

VACCINES
BEAT

THE LEGEND BEHIND VACCINES

The honor of an hour with Prof. Stanley Plotkin

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The legend behind vaccines

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Prof. Stanley Plotkin



Message from Prof. Stanley Alan Plotkin

In the world of vaccinology, Prof. Stanley Alan Plotkin needs no introduction.

In the 1960s, Prof. Plotkin played a pivotal role in the development of the vaccine against the rubella virus and rotaviruses while working at the Wistar Institute in Philadelphia, where he was a prominent member of its research faculty from 1957 to 1991. Today, in addition to his emeritus appointment at Wistar, he holds the position of emeritus professor of Pediatrics at the University of Pennsylvania.

Another of his most notable legacies is his textbook *Vaccines*, first published in 1988, for which he has garnered numerous accolades. This award-winning reference guide is widely regarded as the definitive textbook in vaccinology and an essential resource that thoroughly covers every aspect of vaccination and continues to offer reliable information on both existing vaccines and those currently in development.

One of the ‘founding fathers’ of the Pediatric Infectious Diseases Society, he is also a former member of the Board of Trustees of the National Foundation for Infectious Diseases and former president of the World Society for Pediatric Infectious Diseases.

[Full Bio](#)

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LETTER FROM EDITORS

Welcome to our third issue of Vaccines Beat. We are excited to continue our mission of communicating, educating, and promoting knowledge in the fields of vaccinology and vaccination.

In our “Coffee with an Expert” section, we are extremely honored to have an interview with Professor Stanley Plotkin, the legend behind vaccines, and indeed the top leader in vaccinology nowadays. Prof. Plotkin enlightens us with various topics, including rubella vaccination, the mumps virus evolution and its current needed vaccines, the threats behind the avian flu potential pandemic, the continuous setback of vaccine inequity, lessons learned from the COVID-19 pandemic emphasizing on the necessity of improved global surveillance, the 100 days voyage to manufacture and distribute a vaccine against pathogen ‘X’, an update on one of his multiple contributions to vaccinology: ‘correlates of protection’, and finalizing with some of his own words of wisdom. Indeed, a joyful conversation in which Prof. Plotkin replenished knowledge, enthusiasm, science, and hope.

Our “Editor’s Corner” section focuses on addressing the current threat of mpox and “the dangerous game of clades” as well as the need for more equitable vaccine distribution.

The “Best Practice” section highlights the impact of more simplified and versatile vaccine regimens against the always lethal rabies.

In the “Guest Editor” section the Bunge and Born Foundation from Argentina delves into the fascinating topic of measuring vaccine confidence and access, both essential for achieving successful vaccination outcomes.

As always, this issue includes the “Latest Scientific Publications” and the most recent and significant “News and Alerts.”

We hope you find this September issue informative and engaging, and we look forward to continuing this unique effort in support of a healthier planet.



Javier Casellas, M.D., Ph.D.
Chief Editor



Enrique Chacon-Cruz, M.D., MSc
Chief Editor



**Javier
Casellas**

Well-recognized Argentinian Pediatrician and Infectious Diseases Specialist with more than 17 years of experience on Medical Affairs & Clinical Research on Vaccines field within different multinational & recognized Pharmaceutical Companies. (GSK and Novartis Vaccines)

From 2005 to 2015 Dr. Casellas worked as Vaccines Medical Affairs / Clinical Research Director (GSK and Novartis vaccines in Latam Region) with experience on vaccine clinical research, medical affairs activities, vaccine pharmacovigilance, public & private vaccine market access, strong relationship with MoHs across Latam and supranational organizations (such as PAHO, and Sabin Institute), and has published several scientific papers and posters in international journals and meetings, among the most relevant medical activities.

Since 2016 Dr. Casellas became an Independent Vaccine Consultant. From 2016 to 2018, Dr. Casellas joined an NPO (FIDEC, Miami, FL, USA) as Medical Manager working on vaccine clinical trials along with Bill and Melinda Gates Foundation. Currently, Dr. Casellas works on global & regional Vaccine and Infectious Diseases (IDs) trials at IQVIA as Global Medical Director within the Infectious Diseases and Vaccines Team.



**Enrique
Chacon
Cruz**

Enrique Chacon-Cruz, M.D., MSc, Mexican-born medical doctor with a degree from Guadalajara, Mexico, and further specializations in Pediatrics and Infectious Diseases from institutions in Mexico City and the USA (Eastern Virginia Medical School). He also holds a Master's degree in Vaccinology and Drug Development from the University of Siena, Italy.

He is an Overseas Fellow of the Royal Society of Medicine of the United Kingdom and a member of several international associations in Infectious Diseases. Currently, he is the CEO and Founder of "Think Vaccines" (Research, Education, and Consultancy for Vaccines and Vaccinology) based in Houston, Texas.

With over 140 research items published and/or presented at international meetings and more than 500 international lectures, all focused on vaccines, vaccination, clinical trials, and vaccine-preventable diseases. The latter conducted independently or in association with the Centers for Disease Control and Prevention (CDC), the University of California in San Diego, Eastern Virginia Medical School, and several other institutions.

Additionally, he is a member of the Mexican Committee for the Elimination of Measles, Rubella, and Congenital Rubella, and the Scientific Committee on Health Issues of the Mexican Government in Baja-California. He is also the former Director of the Mexican Active Surveillance Network for Bacterial Meningitis and the former Head of the Pediatric Infectious Diseases Department and the Research Department at the General Hospital of Tijuana, Baja-California, Mexico.

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Coffee with the Expert

THE LEGEND BEHIND VACCINES

The honor of an hour with
Prof. Stanley Plotkin

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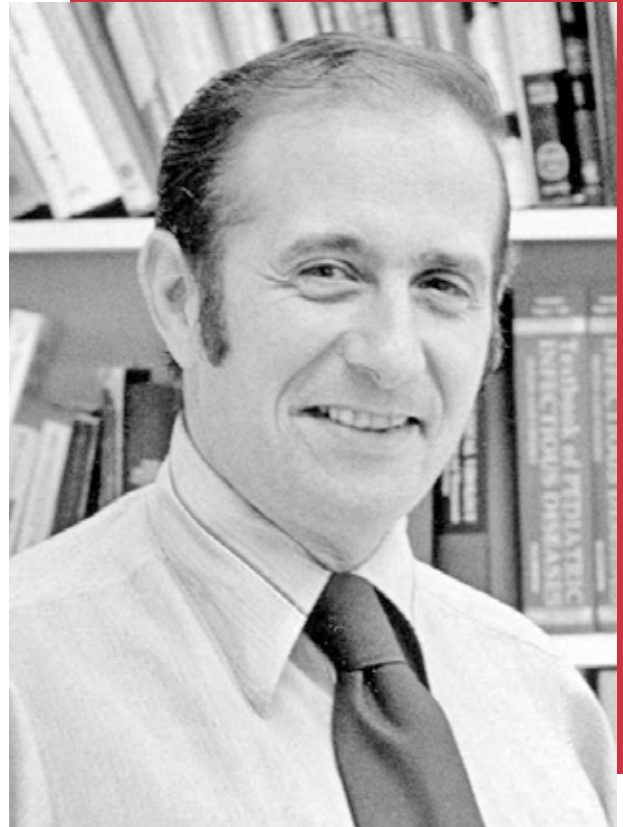
In the world of vaccinology, Prof. Stanley Alan Plotkin needs no introduction.

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Another of his most notable legacies is his textbook *Vaccines*, first published in 1988, for which he has garnered numerous accolades. This award-winning reference guide is widely regarded as the definitive textbook in vaccinology and an essential resource that thoroughly covers every aspect of vaccination and continues to offer reliable information on both existing vaccines and those currently in development.

One of the ‘founding fathers’ of the Pediatric Infectious Diseases Society, he is also a former member of the Board of Trustees of the National Foundation for Infectious Diseases and former president of the World Society for Pediatric Infectious Diseases.

Prof. Plotkin has been actively involved in developing some of the most potent vaccines against preventable infectious diseases and is considered one of the world’s leading authorities in that area.



The wisdom that exudes Prof. Plotkin’s every word is difficult to replicate.

Rubella vaccine

Often referred to as the ‘godfather of vaccines,’ Prof. Plotkin is a foundational figure in the development of the rubella vaccine. As a leading advocate, he is optimistic about the prospects of achieving global elimination of congenital rubella.

“Yes. So, I think actually it will be much easier to eradicate rubella than measles. And that is simply because the infectious ability of the rubella virus is much less than that of measles, the so-called reproductive number. And that’s why it has been relatively easy to eradicate rubella from the Western Hemisphere and pretty much from Europe. So, all that we need to do is to extend rubella vaccination to the rest of the world,” confidently articulated Prof. Plotkin.

Widespread vaccination against rubella is already being successfully implemented in countries such as India and China, and it could be extended to other Asian countries, especially when combined with the measles vaccine. Measles-rubella vaccine combinations are easily available, and the Serum

Institute of India is making huge quantities of such vaccines. In Africa, however, eradicating rubella presents a significant challenge due to the limited use of the vaccine in many countries. To address this issue, it is crucial for organizations like the World Health Organization (WHO) and local African organizations to actively promote and support the use of the rubella vaccine.

“But in general, I am optimistic that if that is done, there’s no reason why rubella could not be eradicated,” expressed Prof. Plotkin, who shared that his top three success stories in vaccinology are smallpox, measles and *Haemophilus influenzae* type b.

The rubella vaccine was not fully licensed until 1969. It was later combined with the measles and mumps vaccines to create what is now known as the “triple viral” or Measles–Mumps–Rubella (MMR) vaccine. Today, the widespread use of the MMR vaccine has led to the elimination of rubella in the United States since 2012, with any cases now being imported from travelers coming from other countries.

The mumps virus evolution

The mumps vaccine is based on the attenuation of serial passages from a clinical isolate of the mumps virus known as the “Jeryl Lynn” strain. Additionally, other attenuated strains, such as the Zagreb strain, have also been utilized in the development of live attenuated mumps vaccines.

Since the development of the Jeryl-Lynn strain, a live attenuated virus vaccine administered subcutaneously, the mumps virus has evolved particularly affecting the SH gene. As a result, the original Group A vaccine is now less effective than it was in the past, with current strains predominantly being Group G.

Another challenge with the mumps vaccine is the duration of its efficacy, which may or may not be improved by switching from A strains to G strains. Despite these challenges, Prof. Plotkin remains confident that adapting the vaccine to address these changes could lead to a formulation with longer-lasting efficacy.

“I’m relatively optimistic that that change would give longer efficacy, but that remains to be seen. So, what we can do certainly is reduce mumps, the occurrence of mumps in children. Whether we can also prevent

mumps in older people like college students remains to be seen,” concluded Prof. Plotkin.

Avian flu mutations and pandemic threats

The remarkable ability of influenza viruses to mutate and cross species leaves humans at risk for future pandemics. Experts monitor influenza viruses in various species, including birds, to assess the potential for these viruses to cause a pandemic. Prof. Plotkin prefers to focus on preparedness rather than speculating on potential scenarios.

“Well, this is, of course, a controversial question these days. And some people are pessimists and believe that the avian flu will spread to humans and cause a pandemic. And some are relatively optimistic and think that an H5 containing strain will not spread to humans. And, you know, I think the honest answer is we don’t know. And that we must take precautions. Now, I am not, I would say, very pessimistic,” he shares.

Viruses outside of H1, H2, and H3 subtypes have not yet spread to humans, possibly due to underlying biological reasons. To prepare for a potential emergency, Prof. Plotkin proposes establishing a substantial initial stockpile of vaccines. Once this supply is in place, production could be rapidly scaled up if needed.

“I don’t feel that we should create billions of doses yet. But I think it’s reasonable for us to take some precautions and let’s say create a million doses that would be available in the case of an emergency. And of course, the other part is for us to maintain, let’s say, surveillance of influenza and make sure that H5 is not spreading widely to humans,” he proposes.

Prof. Plotkin notes that while surveillance efforts are reasonably organized in most of the Western Hemisphere, many regions of the world lack such infrastructure. Expanding surveillance campaigns in these underserved areas would be highly beneficial.

“That being said, so far, the mutations that have occurred in influenza have been detected relatively quickly in parts of the world where there is surveillance. So, the situation is not terrible, but it could be improved,” he claims.

Prof. Plotkin feels that, so far, the cases have



not reached a level of severity to push the panic button yet. Hence, producing enough vaccine doses for the entire world at this stage would be costly and potentially useless. However, he emphasizes the importance of preparedness, noting that “our predictive ability is not great.”

Inequity is in the eye of the beholder

Since the COVID-19 pandemic, the public health system has faced increased scrutiny over how inequities in vaccine manufacturing, implementation, and distribution impact outcomes in both developing and developed countries. With a long-term viewpoint, Prof. Plotkin reminds us of the progress made in vaccine manufacturing capabilities and the lessons learned from past challenges.

“My thoughts are, actually, somewhat optimistic in that there has been, fortunately, a tremendous change in my lifetime with regard to manufacturing ability. It’s not optimal, but it’s certainly better than it was,” commented Prof. Plotkin, who has had a role in the expansion of Serum Institute of India, a biotechnology and biopharmaceuticals company, to become one of the world’s largest vaccine manufacturers.

In addition to India, other examples of countries that have started producing vaccines locally are Brazil, China and Thailand. While some regions of the world remain under-vaccinated, Prof. Plotkin asserts that the drawback is not related to vaccine supplies but rather to economics, political will, and the capacity to implement vaccination programs effectively.

“It’s the economics of vaccine purchase and the desire to have vaccines and, also of course, the ability to use them. So, what I would say is that potentially vaccine production is less of a problem now than it is the desire to use vaccines,” claims Prof. Plotkin, who fervently believes vaccination should be mandatory.

Lessons from the COVID-19 pandemic: surveillance

Public health surveillance is crucial for informing decision-making in public health. The onset of the COVID-19 pandemic in early 2020 prompted a significant acceleration in the development of technologies designed to enhance monitoring efforts. As a result, the pandemic has led to notable changes and advancements in public health surveillance methods.

“The first thought is about surveillance that in the case of COVID, as you know, what happened was a virus of bats managed to infect humans in ways that are still controversial,” confirms Prof. Plotkin.

Be that as it may, the virus did manage to jump species, highlighting the fact that viruses affecting humans have historically originated from animals. Prof. Plotkin emphasizes that a key lesson from this experience is the need to be prepared for a range of viruses that might potentially jump to humans.

“And that’s something that should yield interesting information. But of course, we also need surveillance. That is, isolating viruses from people, especially those in contact with animals, animal workers, dairy workers, etc., to see what viruses they’re picking up,” sustains Prof. Plotkin, who claims there is research showing that people are acquiring viruses that give them antibodies in areas such as China and other countries in Asia.

As a result, many organizations, including CEPI (the Coalition for Epidemic Preparedness Innovations), which Prof. Plotkin helped to establish, are actively monitoring various families of viruses present in animals to assess their behavior and potential risk to human health.

“So, I think we learned the lesson and I’m optimistic that we won’t make the same mistake again by not surveying animal-to-human transfer,” he concludes. “And I think that’s the only way we’re going to be prepared for new viruses that jump to the human species.”

Vaccines within 100 days

It is undeniable that messenger RNA technology has enabled scientists to go from a new sequence to a messenger RNA vaccine in 100 days.

“But I would add to that, that I am one who counsels that we should not depend on messenger RNA technology only. It’s great for quick response, but it is not always the best way of vaccinating. As you know, there are basically two difficulties,” he continues to explain that one is the duration of the response and the other is the capacity to produce good T cell responses.

Prof. Plotkin shares that, depending on the immunological characteristics of the disease, several established technologies can be used. If a long-lasting response or a strong T cell response is required, there are alternatives to RNA vaccines.

“So, my argument is, yes, we should be able to respond quickly with an mRNA vaccine, but our work doesn’t stop there. We should go on to see whether other types of vaccine would give the immune responses that we need permanently. So, I think that’s a practical scheme,” he debates.

Prof. Plotkin believes that using different lipid nanoparticles, more effective adjuvants, or employing self-amplifying mRNA technologies

might not only achieve a rapid response similar to that of conventional mRNA vaccines but also provide a longer duration of immunity.

“I think it’s very likely. Obviously, [vaccine development] it’s going to depend on the agent, and that is, for example, whether it’s primarily a mucosal infection or whether it’s systemic, and that has obvious impact on the type of technology that you want to use. So, it’s difficult to give a general answer. I think [the choice of vaccine technology] it’s going to depend on the specific agent, but it’s important that we don’t put all our eggs in the mRNA basket,” he deliberates.

Correlates of protection for vaccine development

Correlates of protection allow scientists to predict vaccine efficacy, which is crucial, especially when evaluating multiple candidate vaccines. In many instances, a specific immune response can be identified as a reliable correlate of protection. However, confusion can arise when several types of immune responses need to be considered, as each may play a role in the overall protection provided by the vaccine.

“And, of course, that’s true. But what a [an established] correlate of protection serves is it



has predictive value. It's not to say that other biological responses are [not] valuable, but it tells you what you can use to predict that a vaccine is going to work," shares Prof. Plotkin, who has authored more than 800 publications, most concerning the safe and effective use of vaccines.

Understanding the correlate of protection is important because it allows scientists to focus on enhancing this specific immune response in various ways. Although a single immune response alone may not be sufficient for comprehensive protection, identifying a correlate enables predictions about vaccine efficacy. This is valuable when comparing different vaccines or assessing responses in a population, helping to determine the overall effectiveness and value of a vaccine.

"Now, having said that, it's important to recognize that biology is complex," Prof. Plotkin points out.

In the case of COVID-19, the situation is more complex because it primarily affects mucosal surfaces, making it challenging to determine a single correlate of protection. This complexity arises from the fact that multiple correlates of protection may be relevant, complicating the process of identifying and measuring the most effective immune responses.

"That is, there are correlates against infection, and there are correlates against disease. In general terms, antibodies will prevent infection if the antibody titer is high enough. But, if infection occurs, T cell responses are key to preventing systemic symptoms. So, you know, life is complicated," explains Prof. Plotkin, who further notes that, in the case of measles, protection can typically be predicted based on antibody titer levels alone.

He believes that science has made significant progress in determining correlates of protection for COVID-19. However, a key gap remains in identifying correlates of protection specifically against other mucosal infections. Additionally, for many other diseases, clear correlates of protection are still not well-defined. The more complex the biology of a disease, the more challenging it is to pinpoint a reliable correlate of protection.

"Cytomegalovirus is a good example of the complexity of correlates. And there's no single correlate that is good [sufficient]. And so, we need a lot of work there. But there are other examples, notably HIV, where we're far from

identifying a correlate of protection. And mucosal infections in general, I mean, rhinovirus, various other things. I think we need a lot of work to develop correlates of protection," he ponders.

Foytomegalovirus (CMV) is related to the viruses that cause chickenpox, herpes simplex and mononucleosis. CMV may cycle through periods when it lies dormant and then reactivates. Rhinoviruses are the most frequent cause of the common cold and are a common viral trigger for asthma attacks.

"On the other hand, I mentioned chikungunya before. And, you know, before there was a vaccine, we knew very well what the correlate of protection is. And, as soon as we reproduced it, that is, serum antibody, that was it," recalls Prof. Plotkin.

For group B streptococcal disease, "I think it's pretty clear that [serum] antibody to that organism is going to protect against serious disease. But what is not clear to me is how you can prevent colonization. And so, I think more work needs to be done on that issue." he concludes.

Prof. Plotkin emphasizes the importance of improving the process of evaluating vaccine efficacy without expecting a predictive value of 100%. Instead, the focus should be on determining whether the vaccine will be effective to a significant degree when widely used.

Prof. Plotkin's lifelong work on vaccines spans over six decades and has resulted in significant reductions in both morbidity and mortality globally. An optimist at heart, his steadfast commitment to guiding his research with rigorous science has earned him profound admiration and respect from his peers around the world.



News & Alerts

MOST RELEVANT MONTHLY NEWS ON VACCINATION AND EMERGING DISEASES WITH BIBLIOGRAPHIC ALERTS

A summary of the latest News & Alerts in the fields of vaccinology, vaccines, vaccination, and vaccine-preventable diseases. We curate the latest information on regulatory updates, emerging trends, breakthroughs in vaccine technology, vaccine safety and efficacy, global immunization developments and outbreak alerts, as a resource to keep our community informed.

WHO prequalifies the first vaccine against mpox

Published: September 13, 2024.

<https://www.who.int/news/item/13-09-2024-who-prequalifies-the-first-vaccine-against-mpox/>

Epidemiological Update Oropouche in the Americas Region – 6 September 2024.

Published: September 6, 2024.

<https://www.paho.org/en/documents/epidemiological-update-oropouche-americas-region-6-september-2024#:~:text=The%20Pan%20American%20Health%20Organization%20%2F%20World%20Health,and%20to%20reinforce%20preventive%20measures%20in%20the%20population.>

CDC Confirms Human H5 Bird Flu Case in Missouri.

Published: September 6, 2024.

<https://www.cdc.gov/media/releases/2024/s0906-birdflu-case-missouri.html>



First phase of polio campaign concludes successfully in Gaza.

Published: September 4, 2024.

<https://www.who.int/news/item/04-09-2024-first-phase-of-polio-campaign-concludes-successfully-in-gaza>

Eastern equine encephalitis, current year data (2024), USA.

Published: September 3, 2024.

<https://www.cdc.gov/eastern-equine-encephalitis/data-maps/current-year-data.html>

WHO exceeds target for Gaza polio vaccinations as campaign continues,

Published: September 3, 2024.

<https://www.bbc.com/news/articles/cy8xwxjy4y70>

West Nile virus, current year data (2024), USA.

Published: September 3, 2024.

<https://www.cdc.gov/west-nile-virus/data-maps/current-year-data.html>

Pfizer and Valneva say second Lyme booster led to 'strong' responses, target 2026 FDA submission

Published: September 3, 2024.

<https://endpts.com/pfizer-and-valneva-say-second-lyme-booster-led-to-strong-responses-target-2026-fda-submission/>

Mpox puts Gavi's new pandemic fund to the test'

Published: August 31, 2024.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01775-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01775-6/fulltext)

Israel agrees to pauses in fighting for polio vaccine drive

Published: August 31, 2024.

<https://www.bbc.com/news/articles/cn02z5kjin400>

Polio in Pakistan

Published: 27 August, 2024

[Pakistan reports 3rd wild poliovirus case in Sindh, 16th case overall in 2024 \(substack.com\)](#)

Health officials in Pakistan report an additional case of wild poliovirus type 1 (WPV1) in Sindh province. The latest case found in a 29-month-old child from Hyderabad district of Sindh province was reported by the Regional Reference Lab at the National Institute of Health.

The Prime Minister's Focal Person for Polio Eradication, Ayesha Raza Farooq said that WPV1 was consistently being reported in sewage samples of Hyderabad for the last four months, reiterating the continued risk of polio circulating anywhere in the country. While poliovirus is circulating anywhere, children everywhere are at risk, she underscored.

Oropouche Fever

Published: 26 August, 2024

<https://www.nature.com/articles/d41586-024-02746-2>

Once confined to the Amazon region the mysterious virus that causes the disease called Oropouche fever has been expanding its range since late 2023, spurring international concern. The virus has already caused

more than 8,000 human infections in the Americas this year, most in Brazil but also in Peru, Bolivia, Colombia and Cuba.

Dengue in France

Published: 23 August, 2024

<https://www.paca.ars.sante.fr/vaucluse-demoustication-et-surveillance-renforcee-apres-la-detection-de-cas-autochtones-de-dengue>

As of 22 August 2024, ten cases of dengue (one imported and nine locally acquired) have been reported from the Vaucluse department. Dengue is no more a tropical disease since Aedes has spread over many regions due to global warmth.

Smallpox and mpox (orthopoxviruses): WHO position paper, August 2024.

Published: August 23, 2024.

<https://www.who.int/publications/i/item/who-wer-9934-429-456>

This position paper has 2 parts. The first focuses on recommendations for vaccines and immunization against smallpox. The second part addresses recommendations for vaccines and immunization against mpox. Each part is further divided into 2 sections: one on preventive vaccination, which applies to vaccines and immunization outside of a smallpox or mpox outbreak, and another section on smallpox or mpox outbreak response.

Disease Outbreak News. Oropouche virus disease - Region of the Americas

Published: 23 August, 2024

<https://www.who.int/emergencies/disease-outbreak-news/item/2024-DON530>

Between 1 January and 20 July 2024, there were 8078 confirmed Oropouche cases reported in the Region of the Americas, including two deaths. The cases are reported among five countries in the region: the Plurinational State of Bolivia (356 cases), Brazil (7284 cases, including two deaths), Peru (290 cases), Colombia (74 cases), and Cuba (74 cases).

Sudan emergency (WHO).

Published: August 17, 2024.

<https://www.who.int/emergencies/situations/sudan-emergency>

Since April 2023, intense fighting in Sudan has led to violence leaving 11 million people in need of urgent health care. Insecurity makes the delivery of health care increasingly challenging. More than two thirds of all main hospitals in affected areas are out of service, with the ones still functioning at risk of closure due to shortages of medical staff, supplies, safe water, and electricity. Repeated attacks on health care are preventing patients and health workers from reaching hospitals and getting treated, with health facilities, medical warehouses, transportation of supplies, and health workers being targeted. The disease surveillance system, and vaccination campaigns have also been disrupted, posing a serious challenge to detect and confirm infectious disease outbreaks.

Polio in Gaza

Published: 16 August, 2024

<https://www.abc.net.au/news/2024-08-17/un-chief-calls-for-polio-pause-in-gaza-first-case-detected/104237636>

The United Nations chief is calling for a ceasefire in Gaza so 640,000 children can be vaccinated against polio after a 10-month-old infant has been confirmed with polio after 25 years free of this disease.

Mpox CDC Fact Sheet

<https://www.cdc.gov/media/releases/2024/s0822-mpox-outbreak.html>

On August 14, 2024, the World Health Organization (WHO) declared a Public Health Emergency of

International Concern about the upsurge of mpox cases in the Democratic Republic of the Congo (DRC) and a growing number of countries in Africa. This announcement followed the Africa Centres for Disease Control and Prevention's (Africa CDC) declaration of a Public Health Emergency of Continental Security on August 13. The significant increase of clade I mpox cases, in both endemic countries (those that have previously had mpox outbreaks) and non-endemic countries (those that have historically not reported mpox outbreaks), threatens the health security of the region, as well as countries outside Africa. In addition, clade I mpox has a newer sub-clade referred to as clade Ib. Both clade Ia and clade Ib are circulating in DRC and have been detected in neighboring countries and in Sweden and Thailand (one case each associated with travel to Africa with known clade I cases).

Increase in Human Parvovirus B19 activity in the United States.

Published: August 13, 2024.

https://emergency.cdc.gov/han/2024/han00514.asp?ACSTrackingID=USCDC_2067-DM134466&ACSTrackingLabel=CDC%20Updates%20%7C%20COVID-19%20and%20Bird%20Flu%20%20-%208%2F20%2F2024&deliveryName=USCD-C_2067-DM134466

Malaria, African region. WHO.

Updated information about malaria in Africa

<https://www.afro.who.int/health-topics/malaria>



Latest Relevant Publications

LATEST PUBLISHED PAPERS AND COMMENTARIES FROM THE CHIEF EDITORS

Latest impactful scientific publications that stand out for their potential bearing on healthcare. We introduce groundbreaking research findings, innovative treatment modalities, results from phase 1 to 3 vaccine clinical trials, or paradigm-shifting discoveries that redefine our understanding of infectious diseases and therapeutic approaches for all vaccine-preventable diseases.

01

“Mpox strategic preparedness and response plan”.

Published: World Health Organization. August 26, 2024. <https://www.who.int/publications/m/item/mpox-global-strategic-preparedness-and-response-plan>

Editorial comment: A must-read document from the WHO that provides insights into the first “out of Africa” global epidemic in 2022 and offers guidance on preparing for and responding to such events on both regional and global scales.

02

“Evaluation of the potential impact and cost-effectiveness of respiratory syncytial virus (RSV) prevention strategies for infants in Argentina”.

Published: *Vaccine* 2024; 42(23): 126234. <https://doi.org/10.1016/j.vaccine.2024.126234>

Editorial comment: The first Latin American study confirms that by either using RSV monoclonal antibodies (nirsevimab) or RSV vaccination during pregnancy has a similar impact and could improve cost-effectiveness by around 45% if priced at \$50 (USD) or less per dose.

03

“Use of a meningococcal group B vaccine (4CMenB) in populations at high risk of gonorrhoea in the UK”.

Published: *Lancet Infect Dis* 2024; 24(9): e576–e583. [https://doi.org/10.1016/S1473-3099\(24\)00031-8](https://doi.org/10.1016/S1473-3099(24)00031-8)

Editorial comment: In this review, the authors summarize the epidemiology of invasive meningococcal disease and gonorrhoea in England, examine the evidence supporting the use of 4CMenB for protection against gonorrhoea, and discuss the data required for long-term program planning and potential extension to the broader population.

04

“JYNNEOS™ effectiveness as post-exposure prophylaxis against mpox: Challenges using real-world outbreak data”

Published: Vaccine, Volume 42, Issue 3, 25 January 2024, Pages 548–555 <https://doi.org/10.1016/j.vaccine.2023.12.066>

Editorial comment: Determining PEP effectiveness using real-world data during an outbreak is challenging. JYNNEOS-TM continues to be licensed and recommended as a 2-dose series. While the national strategy shifts to a PrEP model, PEP following a known exposure continues to be recommended. Additional studies are needed to determine JYNNEOS-TM vaccine effectiveness as PEP, including among different populations at risk of mpox disease including persons living with HIV infection and the optimal timing of PEP.

05

“Ethiopia Cholera Control and Prevention (ECCP): Evidence-Generation Towards Global Roadmap to Ending Cholera”

Published: Volume 79, Issue Supplement_1, 15 July 2024 Volume 79 Issue Supplement_1 | Clinical Infectious Diseases | Oxford Academic (oup.com)

Editorial Comment: Prevention (ECCP): Evidence-Generation Towards Global Roadmap to Ending Cholera.

06

“Measles: What goes around, comes around”

Published: The Journal Infectious Diseases J, August 8th, 2024 <https://doi.org/10.1093/infdis/jiae397>

Editorial comment: We need creative and pragmatic strategies, global political commitment, and the financial resources to plan for measles eradication.

Only through the eventual goal of measles eradication will measles elimination in countries and regions be sustainable

07

“Potential impact of replacing the 13-valent pneumococcal conjugate vaccine with 15-valent or 20-valent pneumococcal conjugate vaccine in the 1 + 1 infant schedule in England: a modelling study”

Published: The Lancet, 14 August, 2024. [https://doi.org/10.1016/S2468-2667\(24\)00161-0](https://doi.org/10.1016/S2468-2667(24)00161-0)

Editorial comment: These results suggest that PCV15 might increase overall invasive pneumococcal disease as the reduction in vaccine-type invasive pneumococcal disease would be counterbalanced by an increase in non-PCV15 invasive pneumococcal disease. By contrast, PCV20 is projected to have a substantial impact on overall invasive pneumococcal disease due to higher invasiveness of the additional serotypes covered by PCV20 than the replacing non-vaccine serotypes. Reduced carriage protection against PCV13 serotypes with higher valency vaccines would amplify these effects. Replacing PCV13 with PCV20 is likely to have a substantial public health benefit, but PCV15 could potentially increase the overall burden of disease

08

“Effectiveness and safety of the tetravalent TAK-003 dengue vaccine: a systematic review”

Published: Medicina; 2024;84(4):689–707. https://www.medicinabuenosaires.com/revistas/vol84-24/destacado/revision_263eng.pdf

Editorial comment: This systematic review provides insights into the effectiveness and safety of the tetravalent TAK-003 vaccine, particularly in children and adolescents, emphasizing the need for personalized recommendations, ongoing surveillance, thorough research, and evidence-based decisions for dengue prevention and control. This systematic review was utilized by the Hospital Alemán in Argentina to formulate recommendations regarding this vaccine.

09

“Adult vaccination programmes deliver socio-economic benefits up to 19 times initial investment, according to new report”.

Published: Office of Health Economics. April 18, 2024. <https://www.ohe.org/news/adult-vaccination-delivers-19-times-investment/>

Editorial comment: This study reveals that adult vaccination programmes can return up to 19 times their initial investment when the full spectrum of economic and societal benefits is valued. The 19x return is equivalent to up to USD 4,637 in net monetary benefits to society per individual full vaccination course. Focusing on vaccines that protect against influenza, pneumococcal disease, respiratory syncytial virus (RSV), and herpes zoster (shingles), the research looks at the delivery of vaccine programmes in countries that represent a range of healthcare systems, demographics, and vaccine schedules – Australia, Brazil, France, Germany, Italy, Japan, Poland, South Africa, Thailand, and the United States. The report concludes that the vaccination programmes deliver substantial returns on government investment through cost savings within healthcare systems and wider socio-economic benefits. Preventing illness reduces doctor and hospital visits, meaning valuable resources can be allocated elsewhere, and ensuring a healthy and active workforce throughout life can boost economic productivity.

10

“Optimisation of dose level and vaccination schedule for the VLA15 Lyme borreliosis vaccine candidate among healthy adults: two randomised, observer-blind, placebo-controlled, multicentre, phase 2 studies”.

Published: Lancet Infect Dis 2024; 24(9): 1045–58. [https://doi.org/10.1016/S1473-3099\(24\)00175-0](https://doi.org/10.1016/S1473-3099(24)00175-0)

Editorial comment: A publication of two phase-2 studies, randomized, placebo-controlled, optimizing the dose of a vaccine against Lyme borreliosis (VLA15) targeting outer surface protein (OspA) serotypes 1–6. VLA15 was safe, well tolerated, and elicited robust antibody responses to all six OspA serotypes. These findings support further clinical development of VLA15 using the 180 µg dose and 0-2-6-month schedule, which was associated with the greatest immune responses.

11

“Population Movement and Poliovirus Spread across Pakistan and Afghanistan in 2023”.

Published: Vaccines 2024; 12(9): 1006. <https://doi.org/10.3390/vaccines12091006>

Editorial comment: This very relevant study aimed to identify the origin of the Afghan population and their patterns of movement within Karachi, to assess the polio vaccination status of children under the age of five, and to investigate the travel history and guest arrival patterns of individuals from Afghanistan and other regions known to be affected by wild poliovirus type 1 (WPV1) within the past six months. Their results showed that substantial population mobility was observed between Afghanistan and Pakistan as well as significant movement of the Afghan population within Karachi in the last six months. These findings warrant attention and targeted implementation of interventions to enhance and sustain both routine and supplementary immunization activities within this demographic group.

12

“COVID-19 vaccine hesitancy: Meaning relations between responses in an epidemiological study and twitter messages”

Published: Vaccine 2024; 42(24): 126247. <https://doi.org/10.1016/j.vaccine.2024.126247>

Editorial comment: In this study, the authors identified open-ended responses on reasons to refuse the COVID-19 vaccine collected in an epidemiologic study, and analyzed meaning relations with Twitter posts according to theme categories using a qualitative approach. Their results suggested that social media interactions can perpetuate misinformation and hesitant attitudes about vaccines. Social media algorithms can intensify ideologic isolation, and strategies to promote the dissemination of tailored health information among social media users should be implemented to promote an overall understanding of health, particularly those concerning the collective wellbeing.

13

“Phase 1 trial of an investigational Tdap booster vaccine with CpG 1018 adjuvant compared with Boostrix in healthy adults and adolescents”.

Published: Vaccine 2024; 42(24): 126251. <https://doi.org/10.1016/j.vaccine.2024.126251>

Editorial comment: Acellular pertussis vaccines, though very safe, have shown to have a limited population-based protection as a result of not conferring herd or indirect immunity, hence, a new vaccine platform and/or current vaccines modification is necessary. In this phase-I study the authors added an adjuvant (CpG 1018) to a combination of diphtheria-acellular pertussis-tetanus (Tdap) in adolescents and adults. Their results showed similar or higher immune responses with the Tdap + adjuvant vaccine with a similar safety profile when compared to Tdap alone.

14

“Multiple Questions About Protection From Respiratory Syncytial Virus”.

Published: Pediatr Infect Dis J 2024; 43(9): 867–8. <https://doi.org/10.1097/INF.0000000000004425>

Editorial comment: As an addition to our “Coffee with the Expert” section, Prof. Stanley Plotkin provides clear insights and addresses any doubts regarding RSV vaccination during pregnancy, as well as passive immunization for infants.

15

“The Effect of COVID-19 Vaccination on Outpatient Antibiotic Prescribing in Older Adults: A Self-Controlled Risk-Interval Study”.

Published: Clin Infect Dis 2024; 79(2): 375–81. <https://doi.org/10.1093/cid/ciae182>

Editorial comment: An interesting Canadian, retrospective study, in which SARS-CoV-2 vaccination in adults > 65 years old was associated with reduced antibiotic prescription.

16

“Multisystem inflammatory syndrome in children across 16 Latin American countries: A multicenter study from the REKAMLATINA Network”

Published: IJID Regions 2024; 12: 100419. <https://doi.org/10.1016/j.ijregi.2024.100419>

Editorial comment: This study is one of the largest descriptive analyses of MIS-C worldwide, encompassing an observational, retrospective, and prospective multicenter approach. Data was collected from 84 participating centers across 16 Latin American countries between August 1, 2020, and June 30, 2022, with 1,239 reported cases of MIS-C in children.

17

“Comparison of protection against mpox following mRNA or modified vaccinia Ankara vaccination in nonhuman primates”.

Published: Cell 2024 (Sept 4th). <https://doi.org/10.1016/j.cell.2024.08.043>

Editorial comment: An experimental mRNA vaccine against Mpox developed by Moderna (mRNA-1769) outperformed in animal studies the live virus attenuated vaccine by Jynneos. The new mRNA vaccine, which carries the information to generate four Mpox viral immunogens, protected macaques, and animals displayed less viral lesions than those administered with the attenuated vaccine. The mRNA vaccine also shortened the period during which the animals exhibited lesions by more than 10 days as compared to Jynneos vaccine. However, these results cannot be extrapolated as a superior vaccine, and Moderna has entered Phase I clinical trials.

Editors Corner

MPOX: A DANGEROUS GAME OF CLADES AND VACCINE INEQUITY



The monkeypox virus (MPXV) was discovered in 1958, following two outbreaks of a pox-like disease in colonies of monkeys kept for research purposes. Despite the name “monkeypox,” the true source of the disease remains unknown. Many scientists suspect that African rodents and non-human primates may carry the virus and transmit it to humans. The first human case of mpox was reported in 1970 in what is now known

as the Democratic Republic of the Congo (DRC). In 2022, mpox spread globally, whereas previous cases outside endemic regions were rare and typically linked to travel or the importation of animals from areas where the virus is endemic.

Mpox transmission occurs through direct or close contact with an infected human or animal and through contact with contaminated materials.

There are two types of MPXV: Clade I and Clade II.

There are two types of MPXV: Clade I and Clade II, with their respective subclades.

Clade I Is endemic to Central Africa. Causes more severe illness and has a higher mortality rate.

Clade Ia:

- Endemic in DRC / Central and East Africa
- Affects mostly children, various modes of spreading.

Clade IIb (September 2023):

- Current outbreak in /around DRC
- Affects mostly adults
- Spread predominantly by intimal contact (sexual networks), less by other routes.

Clade II Is endemic to West Africa and is responsible for the global outbreak that began in 2022 (subclade 2a).

Clade IIa:

- Endemic in West Africa for decades

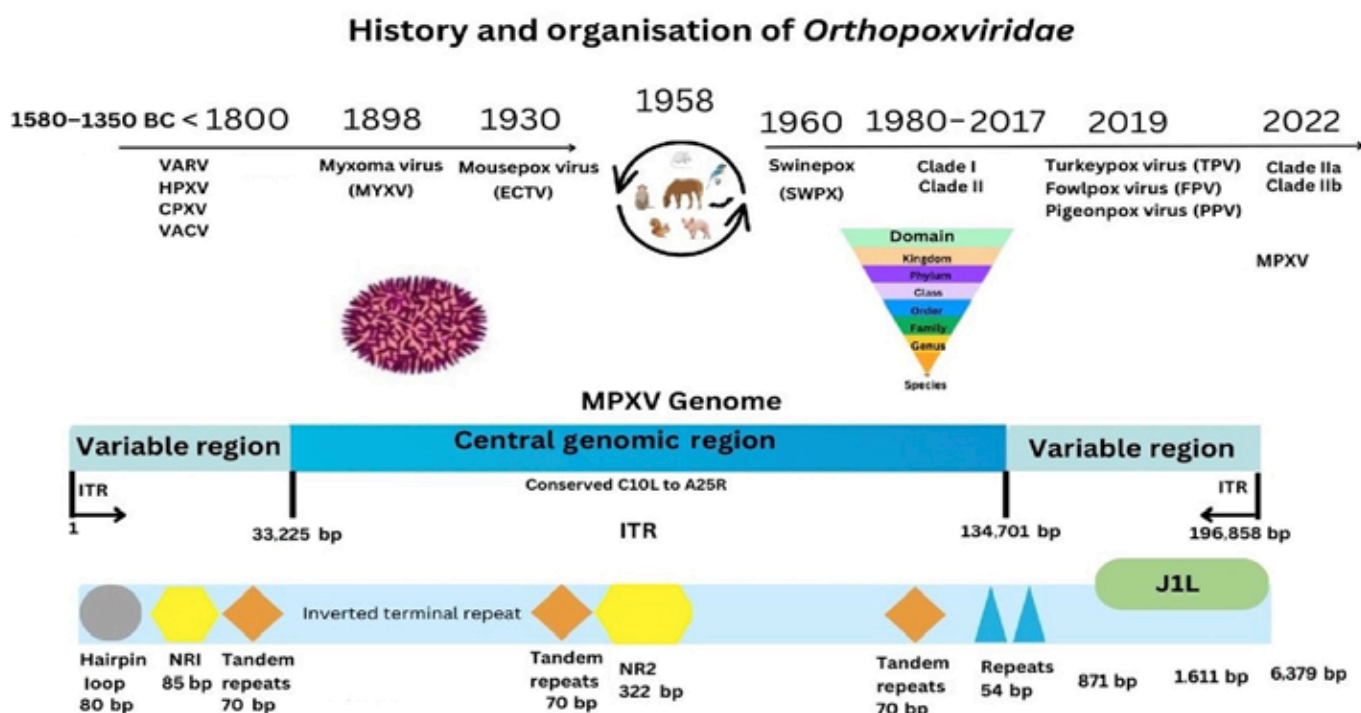
- Low incidence
- Various transmission routes like clade 1a.

Clade IIb:

- Originated in 2022/2023 global outbreak
- >96% men, primarily sexual contact

The clades of the monkeypox virus (MPXV) differ in infection fatality rates (IFR). Clade I (Congo Basin and Nigeria) has an IFR of up to 10%, while clade IIa (West Africa) and the more recent clade IIb are estimated to have an IFR between 1.0% and 3.7%. Transmission rates, measured by the basic reproduction number (R_0), are important for understanding spread. A recent study estimated the R_0 of MPXV to be around 2.44, higher than previous estimations.

The following figure graphically explains the history of *Orthopoxviridae* pointing out at the end the presence of the two clades of the monkeypox virus (figure taken from: Brown B, et al. Immunopathogenesis of Orthopoxviridae: insights into immunology from smallpox to mpox. *Explor Immunol* 2023; 3: 525-53).



Clade I Ib outbreak:

On May 21, 2022, the WHO announced that 92 confirmed cases of mpox had occurred in 12 countries outside the endemic areas in Central and West Africa. On July 23, 2022, the WHO Director-General declared this mpox outbreak a public health emergency of international concern (PHEIC). As of October 11, 2023, 90,656 confirmed mpox cases had been reported from 115 locations worldwide.

Even though mpox was endemic in the sub-Saharan Africa, epidemiological, clinical, and virological data from the 2022–2023 outbreak, indicate that transmission through sexual contact, both penetrative and non penetrative, is more effective than transmission through casual skin-to-skin contact. Furthermore, there is a study across 16 countries in which 647 mpox cases were compared. It was noted that of these, 524 (80.9%) affected individuals were middle-aged men who have sex with men (MSM), of which 483 (92.2%) reported sexual contact, a unique clinical feature of this mpox outbreak.

These recent findings during the 2022–2023 outbreak corroborate the idea that the historical paradigm of MPXV ecology, evolution and epidemiology has changed, posing new challenges for the prevention and control of mpox.

Clade Ib outbreak:

In August 2024, the WHO Director-General determined that the upsurge of mpox in the DRC and a growing number of countries in Africa constitutes a PHEIC under the International Health Regulations (2005) (IHR).

The clade Ib MPXV outbreak that began in September 2023 in the DRC has been growing, with an increasing number of cases in the country and spreading to neighboring nations. Burundi, Kenya, Rwanda, and Uganda have each reported their first mpox cases, several of which have travel links to the eastern regions of the DRC. However, some European and Asian countries have reported cases where clade Ib MPXV has been identified. According to available epidemiological data, this clade is spreading rapidly among adults through close physical contact, including sexual contact within networks of sex workers and their clients. As the virus continues to spread, the



Creator: Dado Ruvic | Credit: REUTERS

affected groups are expanding to include children, with transmission also occurring within households and other settings.

Why is there a change in the epidemiology of MPXV?

Sexual transmission: Though not confirmed, hypotheses such as the size of the inoculum may be higher, the anatomical site of infection, in addition to a prior sexually transmitted disease may increase the likelihood for transmission.

Genetic changes (new clades): Genetic changes, such as the emergence of new clades like clade I Ib, have influenced the epidemiology of MPXV, especially during the 2022–2023 outbreak (which is still ongoing to some degree). The sequences collected during the 2022 outbreak show about 50 single-nucleotide polymorphisms (SNPs) different from pre-outbreak sequences. This suggests an unexpectedly high mutation

rate for the typically slow-evolving double-stranded DNA Orthopoxvirus. However, further genetic studies are needed to better understand the clade Ib driving the current outbreak.

Lessons learned and actions to be taken:

MPXV has likely circulated in Africa for centuries, with transmission occurring either zoonotically or from human to human. Despite its presence on the continent, intensive preventive measures, such as vaccination, have not been widely implemented.

Increased human travel and migration, combined with environmental changes and risky behaviors, contribute to viral mutations and the spread of diseases. Mpox appears to be no exception to this trend.

Mpox vaccination for high-risk populations (e.g., MSM) and all identified contacts, as recommended by the WHO and CDC, should be implemented globally without delay.

However, a global strategy requires both funding and political will.

Bavarian Nordic, the manufacturer of the Jynneos vaccine, informed Africa CDC it could supply up to 2 million doses in 2024 and manufacture up to 10 million doses by the end of 2025. However, these efforts are limited by the vaccine's prohibitive price: approximately \$200 per course. That steep

cost is why mpox vaccines never reached Africa after the 2022 outbreak, and it remains unclear how vaccine procurement will be funded now.

The United States has offered 50,000 Jynneos doses from its national stockpile, and the European Union has ordered 175,000, with individual member countries pledging additional doses and Bavarian Nordic adding another 40,000. Japan has offered 3.5 million doses of LC16m8 (another mpox vaccine which requires only one shot instead of two).

Gavi, the Vaccine Alliance, has introduced a new US\$2.5 billion Day Zero Financing Facility designed to provide immediate liquidity for vaccine purchases in the event of a global pandemic. This facility is the first proof of concept for a new collaboration among development finance institutions aimed at providing surge financing for medical countermeasures during pandemics. Following WHO's designation of mpox as a public health emergency of international concern (PHEIC) on August 13, 2024, the Gavi fund is already being tested. On August 26, the WHO published its response plan for mpox, requesting \$135 million from donors to finance it.

We must remember that any endemic transmissible disease can potentially spread globally, regardless of the region—a lesson that is finally beginning to resonate.

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Best Practice

SIMPLIFIED RABIES VACCINE SCHEDULES

Rabies is a viral zoonotic disease responsible for an estimated 59,000 human deaths and over 3.7 million disability-adjusted life years (DALYs) lost every year.

As a result of acute progressive encephalitis, rabies is almost invariably fatal once clinical signs appear.

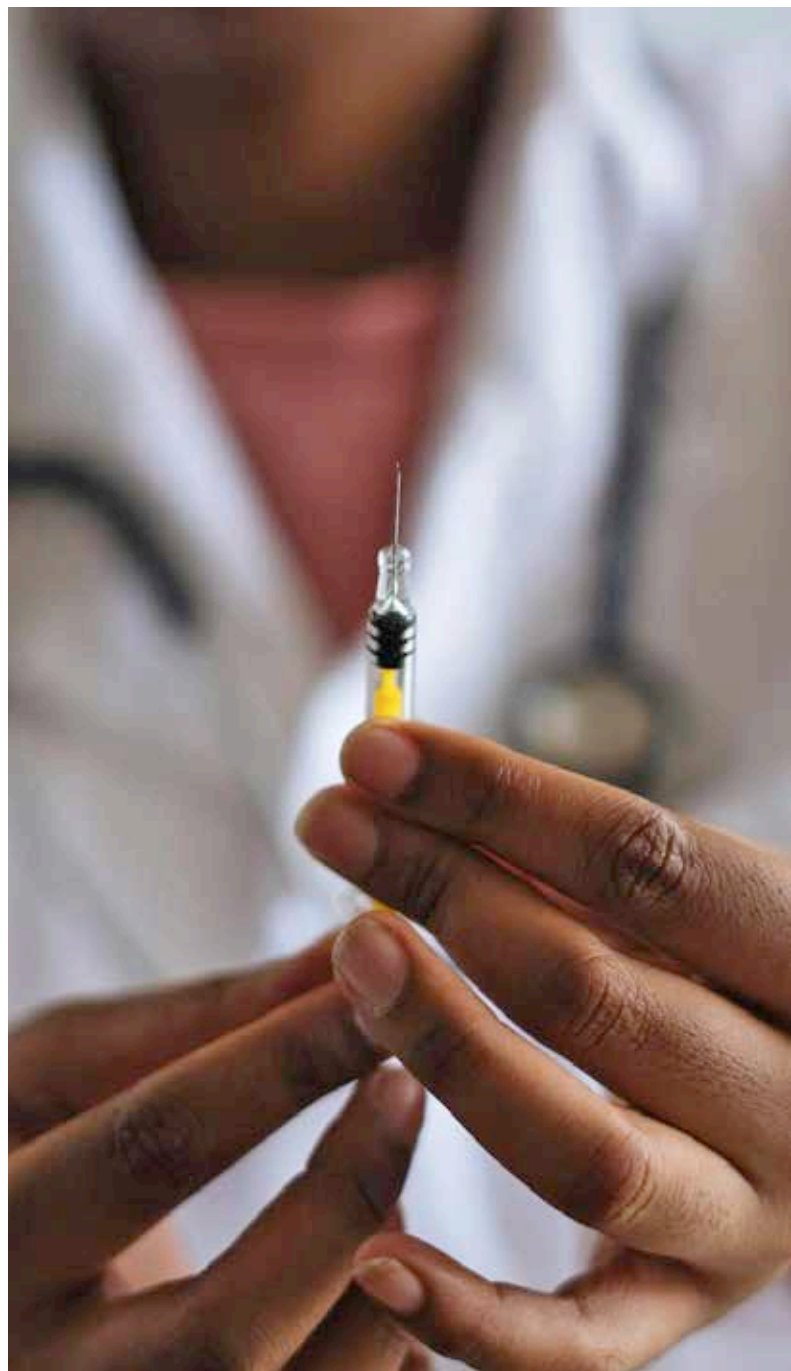
Most cases occur in Africa and Asia, with approximately 40% of cases in children aged <15 years. All mammals are susceptible to infection by the rabies virus (RABV). Transmission of RABV by dogs is responsible for up to 99% of human rabies cases in rabies-endemic regions, with a small proportion due to transmission via wildlife (such as foxes, wolves, jackals, bats, racoons, skunks, and mongoose, among many others).

Prevention

Rabies is a vaccine-preventable disease in both humans and animals. Prevention relies heavily on the awareness of at-risk populations about the disease.

Human rabies vaccination is primarily used for postexposure prophylaxis (PEP), but also as preexposure prophylaxis (PrEP) in populations at high risk of infection.

Although there is no established correlate of protection for rabies, induction of a peak antibody response at or above the minimum acceptable antibody titer level (≥ 0.5 IU/mL) in response to the rabies vaccine serves as an indirect measure of protection (i.e. immunogenicity). Primary immunogenicity refers to immunogenicity that peaks 2–4 weeks after completing the recommended vaccination or vaccinations and elicits an anamnestic response to rabies virus exposures. Since publication of the 2008 ACIP recommendations, researchers have been evaluating data concerning the efficacy of shorter rabies PrEP dosing regimens.



Recent data indicate that PEP and PrEP regimens can be shortened in duration and number of doses required. Evidence of non-inferiority compared to current WHO recommended PEP regimens showed that intradermal (ID) PrEP regimens in adults can be shortened to 1 week with 2-visit (days 0 and 7).

Recent reviews show that more than 99% of the subjects tested within one week after having received a simulated PEP schedule had seroconverted (RVNA levels ≥ 0.5 IU/mL), regardless of the vaccination schedule used for the PEP, or the time delay between PrEP and PEP, which varied greatly between the different studies included (between 2 and 28 months). This suggests that single visit PrEP schedules would be sufficient to “prime” the immune system of most healthy, immunocompetent individuals. The fact that almost all patients which received a simulated PEP seroconverted within seven days regardless of the test used is very encouraging.

Single visit PrEP schedules seem promising in priming the immune system of most healthy, immunocompetent individuals to be able to elicit an adequate immune response against rabies after receiving booster PEP vaccination. Nonetheless, more studies are needed to confirm the efficacy of single visit PrEP schedules in real-life settings.

Rabies represents an unremitting and neglected global challenge. As such, new shortened ID schedules aim to be cost-dose and time-sparing, while maintaining safety and effectiveness. Safe and effective PrEP for travelers or people living in endemic rabies regions may be achieved with a double-dose 2-visit 0.1ID regimen, with 100% adequate antibody response following a booster injection of 0.1ID 1–3 years after primary vaccination.

Whether this schedule is safe and effective for children in low-income countries still needs urgent investigation.

The World Health Organization (WHO) 2018 guidelines revised and shortened PrEP, currently only recommending 2-visit schedules (double-dose ID or single-dose intramuscular vaccines



administered on days 0 and 7) instead of the previous 3-visit schedules (adults only).

For a disease with virtually 100% case-fatality rate, PEP schedules with failure rate of 1% or higher are extremely concerning. The conclusions should be interpreted with caution, given the limited evidence (i.e. 4 studies and < 500 participants).

Recent studies demonstrated that PrEP using one-site IM and small vaccine doses (such as one- and two-site 0.1 ml ID) may be sufficient to prime the immune system; but a two-visit (on days 0 and 3) PEP is needed to rapidly boost antibodies to adequate levels in the event of potential rabies exposure. Studies investigating one-visit PrEP must include two-visit PEP to get an accurate assessment of the PrEP priming capacity.

Future studies should further investigate one-visit (one- and two-site) ID/IM PrEP which may be a cost-effective strategy, especially for people (children and adults) with risk of rabies exposure for short periods of time, such as travelers and others at high-risk.

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Guest Contributors



THE IMPORTANCE OF MEASURING VACCINE CONFIDENCE AND ACCESS

Bunge and Born Foundation

According to the World Health Organization (WHO) vaccination prevents between 2 and 3 million deaths each year and, alongside clean drinking water, is one of the most successful public health interventions in preventing infectious diseases. While the widespread use of vaccines has led to the decline of many diseases, there are still many people, especially children, who should be vaccinated but are not. This can be attributed to multiple factors: issues with vaccine access (temporary shortages or other barriers that hinder or prevent vaccination) or vaccine hesitancy, which causes people to delay or refuse vaccination.

Argentina boasts one of the most comprehensive vaccination schedules globally, covering a wide range of needs from childhood to adulthood,

including specific vaccines for pregnancy and international travel³. Despite this comprehensive program, vaccination coverage, while relatively high, still falls short of reaching the entire target population, reflecting a trend seen worldwide.⁴

In light of this, in 2019, the Bunge and Born Foundation (B&B Foundation) set out to annually survey vaccine confidence levels in the Argentine population and identify the barriers people face in successfully accessing vaccination. With the onset of the pandemic in 2020, and especially the crisis of misinformation that followed, it became clear that analyzing these aspects (confidence and access) is essential to understanding what drives variations in coverage rates. This led to the development of the

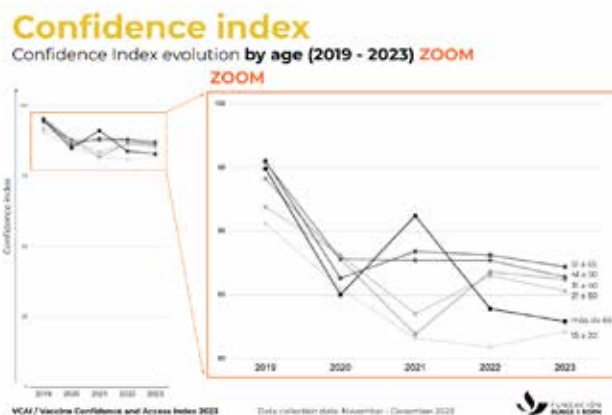
Vaccine Confidence and Access Index (VCAI).

Methodologically, the VCAI is built on data collected through a nationwide survey targeting individuals aged 15 and older. The survey utilizes a structured questionnaire administered via an Interactive Voice Response (IVR) system: mobile phone users receive a call with a recorded voice posing questions and providing answer options, which participants select by pressing the corresponding numbers on their phones. The survey is representative of the diversity of the country in terms of geography, age, gender, and education levels, among other parameters. The total sample size for the survey is approximately 7,000 complete responses in each measurement applied yearly.

From the collected data, two indices are developed: one for confidence and another for access. The Vaccine Confidence Index™ (VCI), part of the Vaccine Confidence Project, served as the basis for constructing the confidence index. The VCI was created in 2015 by Dr. Heidi Larson’s team at the London School of Hygiene & Tropical Medicine. For the access index, the B&B Foundation followed the guidelines set forth by the Strategic Advisory Group of Experts (SAGE) in 2022, which provide a series of key points for analyzing access conditions. These guidelines were adapted to the Argentine context and methodology for proper implementation.

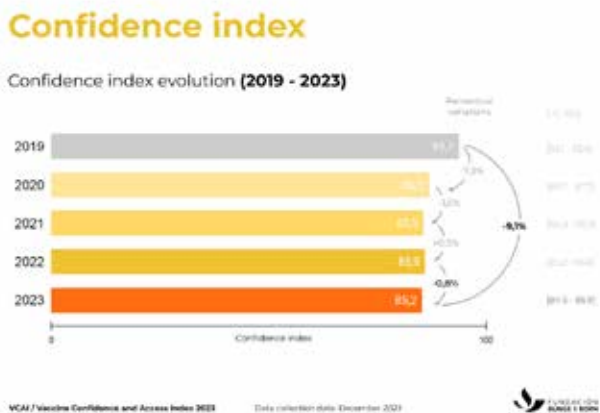
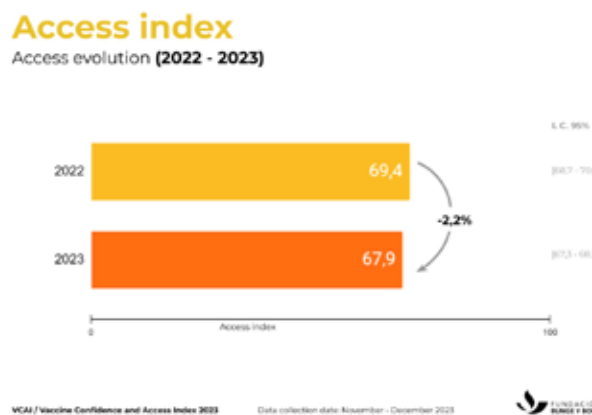
Among the most notable findings from recent measurements, particularly in relation to the confidence dimension, is the significant

drop in confidence levels in 2020, which have not recovered to pre-pandemic levels:



Additionally, a second observation reveals a more pronounced decline in confidence among younger respondents (those aged 15 to 20):

Regarding the access index, in its second measurement (the new methodology was implemented in 2022), two important aspects also

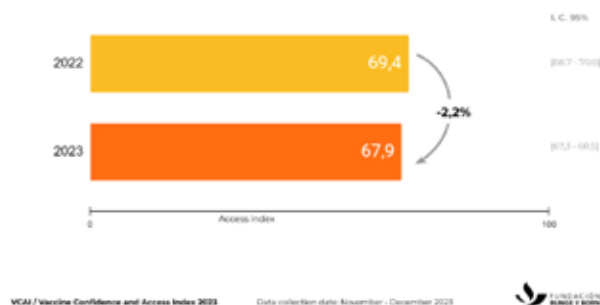


stand out. First, there is a decrease in the overall access index, which highlights a significant opportunity for improving access conditions:

Finally, and even more concerning, are the results on access levels based on educational attainment,

Access index

Access evolution (2022 - 2023)



which show that those with lower educational levels face the worst access conditions. This is particularly worrying, given that education level is a reliable proxy for socioeconomic status.

These are just a few examples of the valuable insights generated by the VCAI. Recognizing the importance of this type of study and the rigorous methodology behind it, the journal *Vaccine* recently published the findings, along with the methodological standards used in the development of the index.

The significance of these measurements, which have been conducted continuously from 2019 to the present, lies in generating knowledge useful to society at large, and particularly to public policy decision-makers. Through the VCAI, they can access up-to-date, detailed information on vaccine confidence and access levels. The B&B Foundation hopes that this information will contribute to improvements in the design of immunization programs and strategies and guide a more efficient allocation of human and financial resources within the framework of public health policies.

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7. To access the full article: <https://doi.org/10.1016/j.vaccine.2024.06.037>.



VACCINES BEAT

Who we are

At Vaccines Beat, we understand that vaccines and immunization have become a crucial topic of discussion at the center of any public health analysis. Therefore, timely, relevant, accessible, and well-curated information for all vaccine preventable diseases is key to advancing better health policies.

For this reason, a team of passionate vaccine professionals has created Vaccines Beat and each month diligently works to share with the healthcare ecosystem information, knowledge, and insights to improve global health.

Vision

Vaccines Beat aims to become the beacon of insight in the public health ecosystem through its distinctive monthly newsletter. With an in-depth 360 perspective, carefully curated information and expert analysis, this novel platform fosters collaboration among a diverse global network of stakeholders.

Mission

Vaccines Beat's main task is to inform through the review of the most recent developments in vaccines, immunization, and vaccine preventable diseases. Our mission extends to sharing best practices from successful initiatives worldwide while building bridges through editorial collaboration with regional and international stakeholders.

Vaccines Beat highlights the importance of information sharing & collaborative efforts within the public health community to boost vaccination campaigns, R&D, public policy, access, awareness, and equity.

Vaccines Beat encourages stakeholders to take action and promote sustainable commitment with continued support through multi-stakeholder synergies.

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