAGE welcomed the accelerated process to develop the post 2020 global immunization strategy. The strategy should provide a coherent framework allowing alignment with global health agendas and with partner strategies, but especially with regional and country plans.

:: The development of the new strategy was officially launched by WHO with the co-creation multicountry multi-stakeholder forum on 19-21 March 2019 which gathered 110 participants from 50 organisations and over 30 countries. At the forum, a three-level approach was adopted with:

- o An overarching vision for the decade through 2030 which would be used by actors within and beyond the immunization community;
- o A framework strategy for immunization stakeholders;
- o A collection of global, regional and country goals, plans, partner strategies and disease strategies.

:: The strategy will be developed over the next months and include a wide engagement process to assure that the new strategy is informed by country needs and focus. An advanced draft will be presented to SAGE in October 2019 before submission in 2020 to the WHO Executive Board and the World Health Assembly for endorsement.

### **RTS,S/AS01 Malaria Vaccine and the Malaria Vaccine Implementation Programme (MVIP)**

:: The framework for policy decision on RTS,S/AS01 Malaria Vaccine was presented to SAGE for consideration and endorsement. This framework describes how the data from the pilot implementation of the RTS,S/AS01 malaria vaccine in Ghana, Kenya and Malawi will be used to inform future malaria vaccine recommendations.

:: SAGE endorsed the step-wise process laid out in the framework for review and use of data from the pilot studies:

- o Step 1: Updated WHO recommendations on use of RTS,S/AS01 vaccine in Africa are possible if and when (a) safety signals observed in the Phase III trial are resolved, and (b) severe malaria or mortality data trends are assessed as consistent with a beneficial impact of the vaccine. This step could be as early as 24 months after vaccinations begin in the first pilot country of the MVIP.
- o Step 2: Adjustments or refinements to WHO malaria vaccine recommendations may be made based on the final MVIP data set which is expected to be available approximately 50 months after the start of vaccination in the last pilot country of the MVIP. The pilots are designed to establish the public health value of the fourth dose of the vaccine schedule.

:: The framework will be reviewed on 10 April 2019 by the Malaria Policy Advisory Committee with consideration for endorsement.

:: Regional- and country-level consultation will be important in the development of updated WHO recommendations on use of RTS,S/AS01 vaccine.

### **Polio**

:: SAGE acknowledged progress towards poliovirus eradication albeit expressed concerns about areas consistently inaccessible for vaccination in parts of Afghanistan and Nigeria.

:: SAGE expressed concern about the large number of circulating vaccine-derived polioviruses, and the poor vaccination coverage with IPV in many countries.

:: SAGE noted that the IPV supply shortages are abating and will allow swift implementation of catchup campaigns.

:: In anticipation of the certification in 2019 of Wild Polio Virus Type 3 (WPV3) eradication, SAGE discussed the potential switch from bOPV to mOPV1. While no decision was taken at this time, SAGE highlighted the very significant programmatic and regulatory challenges associated with such a switch.

:: SAGE endorsed guidelines for surveillance of poliovirus excretion among persons with primary immunodeficiencies.

### **Defeating meningitis by 2030: Global Roadmap**

:: Meningitis remains a major public health challenge in regions and countries around the world. Cases and outbreaks continue to be highly feared. The magnitude of the problem varies dramatically between regions, but in all instances deaths and long-term sequelae due to meningitis leave a substantial mark.

:: SAGE was presented with the global strategy to 'Defeat Meningitis by 2030' which is being developed by a WHO-led multi-organization initiative that includes partners addressing the specific organisms responsible for most causes of acute bacterial meningitis.

:: SAGE praised the development of a global roadmap for Defeating Meningitis by 2030 that will be shared for recommendation at the October SAGE meeting. The initiative was considered timely, as important advances are happening in the field of the bacterial meningitis pathogens.

:: SAGE assessed the proposed strategic structure and pillars as promising, albeit advised to review the wording of the visionary picture to ensure it is achievable.

:: SAGE acknowledged that there is not sufficient awareness about meningitis globally which results in public complacency, and that the constituency that has driven this global effort is the affected communities.

## **Ebola vaccines**

:: WHO Health Emergencies Response provided an update on the epidemiology of the outbreak in the Democratic Republic of Congo (DRC) and on the status of the Ebola response in North Kivu and particularly noted the important contribution of vaccination in reducing transmission.

:: SAGE re-visited the possible vaccination strategies by reviewing epidemiological data and impact modelling. It concluded that ring vaccination currently remains the most effective strategy in this DRC Ebola outbreak. Geographic targeting should remain as a fall-back strategy. Mass vaccination and ring plus had less favourable overall impact for the doses used in the modelling.

:: SAGE reviewed epidemiological data from North Kivu for children below 1 year of age and for lactating women. Although clinical data on the safety and efficacy of the rVSV-ZEBOV-GP Ebola vaccine for these two specific groups are absent, SAGE considers that the high attack rates and high case fatality rates for these groups, together with the accumulating data on vaccine safety and efficacy for other groups, justify inclusion of children who are above the age of 6 months and of lactating women in the ongoing ring vaccination efforts in North Kivu.

:: SAGE strongly urged the implementation of studies to evaluate additional Ebola candidate vaccines, including where possible in pregnant and lactating women and in infants.

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## **Malaria**

### **Malaria vaccine pilot launched in Malawi**

23 April 2019 *News release*

WHO welcomes the Government of Malawi's launch of the world's first malaria vaccine today in a landmark pilot programme. The country is the first of three in Africa in which the vaccine, known as RTS,S, will be made available to children up to 2 years of age; Ghana and Kenya will introduce the vaccine in the coming weeks.

Malaria remains one of the world's leading killers, claiming the life of one child every two minutes. Most of these deaths are in Africa, where more than 250 000 children die from the disease every year. Children under 5 are at greatest risk of its life-threatening complications. Worldwide, malaria kills 435 000 people a year, most of them children.

"We have seen tremendous gains from bed nets and other measures to control malaria in the last 15 years, but progress has stalled and even reversed in some areas. We need new solutions to get the malaria response back on track, and this vaccine gives us a promising tool to get there," said WHO Director-General Dr Tedros Adhanom Ghebreyesus. "The malaria vaccine has the potential to save tens of thousands of children's lives."...

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### **Partnership welcomes launch of first malaria vaccine pilot**

*Funding agencies hail important step for the world's first malaria vaccine*

Geneva, 23 April 2019 – Malaria vaccine pilots will be a crucial test for a potentially valuable new tool in the fight against the disease, the three agencies funding the vaccine pilots said following the launch of the first one in Malawi.

The pilots, which will also launch soon in Kenya and Ghana, will aim to vaccinate around 360,000 children per year in the three countries to evaluate the feasibility of delivering the required four doses of RTS,S in real-life settings, the vaccine's potential role in reducing childhood deaths and its safety in the context of routine use.

Gavi, the Vaccine Alliance, the Global Fund to Fight AIDS, Tuberculosis and Malaria and Unitaid are together providing just under US\$ 50 million to fund the first phase of the pilots. Ministries of Health in Ghana, Kenya and Malawi will implement the pilots, in coordination with WHO.

"Malaria is still one of the biggest killers of children worldwide, taking the lives of over 200,000 children every year," said Dr Seth Berkley, CEO of Gavi. "These pilots will be crucial to determine the part this vaccine could play in reducing the burden this disease continues to place on the world's poorest countries."

"To step up the fight against malaria, we need every available tool," said Peter Sands, Executive Director of the Global Fund. "If this pilot shows that RTS,S is a cost-effective tool against malaria, it will help us save more children's lives."

"The malaria vaccine is an exciting innovation that complements the global health community's efforts to end the malaria epidemic," said Lelio Marmora, Executive Director of Unitaid. "It is also a shining example of the kind of inter-agency coordination that we need. We look forward to learning how the vaccine can be integrated for greatest impact into our work."

In clinical trials the vaccine was found to prevent approximately 4 in 10 malaria cases, as well as 3 in 10 cases of life-threatening severe malaria. It also reduced severe malaria anaemia, the most common reason children die from the disease, by 60%.

A 4-dose schedule is required, with the first dose given as soon as possible after five months of age, doses two and three given at monthly intervals after that, and the fourth dose given 15–18

months after the third dose. The vaccine will not be available in all regions of the countries, nor will it be given to adults or children outside the target age group.

In the Phase 3 trial the vaccine was generally well tolerated, with adverse reactions comparable to those of other childhood vaccines. The European Medicines Agency (EMA) carried out a scientific assessment of RTS,S and concluded that the vaccine has an acceptable safety profile in a scientific opinion issued in July 2015.

The vaccine is being considered as a complementary malaria control tool to be added to the core package of WHO-recommended measures for malaria prevention. This includes the routine use of insecticide-treated bednets, indoor spraying with insecticides and the timely use of malaria testing and treatment.

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## **Measles**

### **Over 20 million children worldwide missed out on measles vaccine annually in past 8 years, creating a pathway to current global outbreaks - UNICEF**

NEW YORK, 25 April 2019 – An estimated 169 million children missed out on the first dose of the measles vaccine between 2010 and 2017, or 21.1 million children a year on average, UNICEF said today.

Widening pockets of unvaccinated children have created a pathway to the measles outbreaks hitting several countries around the world today.

“The ground for the global measles outbreaks we are witnessing today was laid years ago,” said Henrietta Fore, UNICEF Executive Director. “The measles virus will always find unvaccinated children. If we are serious about averting the spread of this dangerous but preventable disease, we need to vaccinate every child, in rich and poor countries alike.”

In the first three months of 2019, more than 110,000 measles cases were reported worldwide – up nearly 300 per cent from the same period last year. An estimated 110,000 people, most of them children, died from measles in 2017, a 22 per cent increase from the year before.

Two doses of the measles vaccine are essential to protect children from the disease. However, due to lack of access, poor health systems, complacency, and in some cases fear or skepticism about vaccines, the global coverage of the first dose of the measles vaccine was reported at 85 per cent in 2017, a figure that has remained relatively constant over the last decade despite population growth. Global coverage for the second dose is much lower, at 67 per cent. The World Health Organization recommends a threshold of 95 per cent immunization coverage to achieve so-called ‘herd immunity’.

Top ten high-income countries where children not vaccinated with the first measles vaccine dose 2010 – 2017:

1. United States: 2,593,000
2. France: 608,000

3. United Kingdom: 527,000
4. Argentina: 438,000
5. Italy: 435,000
6. Japan: 374,000
7. Canada: 287,000
8. Germany: 168,000
9. Australia: 138,000
10. Chile: 136,000

In high income countries, while coverage with the first dose is 94 per cent, coverage for the second dose drops to 91 per cent, according to the latest data.

The United States tops the list of high-income countries with the most children not receiving the first dose of the vaccine between 2010 and 2017, at more than 2.5 million. It is followed by France and the United Kingdom, with over 600,000 and 500,000 unvaccinated infants, respectively, during the same period.

In low- and middle-income countries, the situation is critical. In 2017, for example, Nigeria had the highest number of children under one year of age who missed out on the first dose, at nearly 4 million. It was followed by India (2.9 million), Pakistan and Indonesia (1.2 million each), and Ethiopia (1.1 million).

Worldwide coverage levels of the second dose of the measles vaccines are even more alarming. Of the top 20 countries with the largest number of unvaccinated children in 2017, 9 have not introduced the second dose. Twenty-countries in sub-Saharan Africa have not introduced the necessary second dose in the national vaccination schedule, putting over 17 million infants a year at higher risk of measles during their childhood.

UNICEF, with partners such as the Measles and Rubella Initiative and Gavi, the Vaccine Alliance, is helping address this measles crisis by:

- :: Negotiating vaccine prices: the cost of the measles vaccine is now at an all-time low;
- :: Helping countries identify underserved areas and unreached children;
- :: Procuring vaccines and other immunization supplies;
- :: Supporting supplementary vaccination campaigns to address gaps in routine immunization coverage;
- :: Working with relevant countries to introduce the second dose of the measles vaccine in the national immunization schedule. Cameroon, Liberia and Nigeria are on track to do so in 2019.
- :: Introducing innovations like the use of solar power and mobile technologies to maintain vaccines at the right temperature.

"Measles is far too contagious," said Fore. "It is critical not only to increase coverage but also to sustain vaccination rates at the right doses to create an umbrella of immunity for everyone."

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**[Statement from Peter Marks, M.D., Ph.D., director of FDA's Center for Biologics Evaluation and Research, on FDA's continued confidence in the safety and effectiveness of the measles, mumps, and rubella \(MMR\) vaccine](#)**



April 22, 2019

The FDA is a public health agency that always strives to use the best available scientific evidence to promote and protect the well being of individuals. **It deeply concerns us when we see preventable diseases such as measles or mumps reemerging in the United States and threatening our communities.** The World Health Organization recently named vaccine hesitancy one of the top 10 threats to global health. In this time of multiple measles outbreaks, and as we approach National Infant Immunization Week, we want to underscore our continued confidence in the safety and effectiveness of the vaccines that are highly successful at preventing – in some cases, nearly eradicating – preventable diseases.

**The MMR vaccine has been approved in the United States for nearly 50 years to prevent measles, mumps and rubella** (also known as German Measles). As a result of its use, measles and rubella were completely eradicated in the United States, and mumps cases decreased by 99%. Large well-designed studies have confirmed the safety and effectiveness of the MMR vaccine and have demonstrated that administration of the vaccine is not associated with the development of autism. However we're seeing an increasing number of outbreaks of measles in communities across the country, including those in New York, New Jersey, Washington, California, and Michigan.

Considered eradicated within the U.S. since 2000, measles has persisted in other areas of the world where the vaccine is not as readily available, including countries in Europe, Asia, the Pacific Islands, and Africa. Unvaccinated U.S. residents may be exposed to measles while they are abroad and bring the disease back into the U.S. and spread it to others. Worldwide, about 20 million people get measles each year. According to the Centers for Disease Control and Prevention (CDC), there have also been outbreaks of mumps reported. It's an urgent public health priority to monitor these diseases and raise awareness of the importance of timely immunizations, especially as outbreaks are taking hold among unvaccinated populations in this country...

**...We cannot state strongly enough – the overwhelming scientific evidence shows that vaccines are among the most effective and safest interventions to both prevent individual illness and protect public health.**

**Vaccinating against measles, mumps and rubella not only protects us and our children, it protects people who can't be vaccinated, including children with compromised immune systems due to illness and its treatment, such as cancer.**

**We do not take lightly our responsibility to ensure the safety and effectiveness of vaccines, and work diligently to assess safety and effectiveness of all licensed vaccines for their intended uses.** The MMR vaccine is very effective at protecting people against measles, mumps, and rubella. It also prevents complications caused by these diseases. And we have nearly 50 years of experience and evidence supporting that fact. In fact, according to the CDC, two doses of the MMR vaccine beginning at 12 months of age (the recommended dosing schedule) are 97% effective against measles, 88% effective against mumps, and 97% effective for rubella.

Like many medical products, the MMR vaccine has known potential side effects that are generally mild and short-lived, such as rash and fever. If parents have concerns about these

side effects, we recommend that they speak with their health care providers about the benefits and risks of vaccines, along with the potential consequences of not vaccinating against diseases.

**The FDA will continue to closely monitor these outbreaks of vaccine-preventable diseases alongside our federal partners at CDC and the Department of Health and Human Services, and will provide any new information about vaccine safety or effectiveness to the public. But just to be clear, the FDA has determined that the MMR vaccine is both safe and effective in preventing these diseases.** We join our colleagues at HHS, CDC, National Institutes of Health and state and local health departments across the country in the continued effort to encourage vaccinations against these preventable diseases...

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## Featured Journal Content

### The Lancet

Apr 27, 2019 Volume 393 Number 10182 p1669-1772, e39

<https://www.thelancet.com/journals/lancet/issue/current>

*Editorial*

### [Measles eradication: a goal within reach, slipping away](#)

The Lancet

Prior to the introduction of the measles, mumps and rubella vaccine (MMR) in 1963, an estimated 3 to 4 million people in the USA contracted measles annually. As of April 22, 626 children in the USA have become infected with the virus so far in 2019. This fact has led to urgent Congressional hearings, understandably alarmed national news coverage, and the introduction of legislation to address the outbreak. Measles was declared eliminated [in the USA](#) in 2000, but the resurgence of the disease and its continued prominence globally are causes for great concern.

In the past 5 years, 75% of measles cases in the USA have occurred within more closed, religious communities such as the Amish in the Midwest and Somali migrants in Minnesota. According to the US Centers for Disease Control and Prevention, 91% of US children between the ages of 19 and 35 months receive MMR vaccinations. But within New York's ultra-Orthodox Jewish community, for example, the rate is as low as 60%. These communities tend to be extremely close knit, have large families and young populations, and are fairly isolated from their surrounding communities. 90% of unvaccinated people exposed to measles will become infected, and, in communities such as these, even a small rate of vaccination hesitancy could potentially pose an enormous risk for a larger epidemic.

The current measles outbreak has become a major political issue in America. In New York City, Mayor Bill de Blasio controversially ordered mandatory vaccinations for specific areas of Williamsburg, Brooklyn—areas with heavily Orthodox Jewish populations—with a threat of a US\$1000 fine. So far, six states have introduced legislation that would limit or eliminate the ability to claim religious or personal exemptions from vaccination for children. In the USA, anti-vaccine views don't align neatly with political poles. But the fact that views seem to be hardening is an ominous echo of the political divisions that have prevented the near-unanimous

scientific consensus on global climate change from being more broadly accepted in the USA. The science on vaccines is just as reliable, and the prospect of vaccination becoming another front in a political cold war could presage incalculable harm.

[Global measles](#) deaths have declined by over 80% since 2000—from 550 100 deaths to 89 780 deaths in 2016. But, according to WHO, there have been over 112 000 confirmed measles cases globally to date in 2019—nearly half of these in Africa, an increase of 700% over the same period in 2018. Europe has also seen a 300% increase in measles infection, with the German state of Brandenburg ordering mandatory vaccination at kindergartens. In 2018, 85% of children had received one dose of the two-dose MMR vaccine, while only 67% had received both. WHO reports that vaccine-hesitant parents often find misinformation online, and engagement, listening, and information provided by medical professionals are often the best ways to address concerns. While conflict and infrastructure are also major drivers of the current outbreak in Venezuela, Madagascar, and other nations, WHO called vaccine hesitancy one of [its top ten threats](#) to global health in 2019.

Removing vaccine exemptions for non-medical reasons has proven effective in the past. In 2015, California [outlawed](#) non-medical vaccination exemptions for school admissions and the vaccination rate rose to greater than 95%. And while we must carefully balance the needs of public health with religious rights, vaccine hesitancy isn't just a personal issue. With a condition as contagious as measles, the choice not to vaccinate leaves the immunocompromised and children too young to be vaccinated at risk of infection.

Measles continues to spread within the USA and internationally in isolated, under-resourced and conflict-riven areas. The USA spends around \$2 billion on vaccination programmes annually, but further government investment and community engagement are required, in America and globally: from efforts to communicate the effectiveness of vaccination and the dangers of diseases parents may have no first-hand knowledge of, to making vaccination as easy as possible by providing the option of community and home vaccination for large families, families with limited means, or vulnerable populations. Fifty-six years ago, millions faced measles every year. Today, only a bare handful do, and that success should spur us to make the effort to engage, inform, and ensure that measles is controlled globally once and for all.

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## Featured Journal Content

### Science

26 April 2019 Vol 364, Issue 6438

<http://www.sciencemag.org/current.dtl>

*Editorial*

### [Health for all](#)

By Seth Berkley, Henrietta Fore

Science 26 Apr 2019 : 309

*Summary*

Imagine a world where affordable, quality health care is available to every person, and where infectious disease and infant and maternal mortality are as rare in the poorest parts as they are

in wealthier countries. The world has already come a long way toward meeting this goal. But to finish the job, we need to change our thinking.

To be sure, the incidence of child mortality and cases of deadly infectious diseases have dropped dramatically around the world. For example, polio, which once paralyzed a thousand children every day, has been eliminated from all but three countries, with just 33 cases last year. Measles cases, despite a recent, alarming global surge, are now a fraction of what they were four decades ago. All this was made possible because global health organizations and the governments of lower-income countries have worked together to provide the most vulnerable communities access to essential health care interventions, such as clean water, sanitation, and vaccinations.

And yet, 1 in 10 children are still missing out. Most are the hardest to reach, whether they live in remote rural villages, conflict zones, among the swelling numbers of displaced people, or in rapidly growing urban slums where they might be undetected by formal health systems. Meeting their needs will require focusing more on health interventions that have both the greatest reach and are conduits to other health services for vulnerable communities. Childhood vaccination does precisely this. Vaccination reaches more children—more than 85%, who are inoculated against a range of infectious diseases—than any other health intervention globally. When a child gets access to vaccines, it benefits that child's community. With vaccines come supply chains, logistics, cold storage, trained health care staff, data monitoring, disease surveillance, and health care records. Parents and siblings often come along with the child who is being vaccinated, giving them potential access to a host of other health interventions—from neonatal and maternal health care to malaria prevention measures, and sexual and reproductive health and education.

Achieving health for all will also require a change in mindset. We must examine the barriers that deny health care to so many others. Such barriers can take different practical, cultural, or social forms, but identifying them can inform the development of new tailored solutions. If parents have too far to travel, for example, then build more health facilities closer to those who need them. Similarly, the lack of after-hours vaccination clinics or the use of male vaccinators in some settings can prevent or deter attendance. Also, traditional paper medical records may make it difficult for health care workers to know who is missing out because parents may rarely attend the same clinic twice.

This new mindset will require a shift in business models. Instead of seeking solutions that have the greatest utilitarian value, it could be better to look for innovative solutions that have an intended disproportionate impact, largely benefiting the few rather than the many. For example, in Tanzania, the Electronic Immunization Register, a tablet-based system, is giving vaccinators access to records across entire regions regardless of which clinic they are in. This is enabling them to proactively track which children are missing out.

As the 2030 deadline looms for the United Nations Sustainable Development Goals (SDGs), targets driving a broad range of development efforts today, providing health for all is likely to become increasingly more difficult. The good news is that nations have already taken the first major step with the SDG Global Action Plan, a commitment made last year by global health agencies to unite around efforts to accelerate progress. The hope is to start implementing a

plan in September 2019. Health for all is achievable, but this vision requires new thinking by everyone.

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## **DRC – Ebola**

### **38: Situation report on the Ebola outbreak in North Kivu**

24 April 2019

*[Excerpt]*

#### *Implementation of ring vaccination protocol*

:: As of 20 April 2019, 104 342 contacts and contacts of contacts have been vaccinated. Of those 26 613 were contacts and 74 367 contacts of contacts. The vaccinated people at risk included 29 688 HCWs/FLWs, and 26 361 children 1-6 years old. Detailed micro-plans are also in use to monitor the progress and number of cases with and without rings.

:: Between 2-4 April 2019, Strategic Advisory Group of Experts (SAGE) convened a meeting to review epidemiological data from North Kivu for children below 1 year of age and for lactating women. Although clinical data on the safety and efficacy of the rVSV-ZEBOV-GP Ebola vaccine for these two specific groups are absent, SAGE considers that the high attack rates and high case fatality ratios for these groups, together with the accumulating data on vaccine safety and efficacy for other groups, justify inclusion of children who are above the age of 6 months and of lactating women in the ongoing ring vaccination efforts in North Kivu. SAGE strongly urged the implementation of studies to evaluate additional Ebola candidate vaccines, including where possible in pregnant and lactating women and in infants. ([Please see here for a summary of the SAGE meeting highlights](#))

:: On 12 April 2019, INRB and WHO published a preliminary analysis of the efficacy of RVSZ-ZEBOV-GP emerging from the DRC outbreak data ([Please see here for preliminary analysis](#)). The data suggest high efficacy of this candidate vaccine and of the ring vaccination in this outbreak.

:: There are currently 23 vaccination teams comprised of 276 Congolese vaccinators with basic GCP training, 50 Congolese with formal GCP training, and 43 experienced Guinean/African GCP researchers.

:: There is continuation of ring vaccination in Beni, Katwa, Butembo, Mandima, Bunia, Vuhovi, and Lubero health zones around confirmed cases, as well as front-line providers in Goma.

:: Current vaccination strategies being employed on the ground include site by site vaccination, simultaneous vaccination of contacts and their contacts in the community, healthcare worker vaccination, and targeted geographic vaccination of areas where contacts of contacts cannot be clearly identified due to insecurity.

### **DONs - Ebola virus disease – Democratic Republic of the Congo**

25 April 2019

**This past week witnessed a notable escalation of security incidents surrounding the Ebola virus disease (EVD) response efforts. On 19 April, an attack on a hospital in Katwa by armed militia resulted in the tragic death of Dr Richard Mouzoko Kiboung, a WHO epidemiologist, and the injury of two other healthcare workers. To ensure the safety of all outbreak responders, Ebola response activities have been temporarily halted in some high-risk health areas until security measures can be reinforced.**

WHO, the UN, and the government of the Democratic Republic of the Congo are actively collaborating to review current strategic and operational security measures to ensure the protection of healthcare workers in the field, and improve effective coordination and information sharing amongst all security elements covering the response. Existing operational security measures continue to be implemented and strengthened as well, including the establishment of security perimeters around the residences of EVD response personnel, increasing security at fixed locations, enhancing the joint quick response team (QRT) capacities of local police and UN security forces, and ensuring staff compliance with tracking procedures and adherence to curfew. These measures and other security risk management processes will be continually updated to reflect the needs of the evolving security situation on the ground.

In addition to revising security measures, efforts in community outreach through direct dialogue with various community leaders are also being intensified. Since January, there has been a notable increase in community resistance incidents, primarily around Katwa and Butembo. Incidents in April are anticipated to reach or go beyond March levels. As gaining community understanding and acceptance is integral to our ability to mount an effective outbreak response, community engagement efforts remain a significant element of our response to alleviate future security risks to healthcare workers, develop and increase local community capacity to ensure continuity of response operations, and improve the overall security situation in EVD hotspot areas...

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## **Emergencies**

### **POLIO**

*Public Health Emergency of International Concern (PHEIC)*

#### **Polio this week as of 24 April 2019**

:: Starting 24 April to 30 April 2019, World Immunization Week is celebrated across the world. This year's theme is Protected Together: Vaccines Work!, which aims to spotlight the important role parents, communities, health workers, innovators and everyday vaccine heroes play in ensuring everybody benefits from the lifesaving vaccines.

*Summary of new viruses this week:*

:: **Afghanistan**—three wild poliovirus type 1 (WPV1) cases and three WPV1-positive environmental samples;

:: **Pakistan**—advance notification of two wild poliovirus type 1 (WPV1) cases and 13 WPV1-positive environmental samples;

:: **Nigeria**—two circulating vaccine-derived type 2 (cVDPV2) cases and six cVDPV2-positive environmental samples;  
:: **Democratic Republic of Congo** — one cVDPV2 case and two cVDPV2 community isolates;  
:: **Somalia**—one cVDPV2 case and one cVDPV2 contact isolate.

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## **New York Times**

<http://www.nytimes.com/>

Accessed 27 Apr 2019

Asia Pacific

### **Polio Vaccinator Is Shot and Killed in Pakistan**

April 25

The woman was part of a vaccination campaign. Another worker in her team was injured. A total of three polio workers have been killed this week as unfounded rumors against vaccines spread.

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### **Editor's Note:**

WHO has posted a [refreshed emergencies page](#) which presents an updated listing of Grade 3,2,1 emergencies as below.

### **WHO Grade 3 Emergencies** [to 27 Apr 2019]

#### **Democratic Republic of the Congo**

:: Zero Palu: Each household, each community, accelerate the commitment in the fight against malaria in the Democratic Republic of the Congo

25 April 2019 Kinshasa -- The Democratic Republic of Congo has joined forces with the entire international community to commemorate World Malaria Day, under the theme: 'Zero palu! I'm in !'. [Read the story in French](#)

:: 38: Situation report on the Ebola outbreak in North Kivu 24 April 2019

:: DONs - Ebola virus disease – Democratic Republic of the Congo 25 April 2019

#### **Syrian Arab Republic**

:: WHO-supported vaccination campaign to immunize 2.8 million children against vaccine-preventable diseases

22 April 2019, Damascus, Syria – Over the next 6 days, the World Health Organization (WHO), in cooperation with the Syrian Ministry of Health and UNICEF, will conduct a series of national immunization days to immunize children under the age of 5 against vaccine-preventable diseases, including tuberculosis, pertussis, diphtheria, polio, tetanus, hepatitis B, haemophilus influenza, measles, mumps and rubella.

WHO aims to vaccinate approximately 2.8 million children under the age of 5 in 13 governorates in Syria. The campaign will focus on reaching almost 250 000 children who were not vaccinated during previous campaigns. Over 6800 vaccinators and 2487 mobile medical teams will be deployed to 900 public health centres and 1268 temporary vaccination posts. WHO is providing technical support to the Ministry of Health and covering the operational costs of the campaign...

## **Yemen**

:: Government of Japan support to WHO response in Yemen 24 April 2019

...n 2019, donations from Japan will continue to allow WHO to scale up its capacity-building activities for national health care personnel. These activities will target thousands of health professionals across the country, building on their capacity to deliver pre-hospital care...

Bangladesh - Rohingya crisis - No new digest announcements identified

Cyclone Idai - No new digest announcements identified

Myanmar - No new digest announcements identified

Nigeria - No new digest announcements identified

Somalia - No new digest announcements identified

South Sudan - No new digest announcements identified

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## **WHO Grade 2 Emergencies** [to 27 Apr 2019]

### **Brazil** (in Portuguese)

:: Últimas notícias OPAS lança iniciativa que prioriza combate à malária em municípios onde se concentram maioria dos casos

26 de abril de 2019 – Uma nova iniciativa da Organização Pan-Americana da Saúde (OPAS) tem como objetivo abordar a carga da malária na região das Américas, onde o número de casos é mais concentrado. Chamado de “Municípios eliminando a malária”, o projeto se centrará em reunir atores-chaves com o fim de apoiar os esforços locais para adotar medidas efetivas contra a doença.

Cameroon - No new digest announcements identified

Central African Republic - No new digest announcements identified

Ethiopia - No new digest announcements identified

Iraq - No new digest announcements identified

Libya - No new digest announcements identified

MERS-CoV - No new digest announcements identified

Niger - No new digest announcements identified

occupied Palestinian territory - No new digest announcements identified

Sudan - No new digest announcements identified

Ukraine - No new digest announcements identified

Zimbabwe - No new digest announcements identified

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## **WHO Grade 1 Emergencies** [to 27 Apr 2019]

Afghanistan - No new digest announcements identified

Chad - No new digest announcements identified

Indonesia - Sulawesi earthquake 2018 - No new digest announcements identified

Kenya - No new digest announcements identified

Lao People's Democratic Republic - No new digest announcements identified

Mali - No new digest announcements identified

Namibia - viral hepatitis - No new digest announcements identified



Peru - *No new digest announcements identified*  
Philippines - *Typhoon Mangkhut - No new digest announcements identified*  
Tanzania - *No new digest announcements identified*

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### **UN OCHA – L3 Emergencies**

*The UN and its humanitarian partners are currently responding to three 'L3' emergencies. This is the global humanitarian system's classification for the response to the most severe, large-scale humanitarian crises.*

Syrian Arab Republic - *No new digest announcements identified*  
Yemen - *No new digest announcements identified*

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### **UN OCHA – Corporate Emergencies**

*When the USG/ERC declares a Corporate Emergency Response, all OCHA offices, branches and sections provide their full support to response activities both at HQ and in the field.*

#### **CYCLONE IDAI**

:: 26 April 2019 Southern Africa: Tropical Cyclone Kenneth Flash Update No. 3 ...

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### **WHO & Regional Offices** [to 27 Apr 2019]

24 April 2019 *News release*

**To grow up healthy, children need to sit less and play more**

23 April 2019 *News release*

**Malaria vaccine pilot launched in Malawi**

*[See Malaria above for detail]*

23 April 2019 *Statement*

**Fats, oils, food and food service industries should join global effort to eliminate industrial trans fat from processed food by 2023**

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### **Weekly Epidemiological Record, 26 April 2019, vol. 94, 17 (pp. 197–212)**

:: A new approach to rodent control to better protect human health: first international meeting of experts under the auspices of WHO and the Pan American Health Organization

:: Report of the twenty-ninth meeting of the International Task Force for Disease Eradication, 15 January 2019

:: Carbapenem-resistant *Pseudomonas aeruginosa* infection – Mexico

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## **WHO Regional Offices**

*Selected Press Releases, Announcements*

### **WHO African Region AFRO**

:: WHO briefs Diplomats on Ebola Preparedness and Response activities in Uganda

26 April 2019

:: World Malaria Day- Minister says, time is ripe to end the deadly disease for good.

26 April 2019

:: Uganda embarks on a multisectoral approach to improve Vaccination coverage against Human Papillomavirus 25 April 2019

:: Uganda Simulates Ebola Outbreak and Identifies Gaps in Preparedness and Response

24 April 2019

:: Malaria vaccine pilot launched in Malawi 23 April 2019

### **WHO Region of the Americas PAHO**

:: PAHO provides guidance on improving the health of migrants in countries of the Americas (04/26/2019)

:: PAHO's 'Municipalities for Zero Malaria' initiative to tackle malaria at the local level (04/25/2019)

:: PAHO launches Vaccination Week in the Americas in Brazil, urging countries in the Region to unite to end measles (04/23/2019)

### **WHO South-East Asia Region SEARO**

:: Step up efforts to eliminate measles: WHO SEAR/PR/1711

New Delhi, 25 April 2019: Amidst increasing cases and outbreaks of measles globally, WHO today called upon countries in its South-East Asia Region to further accelerate efforts to ensure that everyone, everywhere receives the lifesaving benefits of immunization.

### **WHO European Region EURO**

:: EIW 2019 statement by Her Royal Highness Crown Princess Mary of Denmark – We can all be vaccine heroes 24-04-2019

:: Joint statement: European Immunization Week 24-04-2019

:: European Immunization Week celebrates the everyday heroes who help protect us all from dangerous diseases 23-04-2019

### **WHO Eastern Mediterranean Region EMRO**

:: Support for people with HIV affected by recent flooding in Islamic Republic of Iran 25 April 2019

:: Government of Japan support to WHO response in Yemen 25 April 2019

:: Vaccination campaign to immunize 2.8 million children in Syria 22 April 2019

### **WHO Western Pacific Region**

*No new digest content identified.*

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**CDC/ACIP** [to 27 Apr 2019]

<http://www.cdc.gov/media/index.html>  
<https://www.cdc.gov/vaccines/acip/index.html>

Wednesday, April 24, 2019•

### **CDC Media Statement: Measles cases in the U.S. are highest since measles was eliminated in 2000**

As 3 p.m. today, April 24, 2019, CDC is reporting 695 cases of measles from 22 states. This is the greatest number of cases reported in the United States since measles was eliminated from this country in 2000.

"This current outbreak is deeply troubling and I call upon all healthcare providers to assure patients about the efficacy and safety of the measles vaccine, said CDC Director Robert Redfield. "And, I encourage all Americans to adhere to CDC vaccine guidelines in order to protect themselves, their families, and their communities from measles and other vaccine preventable diseases. We must work together as a Nation to eliminate this disease once and for all."

The high number of cases in 2019 is primarily the result of a few large outbreaks – one in Washington State and two large outbreaks in New York that started in late 2018. The outbreaks in New York City and New York State are among the largest and longest lasting since measles elimination in 2000. The longer these outbreaks continue, the greater the chance measles will again get a sustained foothold in the United States...

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### **Africa CDC** [to 27 Apr 2019]

<https://au.int/en/africacdc>

*No new digest content identified.*

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### **China CDC**

<http://www.chinacdc.cn/en/>

*New website launched...no "news" or "announcements" page identified. Link to National Health Commission of the People's Republic of China not responding at inquiry [27 Apr 2019]*

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### **Announcements**

### **Paul G. Allen Frontiers Group** [to 27 Apr 2019]

<https://www.alleninstitute.org/news-press/>

*No new digest content identified.*

### **BMGF - Gates Foundation** [to 27 Apr 2019]

<http://www.gatesfoundation.org/Media-Center/Press-Releases>

*No new digest content identified.*

**Bill & Melinda Gates Medical Research Institute** [to 27 Apr 2019]

<https://www.gatesmri.org/>

*The Bill & Melinda Gates Medical Research Institute is a non-profit biotech organization. Our mission is to develop products to fight malaria, tuberculosis, and diarrheal diseases—three major causes of mortality, poverty, and inequality in developing countries. The world has unprecedented scientific tools at its disposal; now is the time to use them to save the lives of the world's poorest people*

*No new digest content identified.*

**CARB-X** [to 27 Apr 2019]

<https://carb-x.org/>

*CARB-X is a non-profit public-private partnership dedicated to accelerating antibacterial research to tackle the global rising threat of drug-resistant bacteria.*

*No new digest content identified.*

**CEPI – Coalition for Epidemic Preparedness Innovations** [to 27 Apr 2019]

<http://cepi.net/>

No new digest content identified.

**Clinton Health Access Initiative, Inc. (CHAI)** [to 27 Apr 2019]

<https://clintonhealthaccess.org/about/>

Published April 25th, 2019

**Improving malaria diagnosis and treatment in the private sector**

...CHAI is working with partners to increase access to effective malaria diagnostics and treatments to save lives and drive down malaria transmission. CHAI is helping governments increase the availability and usage of artemisinin-based combination therapies (ACTs)— the recommended first-line treatment for uncomplicated malaria— in all of the locations that patients seek treatment for malaria, including private sector outlets...

**EDCTP** [to 27 Apr 2019]

<http://www.edctp.org/>

*The European & Developing Countries Clinical Trials Partnership (EDCTP) aims to accelerate the development of new or improved drugs, vaccines, microbicides and diagnostics against HIV/AIDS, tuberculosis and malaria as well as other poverty-related and neglected infectious diseases in sub-Saharan Africa, with a focus on phase II and III clinical trials*

*Latest news*

25 April 2019

**EDCTP malaria portfolio: large investments in treatment and vaccine**

The World Malaria Report 2018 states that after an unprecedented period of success in global malaria control, progress has stalled. Data from 2015–2017 show no significant progress in reducing global malaria cases. In 2017 there were still an estimated 219 million cases and 435 000 related deaths in 2017. In addition to the existing control and elimination efforts, scaling up of malaria research and innovation is necessary, including developing new and improved drugs and regimens to address emerging drug resistance, as well as vaccines,

diagnostics and vector control research & development (R&D). The fight against malaria requires combined and integrated approaches which necessitates a concerted effort of many partners...

**Emory Vaccine Center** [to 27 Apr 2019]

<http://www.vaccines.emory.edu/>

*No new digest content identified.*

**European Medicines Agency** [to 27 Apr 2019]

<http://www.ema.europa.eu/ema/>

*News and press releases*

**[News: Meeting highlights from the Committee for Medicinal Products for Human Use \(CHMP\) 23-26 April 2019](#)** CHMP, 26/04/2019

EMA's human medicines committee ([CHMP](#)) recommended thirteen medicines for approval at its April 2019 meeting.

**[News: European Immunization Week 2019: statement by Executive Director Guido Rasi](#)**

24/04/2019

**European Vaccine Initiative** [to 27 Apr 2019]

<http://www.euvaccine.eu/news-events>

*Latest news*

**[World Malaria Day 2019](#)**

25 April 2019

"Zero Malaria Starts with Me"

**FDA** [to 27 Apr 2019]

<https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/default.htm>

April 22, 2019

**[Statement from Peter Marks, M.D., Ph.D., director of FDA's Center for Biologics Evaluation and Research, on FDA's continued confidence in the safety and effectiveness of the measles, mumps, and rubella \(MMR\) vaccine](#)**

**Fondation Merieux** [to 27 Apr 2019]

<http://www.fondation-merieux.org/>

*No new digest content identified.*

**Gavi** [to 27 Apr 2019]

<https://www.gavi.org/>

*Latest News*

**[Ghana launches the world's largest vaccine drone delivery network](#)**

24 April 2019

With support from Gavi, The UPS Foundation and other partners, Zipline drones will serve up to 2,000 health facilities and 12 million people in Ghana

### **Partnership welcomes launch of first malaria vaccine pilot**

23 April 2019

Funding agencies hail important step for the world's first malaria vaccine

*[See Milestones above for detail]*

### **GHIT Fund** [to 27 Apr 2019]

<https://www.ghitfund.org/newsroom/press>

*GHIT was set up in 2012 with the aim of developing new tools to tackle infectious diseases that devastate the world's poorest people. Other funders include six Japanese pharmaceutical*  
*No new digest content identified.*

### **Global Fund** [to 27 Apr 2019]

<https://www.theglobalfund.org/en/news/>

*News*

*No new digest content identified.*

### **Hilleman Laboratories** [to 27 Apr 2019]

<http://www.hillemanlabs.org/>

*No new digest content identified.*

### **Human Vaccines Project** [to 27 Apr 2019]

<http://www.humanvaccinesproject.org/media/press-releases/>

*No new digest content identified.*

### **IAVI** [to 27 Apr 2019]

<https://www.iavi.org/newsroom>

*No new digest content identified.*

### **IFFIm**

<http://www.iffim.org/library/news/press-releases/>

26 April 2019

### **World Immunization Week highlights IFFIm's game-changing innovations**

Since 2006, IFFIm has contributed US\$ 2.6 billion to Gavi's immunisation programmes and had a catalytic effect on increasing uptake of underused vaccines in the poorest countries.

### **IFRC** [to 27 Apr 2019]

<http://media.ifrc.org/ifrc/news/press-releases/>

*Selected Press Releases, Announcements  
Africa, Comoros, Mozambique, Tanzania*

**Volunteers in Comoros, Mozambique and Tanzania prepare as Cyclone Kenneth forms**

Nairobi/Geneva, 24 April 2019 – Teams of Red Cross and Red Crescent volunteers are on alert as a Cyclone Kenneth makes its way to Comoros and potentially on to Tanzania and Mozambique. Red Cross volunteers in northern Mozambique are alerting communities ...

**IVAC** [to 27 Apr 2019]

<https://www.jhsph.edu/research/centers-and-institutes/ivac/index.html>

*No new digest content identified.*

**IVI** [to 27 Apr 2019]

<http://www.ivi.int/>

*IVI News & Announcements*

*No new digest content identified.*

**JEE Alliance** [to 27 Apr 2019]

<https://www.jeealliance.org/>

*Selected News and Events*

*No new digest content identified.*

**MSF/Médecins Sans Frontières** [to 27 Apr 2019]

<http://www.msf.org/>

Selected News; Project Updates, Reports [as presented on website]

*Yemen*

**Mothers and children left to die in Yemen without access to medical care**

Press Release 24 April 2019

:: Pregnant women and sick children in Yemen are struggling to reach timely medical care, four years into the war.

:: Lack of health facilities, people having to negotiate frontlines and checkpoints, and lack of funds to afford alternatives main reasons.

:: We urge the warring parties to ensure the protection of civilians and health workers, and to allow the wounded and sick to access healthcare.

**NIH** [to 27 Apr 2019]

<http://www.nih.gov/news-events/news-releases>

April 25, 2019

**NIH statement on World Malaria Day 2019**

— *Statement of B.F. (Lee) Hall, M.D., Ph.D., and Anthony S. Fauci, M.D., National Institute of Allergy and Infectious Diseases.*

Eliminating malaria — one of the world's oldest and deadliest diseases — remains a critically important public health and biomedical research challenge. Despite remarkable advances in

reducing malaria incidence and deaths since 2000, recent progress has become stagnant and has even reversed in some regions. The World Health Organization (link is external) (WHO) estimates that in 2017 about 219 million cases of malaria occurred worldwide and approximately 435,000 people died of the disease. Unfortunately, malaria cases increased from 2016 to 2017 in the 10 highest-burden countries in Africa, and the number of cases per 1,000 in populations at risk remained at 59 from 2015 to 2017.

Today, the National Institutes of Health recognizes World Malaria Day and commits to a reinvigorated malaria research program. This year's World Malaria Day theme, "Zero malaria starts with me," encourages governments, companies, academic institutions, philanthropies, and others to prioritize malaria, mobilize resources, and empower communities affected by malaria to lead and coordinate response activities. The National Institute of Allergy and Infectious Diseases (NIAID), part of NIH, is working toward "zero malaria" with coordinated global research projects to better understand the disease, improve diagnostics, treatments, and mosquito control interventions, and develop safe and effective vaccines...

**PATH** [to 27 Apr 2019]

<https://www.path.org/media-center/>

April 24, 2019 by PATH

### **New program in Myanmar translates policy into practice for sexual and reproductive health and rights**

The new sexual and reproductive health and rights (SRHR) STRONG+ project engages communities to discuss their rights and responsibilities and inform future policy change

### **PATH congratulates Malawi on introducing the first malaria vaccine for African children**

Seattle, WA, April 23, 2019 – PATH welcomes the announcement today by the World Health Organization (WHO) and the Malawi Ministry of Health that the first children have received the RTS,S/AS01 (RTS,S) malaria vaccine through routine immunization in Malawi, marking the beginning of a pilot introduction of the vaccine. Malawi is the first of the three participating countries—the others being Ghana and Kenya—to begin vaccination...

### **PATH and MMV launch 5-year global initiative to support elimination of relapsing malaria**

Geneva, Switzerland and Seattle, WA, USA, April 23, 2019 – PATH and Medicines for Malaria Venture (MMV) announce a 5-year, jointly-led initiative, VivAccess, to support countries in the elimination of *Plasmodium vivax* (P. vivax) malaria. The initiative is part of the larger global effort to support malaria-endemic countries in the adoption and use of new and existing tools, to facilitate well-tolerated and effective radical cure to prevent relapse. VivAccess's work is funded by the Bill & Melinda Gates Foundation...

**Sabin Vaccine Institute** [to 27 Apr 2019]

<http://www.sabin.org/updates/pressreleases>

*No new digest content identified.*

**UNAIDS** [to 27 Apr 2019]



<http://www.unaids.org/en>

*Selected Press Releases/Reports/Statements*

24 April 2019

**[Keeping up the momentum in the global AIDS response](#)**

23 April 2019

**[Women lead to reduce the impact of HIV and gender-based violence in the Middle East and North Africa](#)**

**UNICEF** [to 27 Apr 2019]

<https://www.unicef.org/media/press-releases>

*Selected Statements, Press Releases, Reports*

*Press release*

**[UNICEF expands network of drone testing corridors](#)**

25/04/2019

*Press release*

**[Nearly 15,000 cases of malaria reported in areas of Mozambique affected by Cyclone Idai – UNICEF](#)**

Concerns over increased caseload as world marks Malaria Day and second cyclone approaches

25/04/2019

*Press release*

**[Over 20 million children worldwide missed out on measles vaccine annually in past 8 years, creating a pathway to current global outbreaks - UNICEF](#)**

24/04/2019

*[See Milestones above for detail]*

**Vaccine Confidence Project** [to 27 Apr 2019]

<http://www.vaccineconfidence.org/>

*No new digest content identified.*

**Vaccine Education Center – Children’s Hospital of Philadelphia** [to 27 Apr 2019]

<http://www.chop.edu/centers-programs/vaccine-education-center>

Published on Apr 10, 2019

**[Measles Outbreaks](#)**

In this video, Dr. Offit explains who may need measles vaccines during an outbreak. The accompanying article includes what you need to know about measles disease, the vaccine that helps to prevent it, and considerations for both vaccinated and unvaccinated individuals during an outbreak.

**Wellcome Trust** [to 27 Apr 2019]

<https://wellcome.ac.uk/news>

*News* | 25 April 2019

### **New data re-use prizes help unlock the value of research**

The winners of our Wellcome Data Re-use Prizes have generated new insights in antimicrobial resistance and malaria research.

*Opinion* | 23 April 2019

### **We ignore the disaster in the antibiotics market at our peril**

by Jeremy Farrar

There is no viable path for new drugs, however valuable they are to society.

**The Wistar Institute** [to 27 Apr 2019]

<https://www.wistar.org/news/press-releases>

*Press Release*

Apr. 23, 2019

### **Wistar Earns 'Exceptional' Rating for NCI Cancer Center Support Grant for the Second Review Cycle in a Row, Demonstrating Strength of Science**

Wistar's Cancer Center became the first National Cancer Institute-designated basic cancer center in the nation in 1972 and has held this national recognition for the past 46 years.

**World Organisation for Animal Health (OIE)** [to 27 Apr 2019]

<http://www.oie.int/en/for-the-media/press-releases/2019/>

*No new digest content identified.*

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**BIO** [to 27 Apr 2019]

<https://www.bio.org/insights/press-release>

*No new digest content identified.*

**DCVMN – Developing Country Vaccine Manufacturers Network** [to 27 Apr 2019]

<http://www.dcvmn.org/>

April 8th 2019

### **First cell-culture based influenza vaccine received WHO Prequalification**

Geneva, - SKYCellflu Multidose, the cell-culture based influenza vaccine, manufactured by SK bioscience, received World Health Organization (WHO) prequalification...SK bioscience has commercialized the world's first cell-culture influenza vaccine for children and adolescents between the ages of 6 months to 18 years, as well as the world's second for adults. The company obtained national marketing authorization in December 2014 for SKYCellflu prefilled syringe introduction in South Korea....

**IFPMA** [to 27 Apr 2019]

<http://www.ifpma.org/resources/news-releases/>

*No new digest content identified.*

**PhRMA** [to 27 Apr 2019]

<http://www.phrma.org/press-room>

*Press Release*

## **PhRMA Welcomes 2019 Special 301 Report**

*Applauds USTR for Focusing on Countries that Undermine Patents, American Manufacturing and Jobs*

WASHINGTON, D.C. (April 25, 2019) – The Pharmaceutical Research and Manufacturers of America (PhRMA) welcomed the 2019 Special 301 Report released today by U.S. Trade Representative (USTR) Robert Lighthizer. The report highlights serious market access and intellectual property (IP) barriers American innovators face in countries around the world, including in Canada, Chile, Colombia, India, Indonesia, Malaysia, Saudi Arabia and other markets.

“Biopharmaceutical innovators rely on predictable, transparent and fair intellectual property and market access systems around the world to continue developing new medicines and get those treatments to patients,” said Brian Toohey, senior vice president for International Advocacy, PhRMA. “We are pleased the Administration is shining a light on damaging practices abroad that undermine American innovation and limit local patient access to new medicines.”...

## **Industry Watch** [to 27 Apr 2019]

:: **GSK invests \$100 million to expand long-term vaccine manufacturing capabilities in Hamilton, MT**

Apr 24, 2019

:: Site expansion will boost vaccine production capacity

:: Creating new temporary construction and contracting jobs; and new permanent GSK positions

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## **Journal Watch**

*Vaccines and Global Health: The Week in Review* continues its weekly scanning of key peer-reviewed journals to identify and cite articles, commentary and editorials, books reviews and other content supporting our focus on vaccine ethics and policy. Journal Watch is not intended to be exhaustive, but indicative of themes and issues the Center is actively tracking. We selectively provide full text of some editorial and comment articles that are specifically relevant to our work. Successful access to some of the links provided may require subscription or other access arrangement unique to the publisher.

If you would like to suggest other journal titles to include in this service, please contact David Curry at: [david.r.curry@centerforvaccineethicsandpolicy.org](mailto:david.r.curry@centerforvaccineethicsandpolicy.org)

## **American Journal of Infection Control**

May 2019 Volume 47, Issue 5, p479-600

<http://www.ajicjournal.org/current>

[New issue; No digest content identified]

## **American Journal of Preventive Medicine**

May 2019 Volume 56, Issue 5, p631-772

<http://www.ajpmonline.org/current>

[New issue; No digest content identified]

## **American Journal of Public Health**

May 2019 109(5)

<http://ajph.aphapublications.org/toc/ajph/current>

*AJPH EDITOR'S CHOICE*

### **Communicating Research in an Era of Misinformation**

*Media, Immunization/Vaccines, Health Promotion*

Megan Lowry and David Fouse

*[Initial text]*

Last year, AJPH hit a milestone. The article by Broniatowski et al., “Weaponized Health Communication: Twitter Bots and Russian Trolls Amplify the Vaccine Debate” ([bit.ly/2TnBA8f](http://bit.ly/2TnBA8f)), published in the October issue was the 18th—among millions—most read academic article of 2018, according to Altmetric ([bit.ly/2QKpR1k](http://bit.ly/2QKpR1k)). To the American Public Health Association communications team, this was no surprise. When reading the article before publication, we knew it had popular appeal and scientific clout. It also fed into a hotly trending political narrative and addressed a timely public health challenge. It made a great news story. Broad interest from the media ensured that the public heard about its findings.

It also illuminated a central challenge facing us today: how can evidence-based public health messages compete against more attention-grabbing trolls, tweets, and myths, particularly when they undermine science and sow discord? Fittingly, this AJPH study, along with others, led Dictionary.com to designate “misinformation” as its 2018 word of the year ([bit.ly/2Qk1Tty](http://bit.ly/2Qk1Tty)).

Broniatowski et al. concluded that the best way for public health to push back against misinformation is to not directly confront the messengers or repeat their misinformation (or, in Internet speak, “feed the trolls”) but instead to look for other ways to assert the truth...

*VACCINES*

### **Cow-Pock Inoculation: Vindicated and Recommended From Matters of Fact**

109(5), pp. 695–697

### **Reverend Rowland Hill and a Role for Religious Leaders in Vaccine Promotion**

Joshua T. B. Williams and Abraham M. Nussbaum

109(5), pp. 697–698

## **American Journal of Tropical Medicine and Hygiene**

Volume 100, Issue 4, 2019

<http://www.ajtmh.org/content/journals/14761645/100/4>

[Reviewed earlier]

## **Annals of Internal Medicine**

16 April 2019 Vol: 170, Issue 8

<http://annals.org/aim/issue>

[Reviewed earlier]

### **BMC Cost Effectiveness and Resource Allocation**

<http://resource-allocation.biomedcentral.com/>

(Accessed 27 Apr 2019)

[No new digest content identified]

### **BMJ Global Health**

March 2019 - Volume 4 - 2

<https://gh.bmj.com/content/4/2>

[Reviewed earlier]

### **BMC Health Services Research**

<http://www.biomedcentral.com/bmchealthservres/content>

(Accessed 27 Apr 2019)

[No new digest content identified]

### **BMC Infectious Diseases**

<http://www.biomedcentral.com/bmcinfectdis/content>

(Accessed 27 Apr 2019)

*Research article*

**[Being unvaccinated and having a contact history increased the risk of measles infection during an outbreak: a finding from measles outbreak investigation in rural district of Ethiopia](#)**

*Measles is one of the most contagious diseases caused by an acute viral illness called Morbillivirus that usually occurs as an outbreak in low-income countries. As of May 2016 measles suspected outbreak was re...*

Authors: Abadi Girmay and Abel Fekadu Dadi

Citation: BMC Infectious Diseases 2019 19:345

Published on: 25 April 2019

*Research article*

**[Factors associated with self-reported non-completion of the hepatitis B vaccine series in men who have sex with men in Brazil](#)**

*The objective of the present study was to analyze the factors associated with non-completion of the hepatitis B vaccine series among men who have sex with men and use geosocial dating apps in Brazil.*

Authors: Artur Acelino Francisco Luz Nunes Queiroz, Álvaro Francisco Lopes de Sousa, Matheus Costa Brandão Matos, Telma Maria Evangelista de Araújo, Sandra Brignol, Renata Karina Reis, Elucir Gir and Maria Eliete Batista Moura

Citation: BMC Infectious Diseases 2019 19:335

Published on: 23 April 2019

### **BMC Medical Ethics**

<http://www.biomedcentral.com/bmcmedethics/content>

(Accessed 27 Apr 2019)

[No new digest content identified]

### **BMC Medicine**

<http://www.biomedcentral.com/bmcmmed/content>

(Accessed 27 Apr 2019)

*Research article*

#### **[Population-level mathematical modeling of antimicrobial resistance: a systematic review](#)**

*Mathematical transmission models are increasingly used to guide public health interventions for infectious diseases, particularly in the context of emerging pathogens; however, the contribution of modeling to ...*

Authors: Anna Maria Niewiadomska, Bamini Jayabalasingham, Jessica C. Seidman, Lander Willem, Bryan Grenfell, David Spiro and Cecile Viboud

Citation: BMC Medicine 2019 17:81

Published on: 24 April 2019

### **BMC Pregnancy and Childbirth**

<http://www.biomedcentral.com/bmcpregnancychildbirth/content>

(Accessed 27 Apr 2019)

[No new digest content identified]

### **BMC Public Health**

<http://bmcpublichealth.biomedcentral.com/articles>

(Accessed 27 Apr 2019)

*Research article*

#### **[How did Ebola information spread on twitter: broadcasting or viral spreading?](#)**

*Information and emotions towards public health issues could spread widely through online social networks. Although aggregate metrics on the volume of information diffusion are available, we know little about h...*

Authors: Hai Liang, Isaac Chun-Hai Fung, Zion Tsz Ho Tse, Jingjing Yin, Chung-Hong Chan, Laura E. Pechta, Belinda J. Smith, Rossmory D. Marquez-Lamed, Martin I. Meltzer, Keri M. Lubell and King-Wa Fu

Citation: BMC Public Health 2019 19:438

Published on: 25 April 2019

### **BMC Research Notes**

<http://www.biomedcentral.com/bmcresnotes/content>

(Accessed 27 Apr 2019)

[No new digest content identified]

### **BMJ Open**

April 2019 - Volume 9 - 4

<http://bmjopen.bmj.com/content/current>

[Reviewed earlier]

**Bulletin of the World Health Organization**

Volume 97, Number 4, April 2019, 245-308

<https://www.who.int/bulletin/volumes/97/4/en/>

[Reviewed earlier]

**Child Care, Health and Development**

Volume 45, Issue 3 Pages: 313-472 May 2019

<https://onlinelibrary.wiley.com/toc/13652214/current>

[Reviewed earlier]

**Clinical Therapeutics**

April 2019 Volume 41, Issue 4, p605-790

<http://www.clinicaltherapeutics.com/current>

[New issue; No digest content identified]

**Clinical Trials**

Volume 16 Issue 2, April 2019

<https://journals.sagepub.com/toc/ctja/16/2>

[Reviewed earlier]

**Conflict and Health**

<http://www.conflictandhealth.com/>

[Accessed 27 Apr 2019]

[No new digest content identified]

**Contemporary Clinical Trials**

Volume 79 Pages 1-122 (April 2019)

<https://www.sciencedirect.com/journal/contemporary-clinical-trials/vol/79/suppl/C>

[Reviewed earlier]

**Current Opinion in Infectious Diseases**

April 2019 - Volume 32 - Issue 2

<https://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx>

[Reviewed earlier]

**Developing World Bioethics**

Volume 19, Issue 1 Pages: 1-60 March 2019

<https://onlinelibrary.wiley.com/toc/14718847/current>

[Reviewed earlier]

### **Development in Practice**

Volume 29, Issue 4, 2019

<http://www.tandfonline.com/toc/cdip20/current>

[New issue; No digest content identified]

### **Disasters**

Volume 43, Issue 2 Pages: 219-455 April 2019

<https://onlinelibrary.wiley.com/toc/14677717/current>

[Reviewed earlier]

### **EMBO Reports**

Volume 20, Number 4 01 April 2019

<http://embor.embopress.org/content/20/4?current-issue=y>

[Reviewed earlier]

### **Emerging Infectious Diseases**

Volume 25, Number 4—April 2019

<http://wwwnc.cdc.gov/eid/>

[Reviewed earlier]

### **Epidemics**

Pages 1-134 (March 2019)

<https://www.sciencedirect.com/journal/epidemics/vol/26/suppl/C>

[Reviewed earlier]

### **Epidemiology and Infection**

Volume 147 - 2019

<https://www.cambridge.org/core/journals/epidemiology-and-infection/latest-issue>

[Reviewed earlier]

### **Ethics & Human Research**

Volume 41, Issue 2 Pages: 1-40 March-April 2019

<https://onlinelibrary.wiley.com/journal/25782363>

***The Scientific Value and Validity of Research***

[Reviewed earlier]

### **The European Journal of Public Health**

Volume 29, Issue 2, April 2019



<https://academic.oup.com/eurpub/issue/29/2>  
[Reviewed earlier]

### **Genome Medicine**

<https://genomemedicine.biomedcentral.com/articles>  
[Accessed 24 Nov 2018]  
[No new digest content identified]

### **Global Health Action**

Volume 11, 2018 – Issue 1  
<https://www.tandfonline.com/toc/zgha20/11/1?nav=tocList>  
[Reviewed earlier]

### **Global Health: Science and Practice (GHSP)**

Vol. 7, No. 1 March 22, 2019  
<http://www.ghspjournal.org/content/current>  
[Reviewed earlier]

### **Global Public Health**

Volume 14, 2019 Issue 5  
<http://www.tandfonline.com/toc/rgph20/current>  
[Reviewed earlier]

### **Globalization and Health**

<http://www.globalizationandhealth.com/>  
[Accessed 24 Nov 2018]  
[No new digest content identified]

### **Health Affairs**

Vol. 38 , No. 4 March 2019  
<https://www.healthaffairs.org/toc/hlthaff/current>  
***Physicians, Medicare & More***  
<http://www.tandfonline.com/toc/cdip20/current>  
[New issue; No digest content identified]

### **Health and Human Rights**

Volume 20, Issue 2, December 2018  
<https://www.hhrjournal.org/volume-20-issue-2-december-2018/>  
***Issue 20.2 features a special section: Special Section on Human Rights and the Social Determinants of Health and a General Papers section***  
[Reviewed earlier]

### **Health Economics, Policy and Law**

Volume 14 - Special Issue 2 - April 2019

<https://www.cambridge.org/core/journals/health-economics-policy-and-law/latest-issue>

#### ***SPECIAL ISSUE: Frontiers of Health Policy Research***

If the enhancement of human freedom is both the main object and the primary means to development (Sen, [1999](#)), then good individual and population health are both ends and means to development and freedom in all countries, regardless of their current ranking on the Human Development Index or other indexes on wealth, prosperity and well-being...

This special issue on the 'frontiers in health policy research' focuses attention on three distinct areas of inquiry. One set of papers analyses efforts to improve the quality of care and increase the value of care that health systems purchase. A second set of articles focuses on issues of health behaviour and social determinants of health. Finally, the third set of articles presents differing views on how to predict the adequacy of supply of medical professionals. The range of these articles illustrates, not only the exciting breadth of health policy research, but the degree to which scholars within this field are addressing issues of high importance to policy makers around the world. We think it is fair to claim that all of the articles address issues that are on the 'frontier' of health policy in the sense that they attempt to provide answers to questions that policy makers around the world are currently grappling with...

### **Health Equity**

Volume 2, Issue 1 / December 2018

<https://www.liebertpub.com/toc/heq/2/1>

[Reviewed earlier]

### **Health Policy and Planning**

Volume 33, Issue 10, 1 December 2018

<https://academic.oup.com/heapol/issue/33/10>

[Reviewed earlier]

### **Health Research Policy and Systems**

<http://www.health-policy-systems.com/content>

[Accessed 27 Apr 2019]

[No new digest content identified]

### **Humanitarian Exchange Magazine**

Number 74, February 2019

<https://odihpn.org/magazine/communication-community-engagement-humanitarian-response/>

#### ***Communication and community engagement in humanitarian response***

This edition of Humanitarian Exchange, co-edited with Charles-Antoine Hofmann from the UN Children's Fund (UNICEF), focuses on communication and community engagement. Despite promising progress, coherent and coordinated information is still not provided systematically to affected communities, and humanitarian responses take insufficient account of the views and

feedback of affected people. In 2017, UNICEF, the International Federation of Red Cross and Red Crescent Societies (IFRC), the UN Office for the Coordination of Humanitarian Affairs (OCHA) and other partners came together under the auspices of the Communicating with Disaster Affected Communities (CDAC) Network to establish the Communication and Community Engagement (CCE) initiative, which aims to organise a collective service for communications and community engagement. The articles in this edition take stock of efforts to implement this initiative.

Drawing on lessons from 23 Peer 2 Peer Support missions, [Alice Chatelet and Meg Sattler](#) look at what's needed to integrate CCE into the humanitarian architecture. [Viviane Lucia Fluck and Dustin Barter](#) discuss the institutional and practical barriers to implementing community feedback mechanisms. [Bronwyn Russel](#) analyses the performance of the Nepal inter-agency common feedback project; [Justus Olielo and Charles-Antoine Hofmann](#) outline the challenges of establishing common services in Yemen; and [Gil Francis Arevalo](#) reports on community engagement in preparedness and response in the Philippines. [Ian McClelland and Frances Hill](#) discuss emerging findings from a strategic partnership in the Philippines between the Humanitarian Innovation Fund and the Asian Disaster Reduction and Response Network.

[Charlotte Lancaster](#) describes how call centres in Afghanistan and Iraq are enhancing two-way communication with crisis-affected people. [Mia Marzotto](#) from Translators without Borders reflects on the importance of language and translation in communication and community engagement, and [Ombretta Baggio and colleagues](#) report on efforts to bring community perspectives into decision-making during an Ebola outbreak in the Democratic Republic of Congo. [Ayo Degett](#) highlights emerging findings from a Danish Refugee Council project on participation in humanitarian settings, and [Jeff Carmel and Nick van Praag](#) report on the Listen Learn Act (LLA) project. [Geneviève Cyvoct and Alexandra T. Warner](#) write on an innovative common platform to track the views of affected people in Chad. The edition ends with an article by [Stewart Davies](#) on collective accountability in the response to the Central Sulawesi earthquake.

### **Human Vaccines & Immunotherapeutics** (formerly Human Vaccines)

Volume 15, Issue 3, 2019

<http://www.tandfonline.com/toc/khvi20/current>

[Reviewed earlier]

### **Infectious Agents and Cancer**

<http://www.infectagentscancer.com/content>

[Accessed 27 Apr 2019]

[No new digest content identified]

### **Infectious Diseases of Poverty**

<http://www.idpjournals.com/content>

[Accessed 27 Apr 2019]

[No new digest content identified]

**International Health**

Volume 11, Issue 3, May 2019

<http://inthealth.oxfordjournals.org/content/current>

[Reviewed earlier]

**International Journal of Community Medicine and Public Health**

Vol 6, No 5 (2019) May 2019

<https://www.ijcmph.com/index.php/ijcmph/issue/view/50>

*Original Research Articles*

**[Delivery point immunization in tertiary care hospital in Eastern India and challenges](#)**

Bharati Das, Puspanjali Khuntia, Lucy Das, Jayashree Pattnaik

DOI: [10.18203/2394-6040.ijcmph20191467](https://doi.org/10.18203/2394-6040.ijcmph20191467) Bharati Das, Puspanjali Khuntia, Lucy Das, Jayashree Pattnaik

**[A retrospective study on timeliness of vaccination among children aged 0 to 23 months in a rural area of Pondicherry](#)**

Padmavathi Subbiah, Anandaraj Rajagopal, Vijay Kantilal Chavada, Kavita P. Vasudevan

DOI: [10.18203/2394-6040.ijcmph20191831](https://doi.org/10.18203/2394-6040.ijcmph20191831)

**International Journal of Epidemiology**

Volume 48, Issue 2, April 2019

<https://academic.oup.com/ije/issue/48/2>

[Reviewed earlier]

**International Journal of Human Rights in Healthcare**

Volume 12 Issue 2 2019

<https://www.emeraldinsight.com/toc/ijhrh/12/2>

[Reviewed earlier]

**International Journal of Infectious Diseases**

March 2019 Volume 80, Supplement, S1-S84

[https://www.ijidonline.com/issue/S1201-9712\(19\)X0005-3](https://www.ijidonline.com/issue/S1201-9712(19)X0005-3)

[Reviewed earlier]

**JAMA**

April 23/30, 2019, Vol 321, No. 16, Pages 1547-1642

<http://jama.jamanetwork.com/issue.aspx>

*Editorial*

**[Lowering Cost and Increasing Access to Drugs Without Jeopardizing Innovation](#)**

Robert M. Califf, MD; Andrew Slavitt, MBA

*[Initial text]*

US drug costs have reached unacceptable and unsustainable levels. Evidence shows that “financial toxicity” arising from drug costs and other medical expenses is reducing financial security for many families<sup>1</sup> and prompting difficult choices, as patients defer or forgo therapies they cannot afford.<sup>2</sup> In stark contrast, comparable countries negotiate drug prices and use drugs more effectively. Recent data suggest that other high-income countries have an average life expectancy approximately 3 to 5 years longer than that of the United States, which ranks last among high-income countries and is losing ground compared with peer nations.<sup>3</sup> Although drug prices account for only part of these trends, they nevertheless add to disparities that dominate the trajectories of US health outcomes.

An effective policy solution to this problem must satisfy the core requirements of reducing drug costs and increasing access to beneficial drugs, while continuing to incentivize development of new therapies. The path forward requires a sustainable, fair payment system in which drug prices reflect the value provided and reward innovations that improve outcomes. Four Viewpoints in this issue of JAMA<sup>4-7</sup> recommend different but overlapping approaches for achieving these goals...

### **JAMA Pediatrics**

April 2019, Vol 173, No. 4, Pages 303-404

<http://archpedi.jamanetwork.com/issue.aspx>

[Reviewed earlier]

### **JBIR Database of Systematic Review and Implementation Reports**

April 2019 - Volume 17 - Issue 4

<http://journals.lww.com/jbisrir/Pages/currenttoc.aspx>

[Reviewed earlier]

### **Journal of Adolescent Health**

April 2019 Volume 64, Issue 4, p419-546

[https://www.jahonline.org/issue/S1054-139X\(18\)X0006-8](https://www.jahonline.org/issue/S1054-139X(18)X0006-8)

[Reviewed earlier]

### **Journal of Community Health**

Volume 44, Issue 2, April 2019

<https://link.springer.com/journal/10900/44/2>

[Reviewed earlier]

### **Journal of Empirical Research on Human Research Ethics**

Volume 14 Issue 2, April 2019

<http://journals.sagepub.com/toc/jre/current>

[Reviewed earlier]

### **Journal of Epidemiology & Community Health**

April 2019 - Volume 73 - 4  
<https://jech.bmj.com/content/73/4>  
[Reviewed earlier]

**Journal of Evidence-Based Medicine**

Volume 12, Issue 1 Pages: 1-88 February 2019  
<https://onlinelibrary.wiley.com/toc/17565391/current>  
[Reviewed earlier]

**Journal of Global Ethics**

Volume 15, Issue 1, 2019  
<http://www.tandfonline.com/toc/rjge20/current>  
***Special Issue: Indian Global Ethics Initiative***  
*introduction*

**An Indian global ethics initiative**

Shashi Motilal & Jay Drydyk

Pages: 1-5

Published online: 22 Apr 2019

**ABSTRACT**

In what sense must global ethics be global? In one sense, it must deal with global issues. In another, it must not be parochial but inclusive of normative views from around the world. So far, global ethics has met the first standard much better than the second. Authors based in the global South contribute approximately 5% of the internationally published research on global ethics. With this in mind, the co-editors of this special issue sought to bring more perspectives, experiences, and authors from India into the international global ethics conversation, and so they launched the Indian Global Ethics Initiative. Their first step, this special issue, presents Indian experience and authors on topics including urban development, care ethics, women's empowerment, fair trade, distorted policy research, poverty, and health. Much of this work is grounded by the authors' experience in policy-making and advocacy for social and global justice. The co-editors invite contact from interested readers who would like to join and continue this Indian Global Ethics Initiative, as well as readers who would like to take similar initiatives in other regions.

**Journal of Health Care for the Poor and Underserved (JHCPU)**

Volume 30, Number 1, February 2019  
<https://muse.jhu.edu/issue/39946>  
***Black History Month Themes***  
[Reviewed earlier]

**Journal of Immigrant and Minority Health**

Volume 21, Issue 2, April 2019  
<https://link.springer.com/journal/10903/21/2>  
[Reviewed earlier]

**Journal of Immigrant & Refugee Studies**

Volume 17, 2019\_ Issue 1

<https://www.tandfonline.com/toc/wimm20/current>

***Special Issue: Social Policies as a Tool of Migration Control***

[Reviewed earlier]

**Journal of Infectious Diseases**

Volume 217, Issue 11, 27 Apr 2019

<https://academic.oup.com/jid/issue/217/1>

[Reviewed earlier]

**Journal of Medical Ethics**

April 2019 - Volume 45 - 4

<http://jme.bmj.com/content/current>

[Reviewed earlier]

**Journal of Medical Internet Research**

Vol 21, No 3 (2019): March

<https://www.jmir.org/2019/3>

[Reviewed earlier]

**Journal of Medical Microbiology**

Volume 68, Issue 3, March 2019

<https://jmm.microbiologyresearch.org/content/journal/jmm/68/3>

[Reviewed earlier]

**Journal of Patient-Centered Research and Reviews**

Volume 6, Issue 1 (2019)

<https://digitalrepository.aurorahealthcare.org/jpcrr/>

[Reviewed earlier]

**Journal of the Pediatric Infectious Diseases Society (JPIDS)**

Volume 8, Issue 1, March 2019

<https://academic.oup.com/jpids/issue>

[Reviewed earlier]

**Journal of Pediatrics**

April 2019 Volume 207, p1-270

<http://www.jpeds.com/current>

[Reviewed earlier]

**Journal of Pharmaceutical Policy and Practice**

<https://joppp.biomedcentral.com/>

[Accessed 27 Apr 2019]

[No new digest content identified]

**Journal of Public Health Management & Practice**

March/April 2019 - Volume 25 - Issue 2

<https://journals.lww.com/jphmp/pages/currenttoc.aspx>

[Reviewed earlier]

**Journal of Public Health Policy**

Volume 40, Issue 1, March 2019

<https://link.springer.com/journal/41271/40/1>

[Reviewed earlier]

**Journal of Refugee & Global Health**

Volume 2, Issue 1 (2019)

<https://ir.library.louisville.edu/rgh/>

[Reviewed earlier]

**Journal of the Royal Society – Interface**

6 February 2019 Volume 16Issue 151

<https://royalsocietypublishing.org/toc/rsif/16/151>

[Reviewed earlier]

**Journal of Travel Medicine**

Volume 26, Issue 1, 2019

<https://academic.oup.com/jtm/issue/26/1>

[Reviewed earlier]

**Journal of Virology**

April 2019; Volume 93, Issue 8

<http://jvi.asm.org/content/current>

[Reviewed earlier]

**The Lancet**

Apr 27, 2019 Volume 393 Number 10182 p1669-1772, e39

<https://www.thelancet.com/journals/lancet/issue/current>

*Editorial*



## **Measles eradication: a goal within reach, slipping away**

The Lancet

*[See Milestones – Measles above for full text]*

### **Lancet Global Health**

Apr 2019 Volume 7 Number 4 e385-e532

<http://www.thelancet.com/journals/langlo/issue/current>

*Editorial*

### **The true meaning of leaving no one behind**

The Lancet Global Health

Sometimes it is important to go back to basics. For human interaction, one of the basics is language, the system of communication that, when applied at its best, allows us to understand each other, share, cooperate, and pull each other towards a better place. When on a collective journey towards a common objective such as the Sustainable Development Goals, with a rallying cry of “leaving no one behind” and a central aim of “reaching the furthest behind first”, this system of communication is fundamental to move beyond just the rhetorical: to be truly reached, the furthest one behind will need to understand what she is being told, and most likely, that exchange will have to be done in her own language. That principle should apply to all aspects of development, including global health.

With roughly 7000 living languages in the world, miscommunication is inevitable, but there are times and places when particular care should be taken to ensure that the message is clear and fully understood. Take the highly volatile situation of Ebola in eastern Democratic Republic of the Congo (DRC) for instance. Since the outbreak was declared in August 2018, there have been over 1000 confirmed and probable cases in North Kivu and Ituri provinces. Because the trauma of conflict has compounded the impact of the outbreak on the population, community engagement and ownership of the response are particularly important in the DRC. Last month, Translators without Borders released the [results of a rapid study](#) evaluating the effectiveness of risk communication materials on Ebola used in North Kivu. The results are striking: they show that materials used for the response—posters, brochures, and consent forms for the Ebola vaccine, some in French, some in standard or local Congolese Swahili—are not fully understood. Basic vocabulary in French related to Ebola was not recognised in focus groups and half of the participants misinterpreted a poster inviting the sick to present to the nearest health centre as the complete opposite, that they would not be welcome there. Consent forms used for the Ebola vaccine were also generally misunderstood, as they contained words in standard Swahili, French, and English that were not known to the participants, raising further ethical issues. This study presents the epitome of where and when the basics of language should be better applied to reach “the furthest behind” in global health.

Global health research in general should concern itself with language. As in most scientific fields, English is established as the dominant tongue. Some will rightfully argue that researchers need a lingua franca, a common language in which to communicate, but English is not strictly that: for some (indeed, a minority) it is their mother tongue, but for the rest it is a second language, one that can be mastered at varying levels of fluency, or not mastered at all. That clearly implies that when it comes to the handiwork of research—the searching for funds, the publishing, the reading, the presenting—not everyone is on the same plane, and some are left behind. A Comment published this week presents the reflections and ideas of a group of

francophone researchers during a workshop at the Africa Health Agenda International Conference (AHAIC) in Kigali, Rwanda, last month on this very issue. Our readers will appreciate that we could not in good conscience publish this Comment in any language other than French, and will, we hope, take the extra step of accessing the English translation in the supplementary material if needed. The main message is that linguistic isolation and the barriers it creates are real and deeply ingrained, but also that there is a way forward. The solutions will require more consideration of the needs of different linguistic groups, the creation of support networks, and more linguistic collaboration in general. One initiative that fits neatly within these criteria is the [Science and Language Mobility Scheme Africa](#), led by the African Academy of Sciences in partnership with the Wellcome Trust and Institut Pasteur. This brand-new programme funds research done by anglophone, francophone, and maybe soon lusophone researchers in language regions other than their own, in order to strengthen scientific collaboration while building language skills and improving cultural understanding between researchers from different linguistic backgrounds.

Such efforts are to be applauded. Leaving no one behind will require more than glancing back from a position of linguistic power and hoping everyone follows. It will require everyone, journals included, to reach out to the other and find concrete solutions to this most basic dilemma.

*Comment*

**[Are expensive vaccines the best investment in low-income and middle-income countries?](#)**

Lone Simonsen, Maarten van Wijhe, Robert Taylor

*[Initial text]*

In a new study in *The Lancet Global Health*, John Ojal and colleagues project that the use of ten-valent pneumococcal conjugate vaccine (PCV10) will be cost-effective in Kenya after international donor support for vaccine programmes ends in around 2027. Until now, Kenya has relied on funding from Gavi, the international vaccine alliance, to fund its PCV programme. But because Gavi withdraws support from countries as their economies grow, Kenya will have to bear the full \$9 per child cost for a three-dose course of PCVs starting in 2027. For Kenya, where annual per capita actual expenditure for health is around \$70 (about 5% of GDP), that is not a trivial cost.

Kenya is not alone in having to decide whether expensive vaccines are worth the money, as many other lower-middle-income countries with growing economies will soon lose international support. For these countries, careful evaluation of the cost-effectiveness and affordability of such programmes, and how they hold up against alternative investments in population health, are essential. The current study is a much-appreciated effort to provide important insights to countries around the world as they struggle to decide how best to spend scarce resources...

*Articles*

**[Sustaining pneumococcal vaccination after transitioning from Gavi support: a modelling and cost-effectiveness study in Kenya](#)**

John Ojal, Ulla Griffiths, Laura L Hammitt, Ifedayo Adetifa, Donald Akech, Collins Tabu, J Anthony G Scott, Stefan Flasche

*Summary*

Background

In 2009, Gavi, the World Bank, and donors launched the pneumococcal Advance Market Commitment, which helped countries access more affordable pneumococcal vaccines. As many low-income countries begin to reach the threshold at which countries transition from Gavi support to self-financing (3-year average gross national income per capita of US\$1580), they will need to consider whether to continue pneumococcal conjugate vaccine (PCV) use at full cost or to discontinue PCV in their childhood immunisation programmes. Using Kenya as a case study, we assessed the incremental cost-effectiveness of continuing PCV use.

#### Methods

In this modelling and cost-effectiveness study, we fitted a dynamic compartmental model of pneumococcal carriage to annual carriage prevalence surveys and invasive pneumococcal disease (IPD) incidence in Kilifi, Kenya. We predicted disease incidence and related mortality for either continuing PCV use beyond 2022, the start of Kenya's transition from Gavi support, or its discontinuation. We calculated the costs per disability-adjusted life-year (DALY) averted and associated 95% prediction intervals (PI).

#### Findings

We predicted that if PCV use is discontinued in Kenya in 2022, overall IPD incidence will increase from 8·5 per 100 000 in 2022, to 16·2 per 100 000 per year in 2032. Continuing vaccination would prevent 14 329 (95% PI 6130–25 256) deaths and 101 513 (4386–196 674) disease cases during that time. Continuing PCV after 2022 will require an estimated additional US\$15·8 million annually compared with discontinuing vaccination. We predicted that the incremental cost per DALY averted of continuing PCV would be \$153 (95% PI 70–411) in 2032.

#### Interpretation

Continuing PCV use is essential to sustain its health gains. Based on the Kenyan GDP per capita of \$1445, and in comparison to other vaccines, continued PCV use at full costs is cost-effective (on the basis of the assumption that any reduction in disease will translate to a reduction in mortality). Although affordability is likely to be a concern, our findings support an expansion of the vaccine budget in Kenya.

#### Funding

Wellcome Trust and Gavi, the Vaccine Alliance.

### **Lancet Infectious Diseases**

May 2019 Volume 19 Number 5 p449-558, e148-e186

<http://www.thelancet.com/journals/laninf/issue/current>

#### *Comment*

#### **Ebola: public trust, intermediaries, and rumour in the DR Congo**

Joe Trapido

#### **A new social sciences network for infectious threats**

Tamara Giles-Vernick, et al

#### *Articles*

#### **Immunogenicity and reactogenicity of ten-valent versus 13-valent pneumococcal conjugate vaccines among infants in Ho Chi Minh City, Vietnam: a randomised controlled trial**

Beth Temple, Nguyen Trong Toan, Vo Thi Trang Dai, Kathryn Bright, Paul Vincent Licciardi, Rachel Ann Marimla, Cattram Duong Nguyen, Doan Y Uyen, Anne Balloch, Tran Ngoc Huu, Edward Kim Mulholland

**Institutional trust and misinformation in the response to the 2018–19 Ebola outbreak in North Kivu, DR Congo: a population-based survey**

Patrick Vinck, Phuong N Pham, Kenedy K Bindu, Juliet Bedford, Eric J Nilles

*Summary*

**Background**

The current outbreak of Ebola in eastern DR Congo, beginning in 2018, emerged in a complex and violent political and security environment. Community-level prevention and outbreak control measures appear to be dependent on public trust in relevant authorities and information, but little scholarship has explored these issues. We aimed to investigate the role of trust and misinformation on individual preventive behaviours during an outbreak of Ebola virus disease (EVD).

**Methods**

We surveyed 961 adults between Sept 1 and Sept 16, 2018. We used a multistage sampling design in Beni and Butembo in North Kivu, DR Congo. Of 412 avenues and cells (the lowest administrative structures; 99 in Beni and 313 in Butembo), we randomly selected 30 in each city. In each avenue or cell, 16 households were selected using the WHO Expanded Programme on Immunization's random walk approach. In each household, one adult (aged  $\geq 18$  years) was randomly selected for interview. Standardised questionnaires were administered by experienced interviewers. We used multivariate models to examine the intermediate variables of interest, including institutional trust and belief in selected misinformation, with outcomes of interest related to EVD prevention behaviours.

**Findings**

Among 961 respondents, 349 (31.9%, 95% CI 27.4–36.9) trusted that local authorities represent their interest. Belief in misinformation was widespread, with 230 (25.5%, 21.7–29.6) respondents believing that the Ebola outbreak was not real. Low institutional trust and belief in misinformation were associated with a decreased likelihood of adopting preventive behaviours, including acceptance of Ebola vaccines (odds ratio 0.22, 95% CI 0.21–0.22, and 1.40, 1.39–1.42) and seeking formal health care (0.06, 0.05–0.06, and 1.16, 1.15–1.17).

**Interpretation**

The findings underscore the practical implications of mistrust and misinformation for outbreak control. These factors are associated with low compliance with messages of social and behavioural change and refusal to seek formal medical care or accept vaccines, which in turn increases the risk of spread of EVD.

**Funding**

The Harvard Humanitarian Initiative Innovation Fund.

*Review*

**Venezuela's humanitarian crisis, resurgence of vector-borne diseases, and implications for spillover in the region**

Maria E Grillet et al,

*Summary*

In the past 5–10 years, Venezuela has faced a severe economic crisis, precipitated by political instability and declining oil revenue. Public health provision has been affected particularly. In this Review, we assess the impact of Venezuela's health-care crisis on vector-borne diseases, and the spillover into neighbouring countries. Between 2000 and 2015, Venezuela witnessed a 359% increase in malaria cases, followed by a 71% increase in 2017 (411,586 cases) compared

with 2016 (240 613). Neighbouring countries, such as Brazil, have reported an escalating trend of imported malaria cases from Venezuela, from 1538 in 2014 to 3129 in 2017. In Venezuela, active Chagas disease transmission has been reported, with seroprevalence in children (<10 years), estimated to be as high as 12.5% in one community tested (n=64). Dengue incidence increased by more than four times between 1990 and 2016. The estimated incidence of chikungunya during its epidemic peak is 6975 cases per 100 000 people and that of Zika virus is 2057 cases per 100,000 people. The re-emergence of many vector-borne diseases represents a public health crisis in Venezuela and has the possibility of severely undermining regional disease elimination efforts. National, regional, and global authorities must take action to address these worsening epidemics and prevent their expansion beyond Venezuelan borders.

### **Lancet Respiratory Medicine**

Apr 2019 Volume 7 Number 4 p283-364, e13-e15

<http://www.thelancet.com/journals/lanres/issue/current>

[Reviewed earlier]

### **Maternal and Child Health Journal**

Volume 23, Issue 4, April 2019

<https://link.springer.com/journal/10995/23/4>

[Reviewed earlier]

### **Medical Decision Making (MDM)**

Volume 39 Issue 3, April 2019

<http://mdm.sagepub.com/content/current>

[Reviewed earlier]

### **The Milbank Quarterly**

*A Multidisciplinary Journal of Population Health and Health Policy*

Volume 97, Issue 1 Pages: 1-367 March 2019

<https://onlinelibrary.wiley.com/toc/14680009/current>

[Reviewed earlier]

### **Nature**

Volume 568 Issue 7753, 25 April 2019

[http://www.nature.com/nature/current\\_issue.html](http://www.nature.com/nature/current_issue.html)

*World View* | 24 April 2019

#### **[Rein in the four horsemen of irreproducibility](#)**

Dorothy Bishop describes how threats to reproducibility, recognized but unaddressed for decades, might finally be brought under control.

### **Nature Biotechnology**

Volume 37 Issue 4, April 2019

<https://www.nature.com/nbt/volumes/37/issues/4>  
[New issue; No digest content identified]

### **Nature Genetics**

Volume 51 Issue 4, April 2019  
<https://www.nature.com/ng/volumes/51/issues/4>  
[Reviewed earlier]

### **Nature Medicine**

Volume 25 Issue 4, April 2019  
<https://www.nature.com/nm/volumes/25/issues/4>  
[Reviewed earlier]

### **Nature Reviews Genetics**

Volume 20 Issue 5, May 2019  
<https://www.nature.com/nrg/volumes/20/issues/4>  
*Comment* | 14 March 2019

#### **[Balancing uncertainty with patient autonomy in precision medicine](#)**

Variants of unknown significance (VUS) are genetic variants whose association with disease risk is unknown. The authors posit that VUS should not inform clinical decision-making as the benefits of returning this genetic information to patients undergoing genetic testing are outweighed by the potential for harm.

*By the nature of their unknown pathogenicity, variants of unknown significance (VUS) should not inform clinical decisions for genetic carrier testing; nevertheless, VUS are increasingly returned to patients. We argue that the benefits of returning VUS to patients are outweighed by the potential for individual and health-care system-level harm.*

Samantha Pollard, Sophie Sun & Dean A. Regier

### **Nature Reviews Immunology**

Volume 19 Issue 4, April 2019  
<https://www.nature.com/nri/volumes/19/issues/4>  
[Reviewed earlier]

### **New England Journal of Medicine**

April 25, 2019 Vol. 380 No. 17  
<http://www.nejm.org/toc/nejm/medical-journal>  
[New issue; No digest content identified]

### **Pediatrics**

April 2019, VOLUME 143 / ISSUE 4  
<https://pediatrics.aappublications.org/content/143/4?current-issue=y>  
[Reviewed earlier]

## **Pharmaceutics**

Volume 11, Issue 3 (March 2019)

<https://www.mdpi.com/1999-4923/11/3>

[Reviewed earlier]

## **PharmacoEconomics**

April 2019, Issue 4, Pages 447-625

<https://link.springer.com/journal/volumesAndIssues/40273>

***Themed Issue : Measuring Family Spillover Effects of Illness***

[Reviewed earlier]

## **PharmacoEconomics & Outcomes News**

Volume 826, Issue 1, April 2019

<https://link.springer.com/journal/40274/826/1>

[Reviewed earlier]

## **PLoS Genetics**

<https://journals.plos.org/plosgenetics/>

[No new digest content identified]

## **PLoS Medicine**

<http://www.plosmedicine.org/>

(Accessed 27 Apr 2019)

*Perspective*

**[Tuberculosis vaccines: Rising opportunities](#)**

Johan Vekemans, Katherine L. O'Brien, Jeremy Farrar

| published 23 Apr 2019 PLOS Medicine

<https://doi.org/10.1371/journal.pmed.1002791>

A vaccine preventing pulmonary tuberculosis (TB) in adults is needed but has long been considered an elusive goal. Times are changing in the field of TB vaccines, though, with recent results boosting confidence in the feasibility of a TB vaccine with potential as a decisive tool in the fight against TB.

Mycobacterium tuberculosis (Mtb), the causative agent of TB, is the leading cause of death from any single infectious pathogen. In 2017, an estimated 10 million people developed TB, and 1.6 million people died of the disease. Approximately 1.7 billion people—23% of the world's population—have latent TB infection (LTBI) and carry the risk of developing TB during their lifetime. The emergence of Mtb strains resistant to TB drugs causes a major growing burden of hard-to-treat infections. An estimated 558,000 people developed drug-resistant TB in 2017, 82% of which were multidrug-resistant cases; 230,000 deaths were due to drug-resistant TB [1].



Important efforts are being directed to TB control through the WHO End TB Strategy, which set ambitious targets for reduction of disease burden. However, current trends fall well short of those needed to meet the goals [1]. Last year, the United Nations High-Level Meeting on TB renewed the commitment to fight TB, but it is clear that current approaches are insufficient, highlighting the importance of research and development for new tools [2]. Disease impact and health-economic modelling has shown the value of a vaccine that would prevent pulmonary TB in adults not only for those immunized but also by reducing transmission to others [3].

Such a vaccine, long considered an elusive goal, may now be close at hand, given new clinical trial results from a Phase 2b trial in South Africa and Zambia [4]. Two doses of the M72/AS01E, an adjuvanted fusion protein construct based on two TB antigens, was shown to provide 54% (90% CI 14%–75%) protection against pulmonary TB in individuals with LTBI over an average 2.3 years of follow-up. Secondary analyses, based on a limited number of cases and therefore subject to caution, suggest that there was no waning of effect over time and that protection may be highest in younger individuals. Data from follow-up through an additional year are awaited in the coming months. In this study, the point estimate of vaccine efficacy was above what had been predefined as a preferred lower target level by WHO [5].

The lack of reliable models to predict human protection in early clinical development did not allow confidence building in this product before the trial results were known, and further investments had not been planned. Decisions are now needed for financial investments to support further clinical development, progression to Phase 3 evaluation, and preparation of the downstream pathway to affordable access and use.

Various clinical development options should be considered. A vaccine with characteristics as demonstrated in the Phase 2b trial may be of significant interest in endemic regions characterized by high attack rates, where most young adults have been infected. Proof-of-concept remains to be established for people who don't have LTBI, especially for geographical regions where transmission intensity is lower. As existing results suggest the vaccine prevented the natural course of progression from infection to pulmonary disease, it would be relevant to investigate similar immunotherapeutic effects in subjects who live or lived in contact with TB patients or in subjects known to have recently converted diagnostic markers of infection.

Testing for use as a therapeutic adjunct to improve outcomes of drug treatment in TB patients should also be considered. Children, older individuals in countries where the epidemic is driven by TB reactivation [6] and specific high-risk groups such as HIV-infected people, should also be considered for evaluation in order to not be denied a potential protective intervention.

Although advancing the evaluation of M72/AS01 is now a major priority, it is not the only important progress in the TB vaccine field.

Another promising breakthrough emerged from a recent study in South Africa evaluating the effect of *Bacillus Calmette-Guérin* (BCG) revaccination in people vaccinated with BCG at birth and with no evidence of LTBI [7]. The coprimary endpoints of this trial were not achieved; however, secondary analyses suggested that BCG revaccination reduced the proportion of sustained conversion of *in vitro* markers of LTBI by 45%. The clinical significance of this new finding is unknown, especially in light of past studies that have shown no impact of BCG revaccination on TB [8–9], which formed the evidence base for WHO not recommending BCG



revaccination [10]. The risk of disseminated BCG disease in subjects with immunosuppression would constitute an important obstacle to BCG revaccination strategies in HIV and TB coendemic areas. This research signal nevertheless constitutes an important opportunity to characterize immunological mechanisms of protection against Mtb infection, and such investigations are planned.

Recent early-stage developments are also cause for optimism. As presented in a recent review, new constructs in preclinical testing include recombinant cytomegalovirus (CMV)-based candidates inducing atypical immune responses and supporting investigations in previously unexplored territory in the science of TB vaccinology; new imaging techniques allow for monitoring of TB progression in vaccinated primate models of experimental infection; attempts to develop safe human models of experimental infections are being developed; the role of the route of vaccination is being explored; and immune markers of TB risk are increasingly being identified, with the potential to inform rationale vaccine design, testing pathways, and eventually support regulatory-acceptable accelerating bridging steps [11]. The pipeline of other products in clinical development is diverse, with a variety of live-attenuated or killed mycobacteria-derived candidates (DAR-901, MTBVAC, RUTI, Vaccae, VPM001), adjuvanted recombinant proteins (H56:IC31, ID93/GLA-SE), and recombinant viral vectors (MVA85A, ChAdOx1.85A, MVA85A, Ad5 Ag85A, MVA85A-IMX313, TB/FLU-04L), progressing through human evaluation [12].

While the statements from the UN High-Level Meeting are welcome, transforming discovery and vaccine candidates into products that can have impact takes more than declarations of support. Funding levels, unfortunately, are insufficient, and the US\$1.3 billion annual funding gap in TB research needs to be filled [12]. More funding should be targeted to support TB vaccine research, which has been estimated at US\$74 million in 2017, a surprisingly low figure as compared to the US\$174 and US\$700 million allocated to, respectively, malaria and HIV vaccine R&D [13] when considering the scientific opportunity, unmet need, and investment case [14].

Progress toward TB elimination will require vigorously pursuing the potential contribution of novel TB vaccines propelled by new evidence recently made available. Advocates working on TB as a major global health problem should lead decision-makers toward this realization. The possibility to transform the opportunities into action will be a test of the collective ability of the global health community to succeed in developing and using vaccines aimed at addressing diseases disproportionately affecting the poor. The world needs better operating models supporting prompt progress from vaccine efficacy proof-of-concept to evaluation for use and impact in support of policy decision and funding for implementation. A sense of responsibility toward global health from the corporate sector manufacturing vaccines is needed as well as from the public and philanthropic sector, through the setup of functional public-private partnerships supported by innovative funding mechanisms. Opportunities are rising in the search for tools to prevent TB; let us not squander this chance. Now is the time for mobilization toward vaccine impact against TB.

### **Controlling latent TB tuberculosis infection in high-burden countries: A neglected strategy to end TB**

Gavin J. Churchyard, Sue Swindells  
Perspective | published 23 Apr 2019 PLOS Medicine  
<https://doi.org/10.1371/journal.pmed.1002787>

## **PLoS Neglected Tropical Diseases**

<http://www.plosntds.org/>

[Accessed 27 Apr 2019]

[No new digest content identified]

## **PLoS One**

<http://www.plosone.org/>

[Accessed 27 Apr 2019]

*Research Article*

### **[Influenza vaccination of pregnant women in Paris, France: Knowledge, attitudes and practices among midwives](#)**

Paul Loubet, Catherine Nguyen, Esp rie Burnet, Odile Launay

Research Article | published 25 Apr 2019 PLOS ONE

<https://doi.org/10.1371/journal.pone.0215251>

## **PLoS Pathogens**

<http://journals.plos.org/plospathogens/>

[Accessed 27 Apr 2019]

*Research Article*

### **[Detection of post-vaccination enhanced dengue virus infection in macaques: An improved model for early assessment of dengue vaccines](#)**

Maria Beatriz Borges, Renato Sergio Marchevsky, Renata Carvalho Pereira, Ygara da Silva Mendes, Luiz Gustavo Almeida Mendes, Leonardo Diniz-Mendes, Michael A. Cruz, Ouafa  Tahmaoui, S bastien Baudart, Marcos Freire, Akira Homma, Kirsten Schneider-Ohrum, David W. Vaughn, Yannick Vanloubbeeck, Clarisse Lorin, Marie-Pierre Malice, Elena Caride, Lucile Warter | published 22 Apr 2019 PLOS Pathogens

<https://doi.org/10.1371/journal.ppat.1007721>

*Abstract*

The need for improved dengue vaccines remains since the only licensed vaccine, Dengvaxia, shows variable efficacy depending on the infecting DENV type, and increases the risk of hospitalization for severe dengue in children not exposed to DENV before vaccination. Here, we developed a tetravalent dengue purified and inactivated vaccine (DPiV) candidate and characterized, in rhesus macaques, its immunogenicity and efficacy to control DENV infection by analyzing, after challenge, both viral replication and changes in biological markers associated with dengue in humans. Although DPiV elicited cross-type and long-lasting DENV-neutralizing antibody responses, it failed to control DENV infection. Increased levels of viremia/RNAemia (correlating with serum capacity at enhancing DENV infection in vitro), AST, IL-10, IL-18 and IFN- , and decreased levels of IL-12 were detected in some vaccinated compared to non-vaccinated monkeys, indicating the vaccination may have triggered antibody-dependent enhancement of DENV infection. The dengue macaque model has been considered imperfect due to the lack of DENV-associated clinical signs. However, here we show that post-vaccination enhanced DENV infection can be detected in this model when integrating several parameters, including characterization of DENV-enhancing antibodies, viremia/RNAemia, and biomarkers

relevant to dengue in humans. This improved dengue macaque model may be crucial for early assessment of efficacy and safety of future dengue vaccines.

*Author summary*

Dengue virus (DENV) is responsible for the most widespread arboviral disease affecting humans. A pre-existing suboptimal immunity to DENV is accepted as being the major risk factor for severe dengue. Thus, if vaccination does not elicit optimal DENV-specific immunity, a vaccine might, instead, increase the risk of severe dengue in vaccinated individuals, as seen with the only licensed vaccine (Dengvaxia) in children naïve to DENV at vaccination. It is thus crucial to assess dengue vaccine safety at the earliest development stages, ideally in the preclinical stage. The dengue macaque model has been used to assess preclinical efficacy of dengue vaccines, with post-challenge DENV replication as the sole efficacy endpoint. However, this model had not predicted the Dengvaxia-associated safety signals. Here we characterized, in macaques, a dengue purified and inactivated vaccine (DPIV) candidate for its immunogenicity and efficacy/safety. Using a multiparameter approach, including characterization of viral replication and biomarkers relevant to dengue/severe dengue in humans, we were able to detect vaccine-associated safety signals in this model. While these results enabled us to discontinue at an early stage the DPIV development, this improved dengue macaque model may also be instrumental for early assessment of efficacy/safety of future dengue vaccines.

**PNAS - Proceedings of the National Academy of Sciences of the United States of America**

<http://www.pnas.org/content/early/>

[Accessed 27 Apr 2019]

[No new digest content identified]

**Prehospital & Disaster Medicine**

Volume 34 - Issue 1 - February 2019

<https://www.cambridge.org/core/journals/prehospital-and-disaster-medicine/latest-issue>

[Reviewed earlier]

**Preventive Medicine**

Volume 121 Pages 1-166 (April 2019)

<https://www.sciencedirect.com/journal/preventive-medicine/vol/121/suppl/C>

[Reviewed earlier]

**Proceedings of the Royal Society B**

29 August 2018; volume 285, issue 1885

<http://rspb.royalsocietypublishing.org/content/285/1885?current-issue=y>

[Reviewed earlier]

**Public Health**

Volume 169 Pages 1-202, A1-A2 (April 2019)

<https://www.sciencedirect.com/journal/public-health/vol/169/suppl/C>

*Research article Abstract only*

**[Assessing the potential outcomes of achieving the World Health Organization global non-communicable diseases targets for risk factors by 2025: is there also an economic dividend?](#)**

M. Devaux, A. Lerouge, B. Ventelou, Y. Goryakin, ... M. Cecchini

Pages 173-179

***Review article Open access***

**[Economic evaluations of public health implementation-interventions: a systematic review and guideline for practice](#)**

P. Reeves, K. Edmunds, A. Searles, J. Wiggers

**Public Health Ethics**

Volume 12, Issue 1, April 2019

<http://phe.oxfordjournals.org/content/current>

[Reviewed earlier]

**Public Health Reports**

Volume 134 Issue 2, March/April 2019

<https://journals.sagepub.com/toc/phrg/134/2>

[Reviewed earlier]

**Qualitative Health Research**

Volume 29 Issue 6, May 2019

<http://qhr.sagepub.com/content/current>

[New issue; No digest content identified]

**Research Ethics**

Volume 15 Issue 2, April 2019

<http://journals.sagepub.com/toc/reab/current>

[Reviewed earlier]

**Reproductive Health**

<http://www.reproductive-health-journal.com/content>

[Accessed 27 Apr 2019]

[No new digest content identified]

**Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)**

[http://www.paho.org/journal/index.php?option=com\\_content&view=featured&Itemid=101](http://www.paho.org/journal/index.php?option=com_content&view=featured&Itemid=101)

*Latest Articles*

[No new digest content identified]

## **Risk Analysis**

Volume 39, Issue 4 Pages: 741-956 April 2019

<https://onlinelibrary.wiley.com/toc/15396924/current>

[Reviewed earlier]

## **Risk Management and Healthcare Policy**

<https://www.dovepress.com/risk-management-and-healthcare-policy-archive56>

[No new digest content identified]

## **Science**

26 April 2019 Vol 364, Issue 6438

<http://www.sciencemag.org/current.dtl>

*Editorial*

### **Health for all**

By Seth Berkley, Henrietta Fore

Science 26 Apr 2019 : 309

*Summary*

Imagine a world where affordable, quality health care is available to every person, and where infectious disease and infant and maternal mortality are as rare in the poorest parts as they are in wealthier countries. The world has already come a long way toward meeting this goal. But to finish the job, we need to change our thinking.

To be sure, the incidence of child mortality and cases of deadly infectious diseases have dropped dramatically around the world. For example, polio, which once paralyzed a thousand children every day, has been eliminated from all but three countries, with just 33 cases last year. Measles cases, despite a recent, alarming global surge, are now a fraction of what they were four decades ago. All this was made possible because global health organizations and the governments of lower-income countries have worked together to provide the most vulnerable communities access to essential health care interventions, such as clean water, sanitation, and vaccinations.

And yet, 1 in 10 children are still missing out. Most are the hardest to reach, whether they live in remote rural villages, conflict zones, among the swelling numbers of displaced people, or in rapidly growing urban slums where they might be undetected by formal health systems. Meeting their needs will require focusing more on health interventions that have both the greatest reach and are conduits to other health services for vulnerable communities. Childhood vaccination does precisely this. Vaccination reaches more children—more than 85%, who are inoculated against a range of infectious diseases—than any other health intervention globally. When a child gets access to vaccines, it benefits that child's community. With vaccines come supply chains, logistics, cold storage, trained health care staff, data monitoring, disease surveillance, and health care records. Parents and siblings often come along with the child who is being vaccinated, giving them potential access to a host of other health interventions—from neonatal and maternal health care to malaria prevention measures, and sexual and reproductive health and education.

Achieving health for all will also require a change in mindset. We must examine the barriers that deny health care to so many others. Such barriers can take different practical, cultural, or social forms, but identifying them can inform the development of new tailored solutions. If parents have too far to travel, for example, then build more health facilities closer to those who need them. Similarly, the lack of after-hours vaccination clinics or the use of male vaccinators in some settings can prevent or deter attendance. Also, traditional paper medical records may make it difficult for health care workers to know who is missing out because parents may rarely attend the same clinic twice.

This new mindset will require a shift in business models. Instead of seeking solutions that have the greatest utilitarian value, it could be better to look for innovative solutions that have an intended disproportionate impact, largely benefiting the few rather than the many. For example, in Tanzania, the Electronic Immunization Register, a tablet-based system, is giving vaccinators access to records across entire regions regardless of which clinic they are in. This is enabling them to proactively track which children are missing out.

As the 2030 deadline looms for the United Nations Sustainable Development Goals (SDGs), targets driving a broad range of development efforts today, providing health for all is likely to become increasingly more difficult. The good news is that nations have already taken the first major step with the SDG Global Action Plan, a commitment made last year by global health agencies to unite around efforts to accelerate progress. The hope is to start implementing a plan in September 2019. Health for all is achievable, but this vision requires new thinking by everyone.

#### *In Depth*

#### **[Dengue researcher faces charges in vaccine fiasco](#)**

By Fatima Arkin

Science26 Apr 2019 : 320 Restricted Access

Rose Capeding could face years in prison for role in tests.

#### *Summary*

Rose Capeding, former head of the dengue department of the Research Institute for Tropical Medicine in Manila, has been indicted in a series of criminal cases over the failed introduction in the Philippines of Dengvaxia, a vaccine against dengue that was yanked from the market in 2017 because of safety issues. In February, a panel of prosecutors concluded that there is probable cause to indict Capeding and 19 others for "reckless imprudence resulting [in] homicide," because of their role in the vaccine's approval and rollout. If convicted of accusations leveled at her by the national Department of Justice, Capeding could face up to 48 years in prison. Many scientists have come to her defense.

#### **Science Translational Medicine**

24 April 2019 Vol 11, Issue 489

<http://stm.sciencemag.org/>

#### *Research Articles*

#### **[Diagnosis of genetic diseases in seriously ill children by rapid whole-genome sequencing and automated phenotyping and interpretation](#)**

By Michelle M. Clark, Amber Hildreth, Sergey Batalov, Yan Ding, Shimul Chowdhury, Kelly Watkins, Katarzyna Ellsworth, Brandon Camp, Cyrielle I. Kint, Calum Yacoubian, Lauge Farnaes, Matthew N. Bainbridge, Curtis Beebe, Joshua J. A. Braun, Margaret Bray, Jeanne Carroll, Julie A. Cakici, Sara A. Caylor, Christina Clarke, Mitchell P. Creed, Jennifer Friedman, Alison Frith, Richard Gain, Mary Gaughran, Shauna George, Sheldon Gilmer, Joseph Gleeson, Jeremy Gore, Haiying Grunenwald, Raymond L. Hovey, Marie L. Janes, Kejia Lin, Paul D. McDonagh, Kyle McBride, Patrick Mulrooney, Shareef Nahas, Daeheon Oh, Albert Oriol, Laura Puckett, Zia Rady, Martin G. Reese, Julie Ryu, Lisa Salz, Erica Sanford, Lawrence Stewart, Nathaly Sweeney, Mari Tokita, Luca Van Der Kraan, Sarah White, Kristen Wigby, Brett Williams, Terence Wong, Meredith S. Wright, Catherine Yamada, Peter Schols, John Reynders, Kevin Hall, David Dimmock, Narayanan Veeraraghavan, Thomas Defay, Stephen F. Kingsmore

Science Translational Medicine 24 Apr 2019 Restricted Access

### *A streamlined genetic diagnosis pipeline*

When treating seriously ill children, time is of the essence. Clark et al. built an automated pipeline to analyze EHR data and genome sequencing data from dried blood spots to deliver a potential diagnosis for hospitalized, often critically ill, children with suspected genetic diseases. Their pipeline required minimal user intervention, increasing usability and shortening time to diagnosis, delivering a provisional finding in a median time of less than 24 hours. Although this pipeline would need to be adapted for use at different hospital systems, such an automated tool could aid clinicians to expedite an accurate genetic disease diagnosis, potentially hastening lifesaving changes to patient care.

### *Abstract*

By informing timely targeted treatments, rapid whole-genome sequencing can improve the outcomes of seriously ill children with genetic diseases, particularly infants in neonatal and pediatric intensive care units (ICUs). The need for highly qualified professionals to decipher results, however, precludes widespread implementation. We describe a platform for population-scale, provisional diagnosis of genetic diseases with automated phenotyping and interpretation. Genome sequencing was expedited by bead-based genome library preparation directly from blood samples and sequencing of paired 100-nt reads in 15.5 hours. Clinical natural language processing (CNLP) automatically extracted children's deep phenomes from electronic health records with 80% precision and 93% recall. In 101 children with 105 genetic diseases, a mean of 4.3 CNLP-extracted phenotypic features matched the expected phenotypic features of those diseases, compared with a match of 0.9 phenotypic features used in manual interpretation. We automated provisional diagnosis by combining the ranking of the similarity of a patient's CNLP phenome with respect to the expected phenotypic features of all genetic diseases, together with the ranking of the pathogenicity of all of the patient's genomic variants. Automated, retrospective diagnoses concurred well with expert manual interpretation (97% recall and 99% precision in 95 children with 97 genetic diseases). Prospectively, our platform correctly diagnosed three of seven seriously ill ICU infants (100% precision and recall) with a mean time saving of 22:19 hours. In each case, the diagnosis affected treatment. Genome sequencing with automated phenotyping and interpretation in a median of 20:10 hours may increase adoption in ICUs and, thereby, timely implementation of precise treatments.

## **Social Science & Medicine**

Volume 226 Pages 1-274 (April 2019)

<https://www.sciencedirect.com/journal/social-science-and-medicine/vol/226/suppl/C>

[Reviewed earlier]

### **Systematic Reviews**

<https://systematicreviewsjournal.biomedcentral.com/articles>

[Accessed 27 Apr 2019]

[No new digest content identified]

### **Travel Medicine and Infectious Diseases**

Volume 28 Pages 1-120 (March–April 2019)

<http://www.travelmedicinejournal.com/>

[Reviewed earlier]

### **Tropical Medicine & International Health**

Volume 24, Issue 4 Pages: i-iv, 379-501 April 2019

<https://onlinelibrary.wiley.com/toc/13653156/current>

[Reviewed earlier]

### **Vaccine**

Volume 37, Issue 19 Pages 2527-2642 (1 May 2019)

<https://www.sciencedirect.com/journal/vaccine/vol/37/issue/19>

*Short communication Abstract only*

[Development and acceptability of a video-based vaccine promotion tutorial for obstetric care providers](#)

A.T. Chamberlain, R.J. Limaye, S.T. O'Leary, P.M. Frew, ... S.B. Omer

Pages 2532-2536

### **Vaccines — Open Access Journal**

<http://www.mdpi.com/journal/vaccines>

(Accessed 27 Apr 2019)

[No new digest content identified]

### **Value in Health**

April 2019 Volume 22, Issue 4, p385-502

<http://www.valueinhealthjournal.com/current>

[Reviewed earlier]

### **Viruses**

Volume 11, Issue 3 (March 2019)

<https://www.mdpi.com/1999-4915/11/3>

[Reviewed earlier]



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**From Google Scholar & other sources: Selected Journal Articles, Newsletters, Dissertations, Theses, Commentary**

**Health Promotion International**

Published: 21 April 2019

**HPV vaccine, Twitter, and gay, bisexual and other men who have sex with men**

A Budenz, A Klassen, A Leader, K Fisher, E Yom-Tov...

***Abstract***

This study aimed to quantify human papillomavirus (HPV) vaccine Twitter messaging addressing gay, bisexual and other men who have sex with men (GB+MSM) and describes messaging by vaccine sentiment (attitudes towards vaccine) and characteristics (topic of messaging). Between August 2014 and July 2015, we collected 193 379 HPV-related tweets and classified them by vaccine sentiment and characteristics. We analysed a subsample of tweets containing the terms 'gay', 'bisexual' and 'MSM' (N = 2306), and analysed distributions of sentiment and characteristics using chi-square. HPV-related tweets containing GB+MSM terms occupied 1% of our sample. The subsample had a largely positive vaccine sentiment. However, a proportion of 'gay' and 'bisexual' tweets did not mention the vaccine, and a proportion of 'gay' and 'MSM' tweets had a negative sentiment. Topics varied by GB+MSM term—HPV risk messaging was prevalent in 'bisexual' (25%) tweets, and HPV transmission through sex/promiscuity messaging was prevalent in 'gay' (18%) tweets. Prevention/protection messaging was prevalent only in 'MSM' tweets (49%). Although HPV vaccine sentiment was positive in GB+MSM messaging, we identified deficits in the volume of GB+MSM messaging, a lack of focus on vaccination, and a proportion of negative tweets. While HPV vaccine promotion has historically focused on heterosexual HPV transmission, there are opportunities to shape vaccine uptake in GB+MSM through public health agenda setting using social media messaging that increases knowledge and minimizes HPV vaccine stigma. Social media-based HPV vaccine promotion should also address the identities of those at risk to bolster vaccine uptake and reduce the risk of HPV-attributable cancers.

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**Media/Policy Watch**

This watch section is intended to alert readers to substantive news, analysis and opinion from the general media and selected think tanks and similar organizations on vaccines, immunization, global public health and related themes. *Media Watch* is not intended to be exhaustive, but indicative of themes and issues CVEP is actively tracking. This section will grow from an initial base of newspapers, magazines and blog sources, and is segregated from *Journal Watch* above which scans the peer-reviewed journal ecology.

We acknowledge the Western/Northern bias in this initial selection of titles and invite suggestions for expanded coverage. We are conservative in our outlook in adding news sources which largely report on primary content we are already covering above. Many electronic media sources have tiered, fee-based subscription models for access. We will provide full-text where

content is published without restriction, but most publications require registration and some subscription level.

### **The Atlantic**

<http://www.theatlantic.com/magazine/>

*Accessed 27 Apr 2019*

*Health*

#### **Measles and the Limits of Facts**

At its core, the resurgence of the once-defeated disease in the U.S. is a failure of communication.

James Hamblin Apr 26, 2019

### **How to Talk to an Anti-vax Relative**

The question of whether vaccinations should be a duty or a choice is dividing families.

Ashley Fetters Apr 22, 2019

### **BBC**

<http://www.bbc.co.uk/>

*Accessed 27 Apr 2019*

[No new, unique, relevant content]

### **The Economist**

<http://www.economist.com/>

*Accessed 27 Apr 2019*

[No new, unique, relevant content]

### **Financial Times**

<http://www.ft.com/home/uk>

*Accessed 27 Apr 2019*

[No new, unique, relevant content]

### **Forbes**

<http://www.forbes.com/>

*Accessed 27 Apr 2019*

#### **Rare Disease R&D Investments Likely To Grow In Biopharma**

*Given these advantages, it is hard to believe that rare diseases won't take up a bigger proportion of biopharma R&D dollars in the future.*

Apr 24, 2019

By John LaMattina Contributor

### **Foreign Affairs**

<http://www.foreignaffairs.com/>

*Accessed 27 Apr 2019*

[No new, unique, relevant content]

### **Foreign Policy**

<http://foreignpolicy.com/>

*Accessed 27 Apr 2019*

[No new, unique, relevant content]

### **The Guardian**

<http://www.guardiannews.com/>

*Accessed 27 Apr 2019*

#### **Anti-vaxxers are taking populism to a new, deadly level**

Gaby Hinsliff

27 Apr 2019

#### **Measles is on the march again – but scare tactics won't improve vaccination rates**

Andre Spicer

26 Apr 2019

### **New Yorker**

<http://www.newyorker.com/>

*Accessed 27 Apr 2019*

[No new, unique, relevant content]

### **New York Times**

<http://www.nytimes.com/>

*Accessed 27 Apr 2019*

*U.S.*

#### **More Than 700 at 2 California Universities Under Quarantine Amid Measles Outbreak**

The number of staff members and students who were under quarantine on Friday was up by about 400 from the day before, according to the authorities.

April 26

*Health*

#### **Religious Objections to the Measles Vaccine? Get the Shots, Faith Leaders Say**

Devout parents who are worried about vaccines often object to ingredients from pigs or fetuses. But the leaders of major faiths have examined these fears and still vigorously endorse vaccination.

April 26

*U.S.*

#### **Trump Tells Americans: Go Get Your Measles Vaccination**

U.S. President Donald Trump on Friday urged Americans to protect themselves with the measles vaccination as the number of cases of the once-eradicated disease in the United States hit the highest levels since 2000.

April 26

*Asia Pacific*

#### **Polio Vaccinator Is Shot and Killed in Pakistan**

The woman was part of a vaccination campaign. Another worker in her team was injured. A total of three polio workers have been killed this week as unfounded rumors against vaccines spread.

April 25

**Wall Street Journal**

<http://online.wsj.com/home-page?wsjregion=na,us&homepage=/home/us>

*Accessed 27 Apr 2019*

*Essay*

**The Founding Generation Also Had to Fight 'Anti-Vaxxers'**

By Mark Honigsbaum

In the 1720s, Cotton Mather supported an early form of inoculation; Washington, Jefferson and Adams followed suit.

Appeared in the April 26, 2019, print edition.

*Review & Outlook*

**'They Have to Get the Shots'**

By The Editorial Board

Measles is spreading again, so urging vaccination is vital.

Appeared in the April 26, 2019, print edition.

**Washington Post**

<http://www.washingtonpost.com/>

*Accessed 27 Apr 2019*

[No new, unique, relevant content]

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**Think Tanks et al****Brookings**

<http://www.brookings.edu/>

*Accessed 27 Apr 2019*

[No new relevant content]

**Center for Global Development**

<http://www.cgdev.org/page/press-center>

[No new relevant content]

**CSIS**

<https://www.csis.org/>

*Accessed 27 Apr 2019*

[No new relevant content]

**Council on Foreign Relations**

<http://www.cfr.org/>

*Accessed 27 Apr 2019*

[No new relevant content]

**Kaiser Family Foundation**

[https://www.kff.org/search/?post\\_type=press-release](https://www.kff.org/search/?post_type=press-release)

Accessed 27 Apr 2019

April 23, 2019 Fact Sheet

### **The President's Malaria Initiative and Other U.S. Government Global Malaria Efforts**

This fact sheet provides a snapshot of global malaria efforts and examines the U.S. government's role in addressing malaria worldwide, including current programs, funding, and key issues.

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***Vaccines and Global Health: The Week in Review*** is a service of the Center for Vaccine Ethics and Policy (CVEP)/GE2P2 Global, which is solely responsible for its content, and is an open access publication, subject to the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by-nc/3.0/>). Copyright is retained by CVEP.

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Support for this service is provided by the Bill & Melinda Gates Foundation; Aeras; PATH, and industry resource members Janssen/J&J, Pfizer, Sanofi Pasteur U.S., Takeda, Moderna Therapeutics (list in formation), and the Developing Countries Vaccine Manufacturers Network (DCVMN).

Support is also provided by a growing list of individuals who use this membership service to support their roles in public health, clinical practice, government, NGOs and other international institutions, academia and research organizations, and industry.

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