

II Actualització Malalties Infeccioses a l'Atenció Primària



Dra. Cristina Regata

Microbiologia y Parasitología clínica (H. Clínic i Provincial)
Medicina Familiar y Comunitaria (UdG)

Revisión bibliográfica

Barcelona, 28 de març de 2025

Actualización en enfermedades emergentes



Fuentes/Index:

PubMed/

Int J Infect Dis./ International Journal of Tropical Diseases/ Enfermedades Infecciosas y Microbiología Clínica/

OMS

vacunas, Female Genital Schistosomiasis, Mpox, Lepra, arbovirus,
Measles

Tammy Allen **Next-generation vaccines for tropical infectious diseases**

International Journal of Infectious Diseases, 2024-06-01, Volumen 143, Artículo 107014

Vacunas: Dengue/ Schistosoma/parásitos/F. Tifoidea

.**TAK-003** a recent candidate is a significant advancement to **Dengvaxia**.

- **Combination vaccination** could have an extraordinary impact on **schistosomiasis** control.
- New concepts on how to rationally design hookworm subunit vaccines.
- **Typhoid conjugate** vaccines will reduce the global burden of typhoid fever.

Dengue:

New dengue vaccines are on the horizon: challenges and opportunities

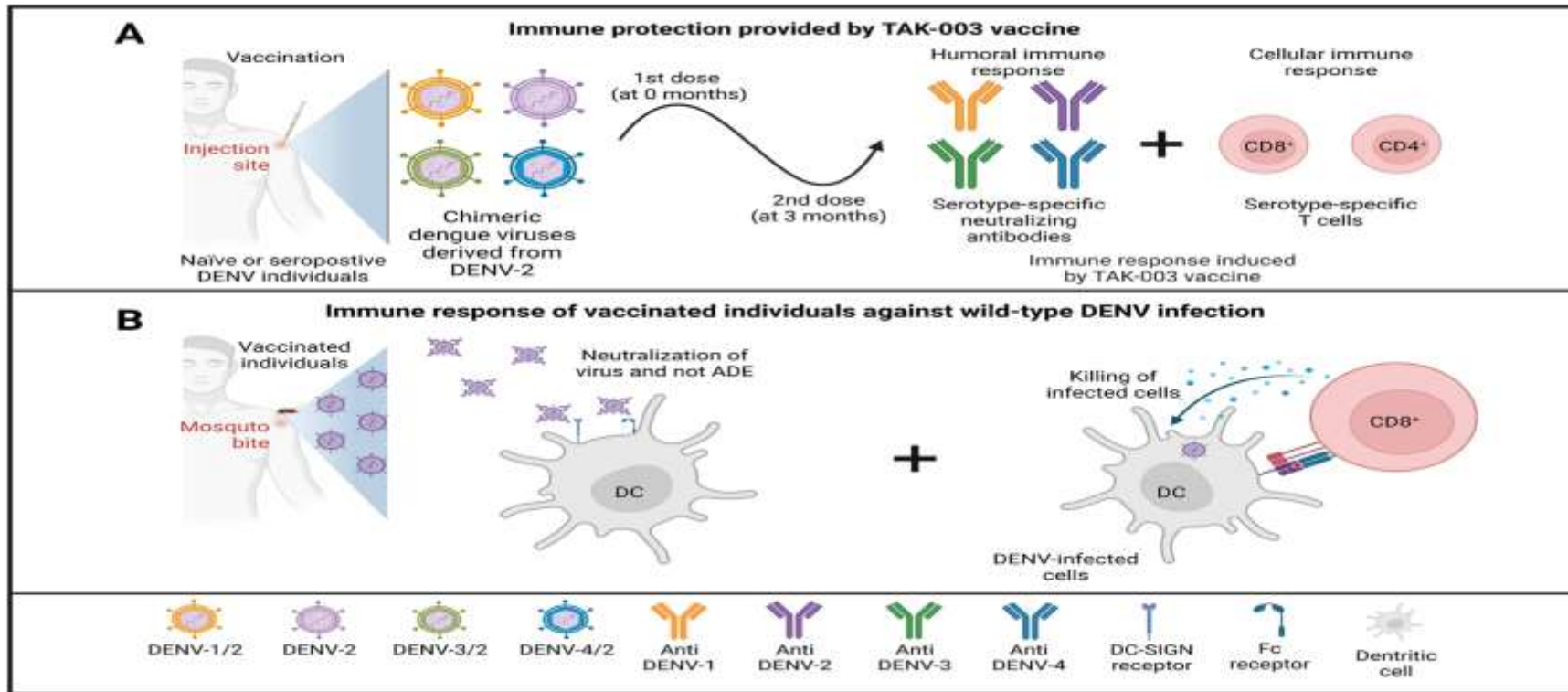
Given the challenges for implementing sustainable vector control measures and the lack of dengue antivirals, the need for a vaccine is critical [6]. In recent years, several vaccine candidates have been developed, with a focus on targeting either the **structural E protein** or the **nonstructural protein NS1**.

A recent review has comprehensively summarized the characteristics of nine dengue vaccine candidates, each of them at different stages of development [7]. Here, we will focus on three live **attenuated vaccines** from which **phase III** results are currently available: CYD-TDV (**Dengvaxia**), TV0003/Butantan-DV, and TAK-003 (**Qdenga**)

*Record.: Dengv USA, serol. prev +/- Qdenga: Spain (feb24'): niños >4a, sin serol

ADE, antibody-dependent enhancement; DC, dendritic cells; DENV, dengue virus

*TAK-003. 1^a dos-3m-2^a dosis: protege frente a los 4 serotipos



Respuesta inmune humoral y celular

Illustration of hypothetical immunity protection provided by **TAK-003**. (a) Panel shows the immune protection in individuals who are naïve or DENV-seropositive provided by two doses of the TAK-003 vaccine (chimeric dengue viruses for each serotype derived from DENV-2), which includes the **humoral (serotype-specific neutralizing antibodies) and cellular immunity** (serotype-specific T cells).

(b) Panel shows the immune response of vaccinated individuals against wild-type DENV infections, which is mediated by neutralizing antibodies before the virus interacts with DCs, not resulting in antibody-dependent enhancement but killing of infected cells via cytotoxic cells

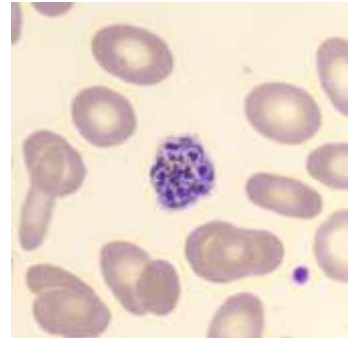
Hookworms: vaccine updates (*Ancylostoma*)

There are several hookworm vaccines that have been tested in animal and human trials, primarily, live attenuated or subunit parasite protein vaccines. X-irradiated and attenuated ***Ancylostoma caninum*** L3 larval vaccines were **efficacious in dogs** with induction of immunoglobulin (Ig) G, interleukin (IL)-4, and strong peripheral blood mononuclear cell proliferation to crude L3 [\[14\]](#) . Building from this early study, the first ever trial in humans of a live ultraviolet-C attenuated larval vaccine was recently shown in humans affected by ***Necator americanus*** to be **safe, immunogenic, and potentially protective**



A vaccine against *P. vivax* : a reality or a dream?

The progress of vaccine studies in *P. vivax* have been persistently slow because of multiple reasons, including **major gaps in knowledge of its biology**. Despite such setbacks, the revised Malaria Vaccine Technology Roadmap to 2030 [21] calls for a next-generation vaccine to achieve **75% efficacy against *P. falciparum* and *P. vivax***.

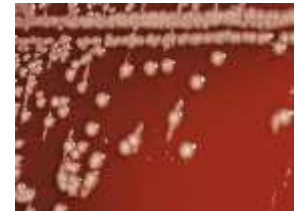


Typhoid fever: the dawn of universal typhoid fever prevention by **typhoid conjugate vaccines**

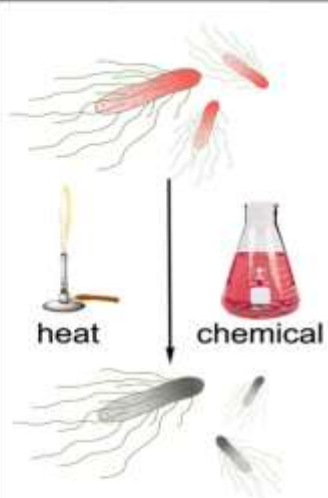
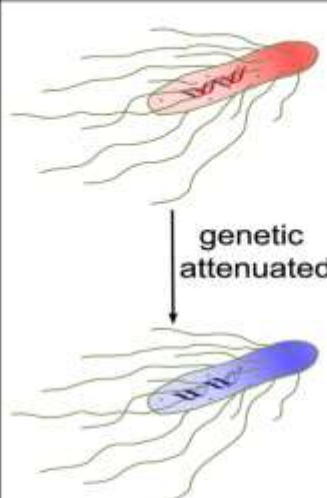
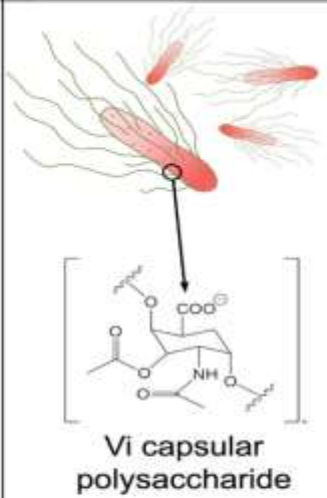
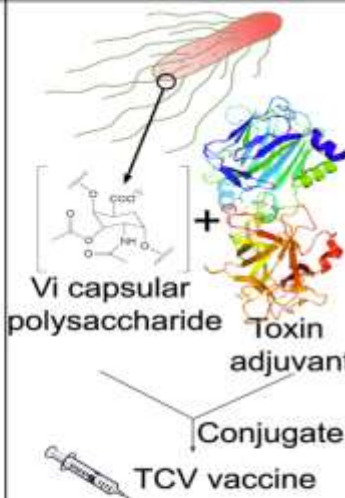
The first-generation typhoid vaccines were inactivated *S. Typhi* bacteria prepared by chemical or physical **inactivation of *S. Typhi* in 1896** ([Figure 2](#)).

Efficacy studies performed in 1960 confirmed that such vaccines provide **65-80% protection for up to 7 years**. However, **side effects**, such as fever and systemic reactions, have prevented this vaccine from being approved as a routinely used public health intervention and it was mainly given to **military personnel**.

A subsequently developed chemically mutagenized live attenuated vaccine (**Vivotif Oral**) emerged in the **1980s**. Because of its **repeat dose** scheduling, the need for a **cold chain** and recommendation for use in people **aged ≥ 6 years**, this vaccine is mainly given to **travelers** but is not WHO-prequalified.



TCV, typhoid conjugate vaccine

Vaccine type	Inactivated vaccine	Attenuated vaccine	Subunit vaccine	TCV
Vaccine preparation	 heat chemical	 genetic attenuated	 Vi capsular polysaccharide	 Vi capsular polysaccharide Toxin adjuvant Conjugate TCV vaccine
First developed	19th century	1970s	1980s	2000s
Protection duration	7 years	2.5-3 years	3 years	>7 years
Coverage	Adult; Military person	>6 years old; traveler	>2 years old	All age groups
Side effects	High	Low	Low	Low

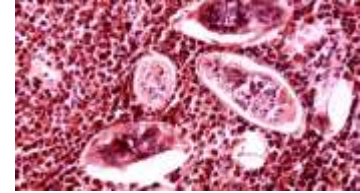
Schistosomiasis: heterologous prime-boost immunization may promote antibody onslaught against schistosome tegument



Although progress has been made in the past **30 years**, including the discovery of two potential vaccines, *Sm* -TSP-2 [35] and *Sm* -p80 [36] , for the prevention of schistosomiasis, **the parasite's ability to evade the host's defenses** has hindered development of a single target-based vaccine for public use. Here, we look at the rationale for and prospective outcomes of **combining multiple lead vaccine candidates to synergistically boost the immune system and improve vaccine efficacy**



Benedetta Rossi **Female Genital Schistosomiasis: A Neglected among the Neglected Tropical Diseases;** *Microorganisms*. 2024 Feb 24;12(3):458



Schistosomiasis is a neglected parasitic disease linked to water, posing a global public health concern with a significant burden in **sub-Saharan Africa**. It is transmitted by *Schistosoma spp.*, causing both acute and **chronic effects** affecting the **urogenital or the hepato-intestinal system**. Through **granuloma** formation, chronic schistosomiasis **weakens host immunity, heightening susceptibility to coinfections**. Notably, female genital schistosomiasis (FGS), a disregarded gynecological condition, adversely affects girls' and women's reproductive health and **increases vulnerability to HIV**



Introducció: Female genital schistosomiasis (FGS)

Parasitic gynecological condition that is often underreported, misdiagnosed, and consequently largely untreated

FGS represents a **chronic manifestation of urogenital schistosomiasis, a water- and poverty-related-disease that exposes women to the risk of poor sexual and reproductive health**, including **complications during pregnancy or infertility**, along with an **increased susceptibility to acquire sexually** transmitted diseases such as HIV

Caused by the blood trematode ***Schistosoma* spp.**

Female genital schistosomiasis (FGS)

Parasitic disease affects almost **240 million** people worldwide, with at least **90%** living in **sub-Saharan Africa**

Highest prevalence of infection is observed among individuals **aged 5–15 years**, **water-related activities**

Six major species in the genus *Schistosoma* significantly contribute to disease morbidity in humans: *S. mansoni*, *S. japonicum*, *S. intercalatum*, *S. guineensis*, and *S. mekongi* (mainly responsible for the hepato-intestinal form), and ***S. haematobium*** (for the urogenital form)

S. haematobium is the primary species implicated in **FGS (affecting 50–80% of women parasitized by this species)**

Most schistosome infections often manifest as **asymptomatic or paucisymptomatic f.(60%)**



Schistosomiasis-Cancer

S. japonicum might be a contributing factor to the development of **colorectal cancer**

S. hematobium has been linked to **urinary bladder cancer** (*hematuria :pc paràsits en orina)

Moreover, **genital schistosomiasis** might contribute to establishing **persistent HPV infection**, potentially contributing to the development of **high-grade squamous intraepithelial neoplasia**



Schistosomiasis: Clinical Manifestations

Cercarial dermatitis, swimmers' itch, and Katayama fever, all linked to **systemic hypersensitivity** reactions and immune complex formation against schistosome antigens. This acute phase often exhibits **hypereosinophilia in peripheral blood, and serologic tests** typically yield positive



Female genital schistosomiasis is mainly caused by *S. haematobium*

Parasite embolization [41]. Reported cases include ovarian localization due to female genital schistosomiasis caused by *S. mansoni* ; traverse extensively anastomosed **abdominal and pelvic blood vessels**

Upon egg deposition in female genital tissue, chronic inflammation ensues

Clínica/Tratamiento

Painful, and stigmatizing symptoms such as **leucorrhea, vaginal discharge, itching (picor), contact bleeding, chronic abdominal pain, dyspareunia, and menstrual cycle abnormalities**, all stemming from pathological changes in the genital mucosa

Colposcopy, typically present as sandy **patches and rubbery papules** [46]. Unrecognized and untreated female genital schistosomiasis can elevate the risk of acquiring STIs, including **HIV**. Additionally, it may lead to **chronic inflammatory pelvic disease**, subsequently causing **salpingitis, infertility, ectopic pregnancy, and benign tumors such as cervical intraepithelial neoplasia (CIN) induced by Schistosoma**.

Diagnostico: *PCR , serología , ultrasound, endoscopy, or biopsy*

Ttamiento: **PZQ (Praziquantel)** is a drug effective only against adult worms but not eggs or young worms. Its minimal side effects and low resistance make it suitable for use during pregnancy, lactation, and childhood. PZQ is pivotal in **preventing disease complications and minimizing lesions** [86]. WHO recommends a single course of PZQ as the gold standard treatment for urogenital and hepato-intestinal schistosomiasis in endemic areas.



4000 new HIV infections globally occurring weekly.

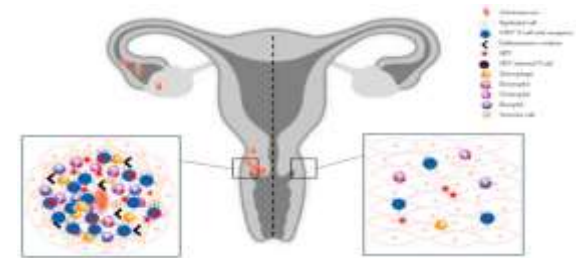
In 2022, women and girls of all ages accounted for 63% of all new HIV infections in SAA [90].

For instance, in countries like Ethiopia, Nigeria, South Africa, Zambia, and Zimbabwe, adult HIV prevalence ranges from 15% to 28%, while the prevalence of schistosomiasis commonly exceeds 50% in high-risk rural communities.

FGS can increase the risk of **horizontal transmission of HIV** by up to three times

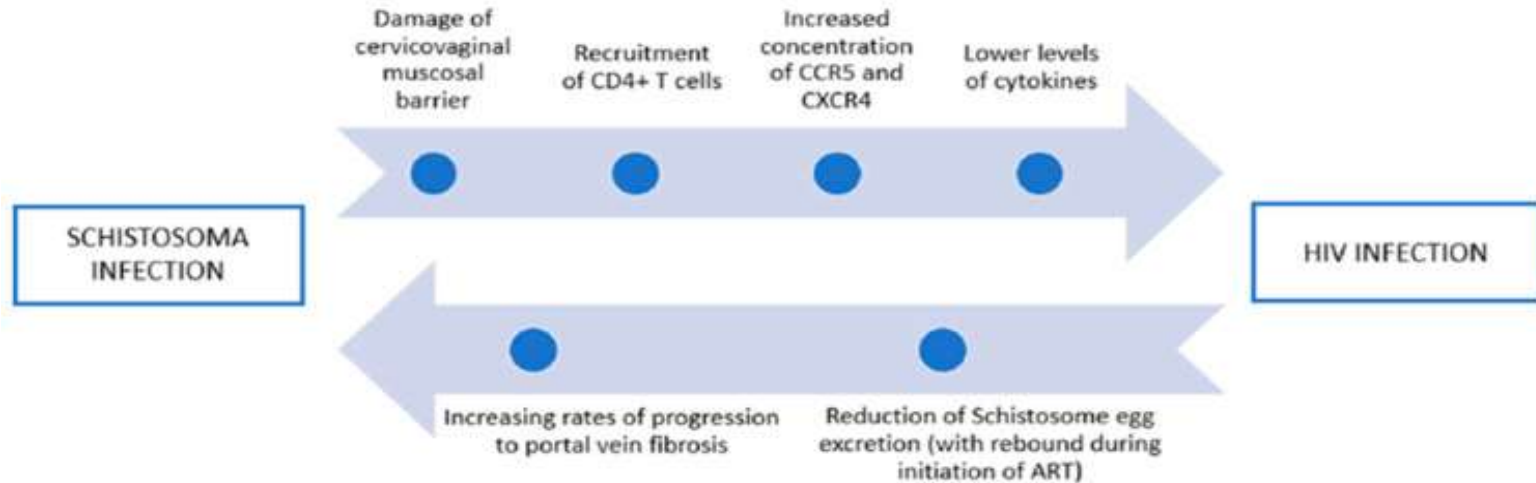
*Fig.: *S. haematobium* infection triggers a **granulomatous response, with an increased CD4+ T-cells** recruitment, cytokine and chemokine expression, and others' inflammatory cell attraction. This condition increases the **host cells' susceptibility to HIV invasion**.

The abnormal formation of new blood vessels around trapped ova weakens the vaginal mucosa, compromising its physical barrier role.



Elevated chemotactic and inflammatory cytokine concentrations in the vagina can disrupt the expression of proteins associated with cervicovaginal epithelium integrity, potentially increasing susceptibility to HIV infection

HIV might accelerate the progression to portal vein fibrosis in people infected with *S. mansoni*



HIV-associated immune reconstitution inflammatory syndrome (IRIS) refers to the clinical worsening of an **opportunistic infection**, often involving tissue-destructive inflammation, after the start of antiretroviral therapy (ART).

While the vast majority of pathogens associated with IRIS are **mycobacterial, chronic viral, and invasive fungal infections**, the co-endemic nature of schistosomiasis and HIV has raised the possibility of IRIS linked to schistosome infection

Seth D Judson, **Mpox: What Have We Learned and How Do We Better Prepare for the Future?** *The Journal of Infectious Diseases*, jiaf040,

<https://doi.org/10.1093/infdis/jiaf040>

Published: 17 January 2025



The global **outbreak of clade IIb mpox in 2022–2023** changed our understanding of the epidemiology and prevention of mpox, simultaneously highlighting inequities in access to vaccines, diagnostics, and therapeutics

Mpox, formerly known as monkeypox, is caused by a **zoonotic *Orthopoxvirus***, mpox virus (MPXV), which is endemic in West and Central Africa. Phylogenetically, MPXV is split into clade I (subclades Ia and Ib) and clade II (subclades IIa and IIb), which may differ in terms of origins, transmission, and pathogenesis [1–3].

Despite the first human case of mpox being identified in the Democratic Republic of the Congo (DRC) in 1970 [4], and multiple subsequent outbreaks on the African continent, mpox remained a neglected infectious disease until the global **clade IIb mpox outbreak occurred in 2022**.calicali

On **23 July 2022**, **clade IIb mpox** was declared a **Public Health Emergency of International Concern** (PHEIC) by the World Health Organization (WHO).

There have been over **100 000** clade IIb mpox cases in 122 countries, and while the PHEIC was declared over on 11 May 2023, there has been ongoing **sporadic transmission** [5].

The global transmission of clade IIb MPXV has occurred primarily via sexual contact among adults, particularly among gay, bisexual, and other men who have sex with men (MSM)

Origins, transmission, and pathogenesis

Prior to the global spread of mpox, cases of clade I and II mpox likely originated from **contact with wildlife**, with small chains of human-to-human transmission [1]. The definitive reservoir hosts for each mpox clade remain unknown.

Clade I MPXV has primarily emerged in **Central Africa** and was isolated from a **rope squirrel that was found near human mpox cases in the DRC**.

Both clades of MPXV have previously caused stuttering chains of transmission among humans in the setting of close contact with **skin lesions and bodily fluids**, and there is **also potential for fomite and respiratory droplet transmission** [14].

Sexual contact was identified as a risk factor for clade IIb mpox and found to be the primary mode of transmission during the global outbreak.



In **April 2023**, there was newly documented sexual transmission of clade Ib MPXV.

There is also evidence of **perinatal transmission of both MPXV clades** .

In contrast to the prior clade IIb mpox outbreak, there has been identified transmission of clade **Ib MPXV among heterosexual sex workers** as well as household transmission to children

The vaccines that have been approved and used during the clade IIb mpox outbreak contain the **modified vaccinia Ankara-Bavarian Nordic (MVA-BN)**. While estimates of the vaccine efficacy (VE) of MVA-BN-containing vaccines for clade IIb mpox have varied, 2-dose series increase efficacy.

A meta-analysis found the VE of **1 dose was 76% and 2 doses was 82%**.

In addition to **preexposure vaccination**, the WHO and Centers for Disease Control and Prevention also recommend vaccination as **postexposure prophylaxis for mpox** in unvaccinated individuals.

Throughout the global clade IIb mpox outbreak, nucleic acid amplification testing via real-time polymerase chain reaction (**PCR**) has been the primary method for diagnosing mpox, and swabs of lesions from different areas should provide sufficient material for diagnosis

Novel point-of-care tests for mpox are needed, especially in resource-constrained settings, to improve **timely diagnosis** of mpox.

With the emergence and spread of clade Ib mpox, it is important to better understand the clinical and virological differences among **clades**.

Equity must be considered in the development and distribution of any new treatments for mpox.

The global outbreak of clade IIb mpox disproportionately affected MSM and **racialized minorities**, and these groups also had a higher unmet vaccination need, reflecting structural health inequities

Dipsikha Aryal, **Situation Analysis of Leprosy in Jhapa District of Nepal**, Int J Trop Dis 2024, 7:080



Mycobacterium leprae is the cause of leprosy, a chronic infectious disease that mostly affects peripheral nerves.

Early diagnosis and treatment of leprosy can avoid impairment as it is a curable illness.

Since December 2009, Nepal has successfully eliminated leprosy as a public health problem, with a declaration of **complete elimination in 2010**.

Eleven local levels in Nepal's **Jhapa district** have a **high prevalence of leprosy (more than one case per 10,000 populations)** 13 years after the disease was declared.

Health services, active case **surveillance, identification, and management**.

Leadership/governance: Political commitment from federal and local level leaders of Jhapa district

active surveillance system to monitor and evaluate elimination activities

Financing Special fund for leprosy should allocate

Health workforce

Formation of Leprosy committee at local level

Medical products/logistics Uninterrupted supply of multi-drug therapy

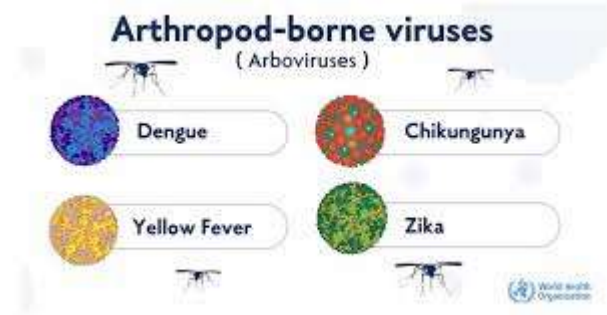
Fernando de la Calle-Prieto, **The current status of arboviruses with major epidemiological significance in Europe;** Enfermedades Infecciosas y Microbiología Clínica Vol. 42. **n9**

Currently, an **increasing impact** of some arboviruses has been observed in Europe, mainly Dengue (DENV), Chikungunya (CHIKV), Zika (ZIKV), West Nile (WNV), and Crimean-Congo hemorrhagic fever (CCHFV) analyzed through a One Health perspective that considers their expansion across the continent. Arboviruses are **primarily transmitted by vectors such as mosquitoes and ticks, with human activities and climate change playing crucial roles in their spread.**

The review highlights the ecological and epidemiological aspects of arboviruses, emphasizing the roles of diverse **hosts and reservoirs,**
including humans, animals, and vectors, in their life cycle

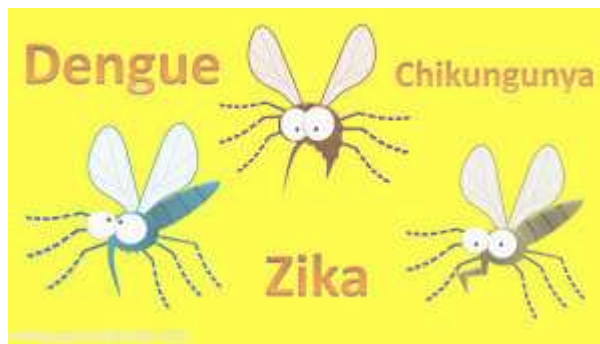


Introducció



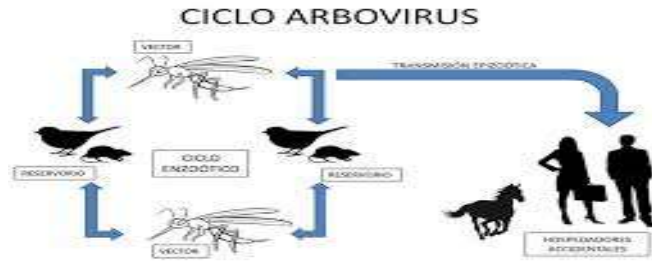
Arthropod-borne viruses (**arboviruses**) are **RNA viruses with a life cycle that requires both a host and a vector**: transmission is preceded by a biological replication in an arthropod vector and these viruses generally circulate among wild animals. **More than 130 arboviruses are known to cause human disease**. Many outbreaks have been registered in Europe during the last years. Climate change, deforestation, traveling abroad and the increase in vector numbers are the main causes of the increase in outbreaks.

Dengue (DENV) and Chikungunya (CHIKV) are among the most diagnosed arboviral infections in travelers, with projections showing an increase in their prevalence.



In Spain, the presence of the TOSV, Granada, NAPV, Sicilia, Arbia and Arrabida-like viruses has been detected.

The widespread presence of vectors of the ***Phlebotomus*** genus, especially *Phlebotomus perniciosus*, in which several of these viruses have been detected, makes it very likely that infections will appear regularly in humans in **Spain with a moderate risk** for the TOSV and a low risk for the others, in areas with greater vector activity.



DENV, ZIKV and CHIKV are transmitted by *Aedes* spp. mosquitoes, with humans representing the amplifying host.

However, ZIKV and CHIKV also circulate in sylvatic cycles in Africa and Asia involving non-human primates and wild *Aedes* spp. mosquito vectors.

Additionally, ZIKV has been observed to replicate in reptiles and amphibians, while rodents and bats may also serve as amplifying hosts of CHIKV, although their significance is less well-established compared to primates

A comprehensive understanding of **zoonotic transmission** of pathogens requires an examination of the three primary mechanisms through which infection is conveyed between humans and animals. The initial mechanism is direct transmission, whereby a vector, enzootic or bridge, transmits the virus from an enzootic host to humans. The second mechanism involves **amplification within domestic animals**, which then transmit the virus to humans. However, humans typically do not develop a significant viremia to sustain further transmission. The third mechanism shifts from an **enzootic cycle to a human–mosquito–human cycle, particularly in urban areas**

Mosquito-borne diseases

Mosquitoes are crucial vectors for many arboviruses of significant epidemiological concern in Europe.

Aedes aegypti and ***Aedes albopictus*** are key vectors for ZIKV, DENV, and CHIKV, and demonstrate distinct characteristics influencing transmission cycles.²*A. albopictus* has notably expanded its presence from 8 EU/EEA countries



Tick-borne disease

Ticks, particularly species such as *Rhipicephalus* spp., *Hyalomma* spp., *Ixodes* spp., and *Dermacentor* spp., play crucial roles in the transmission of arboviruses like CCHFV* (*Crimean–Congo hemorrhagic fever) or TBEV. The rate of CCHFV**-infected ticks ranges from 2% to 4.8% (**encefalitis transmitida por garrapatas)

Hyalomma spp. is present in Southern and Eastern Europe and *I. ricinus* covers a wide geographic region including Scandinavia, British Isles, central Europe, France, **Spain**, Italy, the Balkans, East Europe and North Africa



Ecosystems and human intervention

Ecosystem transformations significantly impact the vectors' geographical distribution and enzootic/zoonotic transmission cycles. For instance, areas with extensive forest cover have been negatively associated with the population density of *C. pipiens* (*Culex mosquito*). In contrast, suburban and agricultural areas have higher populations of these mosquitoes, increasing the risk of viral transmission, while highly urbanized areas are at lower risk because they have fewer suitable habitats



Some studies have observed a linear increase in DENV incidence with rising average temperatures, ambient relative humidity and precipitation

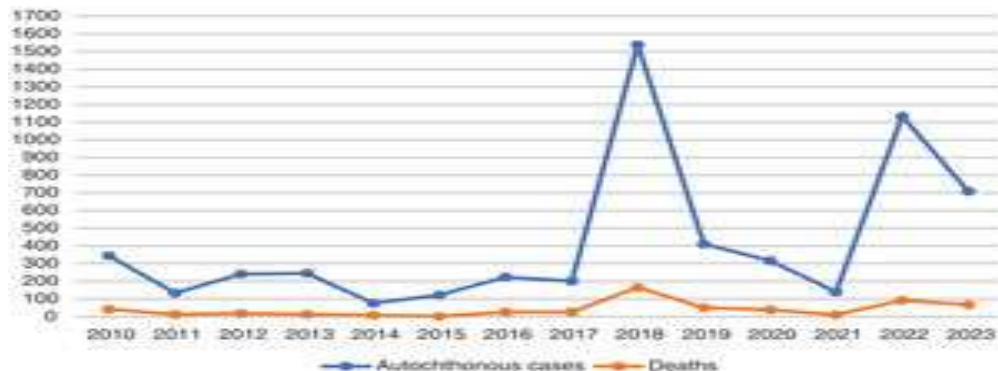


Human behavior also contributes significantly to the current spread of these arboviral diseases. Factors such as **globalization, trade and transport, demographic changes, urbanization, and the movement of populations between rural and urban areas**—often accelerated by war or natural disasters—play crucial roles. Vectors also interact with population movements: infected travelers returning to areas with competent mosquitoes can lead to local clusters or outbreaks.

In Spain, the number of CHIKV and ZIKV infections increased following their spread in the Americas.

Evolució

West Nile virus infection in the European Union



WNV has caused recurring annual outbreaks since the early 2000s, with hundreds of cases reported each year across Southern and Eastern Europe.

In **2023**, **9 European Union countries** reported a total of **709** locally acquired human cases of WNV infection, including **67** fatalities.

	2010	11	12	13	14	15	16	17	18	19	20	21	22	2023
Spain	2	■	■	■	■	■	3	■	■	■	77	6	4	19

Dengue, chikungunya, and zika outbreaks linked to local transmission

CHIKV and DENV cases have also been reported in Europe, although less frequently, with several outbreaks linked to **local transmission from viremic travelers** returning from endemic areas



2016	18	19	2022	23
2	6	1	6	3

Projections indicate an upward trend in risk due to factors such as **climate change**, increased **movement of people**, and the **proliferation of vector habitats**. Epidemiological data **from 2017 to 2023 (6a)** indicate **16 locally acquired cases of DENV**, **37 cases of WNV** and **14 cases of CCHFV**

Proactive measures are needed to prevent an escalation.^{29,30} Key strategies include enhancing vector **surveillance and control**, strengthening public health education on preventive measures, and improving diagnostic capabilities



New therapeutics and vaccines for arboviral diseases

Arboviral infections	Type of vaccine	Pharmaceutical company and approval phase
Dengue	Live-attenuated vaccine	Dengvaxia® is in The World Health Organisation's (WHO) Essential Medicines List and it is registered by EMA, FDA and in some Asian and Latin American countries. Qdenga® , Takeda, WHO Strategic Advisory Group of Experts (SAGE) has recommended for use in high dengue burden and transmission areas.
Chikungunya	Live-attenuated vaccine Virus-like particle (VLP) Inactivated vaccine Recombinant viral vector vaccine Technologies based on mRNA	Ixchiq® , VLA1553, Valneva. The first FDA-approved vaccine to prevent disease caused by Chikungunya virus infection. PXVX0317 , based vaccine from Bavarian Nordic (acquired from Emergent BioSolutions) in phase III. The BBV87 vaccine from Bharat Biotech in phase II/III. ChAdOx1 Chik vaccine from the University of Oxford. VAL-181388 from Moderna.
Zika	DNA vaccines Zika virus and Japanese encephalitis virus chimera.	No vaccine is yet available for the prevention or treatment of Zika virus infection. Development of a Zika vaccine remains an active area of research. DNA vaccine (GLS-5700) , phase I clinical trials. VRC5283 was well tolerated and has advanced to phase II efficacy testing.
West-Nile virus		There are no vaccines or medicines that prevent West Nile virus.
Crimean-Congo hemorrhagic fever		There are currently no widely available treatments or vaccines against CCHFV-mediated disease. A number of CCHFV vaccine candidates have been developed but progression toward clinical development has been limited for promising experimental vaccines vaccination.

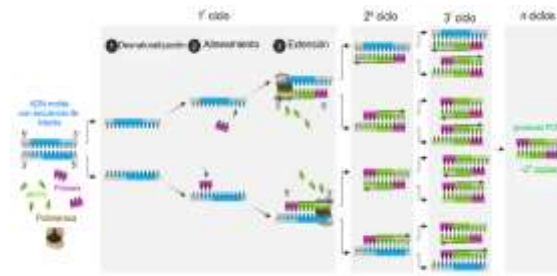
West-Nile

Ongoing research is exploring potential therapeutic avenues. Additionally, **monoclonal antibodies targeting specific viral proteins** are being investigated for their ability to neutralize WNV and reduce disease severity

Crimean-Congo hemorrhagic fever

Some antiviral drugs have shown promise against Crimean-Congo hemorrhagic fever (CCHF). **Ribavirin**, a nucleoside analog, has long been used as a direct-acting antiviral for treating CCHF, but **its efficacy remains debated**

Diagnòstic



Molecular-based detection

Reverse transcription polymerase chain reaction (**RT-PCR**) has been widely used in diagnosing arboviral diseases during the febrile stage due to its high sensitivity and specificity. Nevertheless, its widespread use at point-of-care (POC) settings is limited by the need for specialized **equipment, infrastructure, and trained personnel**.

***Lab ext confirm.-**

Serology-based diagnosis

Beyond the febrile stage, direct detection methods of arboviruses are ineffective. As a result, serology becomes essential for diagnosing these infections. The **presence of cross-reactive antibodies in flavivirus infections can lead to false positive results.**

Public Health authorities play a crucial role in minimizing arbovirus infection risks in vulnerable areas by identifying environmental risk factors and assessing how climate change influences these infections.

It is essential to use a multispecies approach to characterize transmission scenarios and understand virus reservoirs, particularly in temperate climates where the virus can be maintained during mosquito hibernation. In the absence of specific antivirals, developing and monitoring vaccines is essential for managing arbovirus spread.

Measles

Notícia Detecció de casos de xarampió importats a Catalunya-important (01/2025)(Gencat)

Avui s'ha publicat a la web de l'ASPCAT la notícia **Detecció de casos de xarampió importats a Catalunya durant el gener de 2025** arran del brot de xarampió que està afectant el Marroc.

A la notícia hi trobareu diferents enllaços amb tota la documentació que fa referència a la malaltia.

*Any previ: brot nens holandeses (sin vac) vacs





14 de noviembre de 2024

- El sarampión es una enfermedad sumamente contagiosa y grave causada por un virus que se transmite por el aire; puede derivar en complicaciones graves y provocar la muerte.
- La vacunación contra el sarampión evitó más de 60 millones de muertes entre 2000 y 2023.
- A pesar de que existe una vacuna segura y coste-eficaz, se estima que en 2023 hubo 107.500 fallecimientos por sarampión en todo el mundo, mayoritariamente niños menores de cinco años no vacunados o que no habían recibido la pauta completa.
- En 2023, el porcentaje de niños que recibieron la primera dosis de la vacuna contra el sarampión fue del 83%, muy por debajo del 86% de 2019.

Efectos de la pandemia de COVID-19

La pandemia de COVID-19 provocó contratiempos en las actividades de vigilancia e inmunización. Como consecuencia de la suspensión de los servicios de inmunización, del descenso en las tasas de inmunización y de la reducción de las actividades de vigilancia en todo el mundo, millones de niños quedaron en situación de vulnerabilidad frente a enfermedades prevenibles como el sarampión



Las grietas en la vacunación y la movilidad geográfica están detrás del incremento de la cifra de los brotes

En el mundo, [el sarampión está en fase de franca expansión](#). Según estimaciones de la OMS y los Centros para el Control y Prevención de Enfermedades, hubo 10,3 millones de casos en el 2023, un 20% más que en el año anterior. El aumento se atribuye a “la cobertura insuficiente de vacunación a nivel mundial”. España presenta una de las coberturas más elevadas, con un 97,8% de la primera dosis de la vacuna (se administra al año de vida). Sin embargo, 11 comunidades autónomas están por debajo del 95% respecto a la segunda dosis (se administra a los 3 o los 4 años según las autonomías), alertó Fernando Moraga-Llop, portavoz de la Asociación Española de Vacunología.

Es un dato a tener en cuenta, en el sentido de que la OMS considera necesaria una tasa superior al 95% en las dos dosis “para prevenir brotes y proteger a la población de uno de los virus humanos más contagiosos del mundo”. Según Moraga-

Espanya se encuentra en situación de eliminación de sarampión desde el 2016 porque acredita, desde el año 2014, que no existe circulación del virus que la provoca. Sin embargo el incremento de la cifra de brotes, pequeños y medianos, induce a los expertos a mantener los ojos bien abiertos. Parecía que la extinción era completa: en el 2023 se confirmaron apenas 7 casos en el país. Pero en el 2024 se contabilizaron 217 y en lo que va de este año, hasta el pasado lunes, se acumulan 110 –capitalizados por un brote en el País Vasco–, según los datos de la red Nacional de Vigilancia Epidemiológica. ¿Vuelve el sarampión?

26.02.25

La Vanguardia

- Vacuna implantada en 1981
- Ucrania/ Rumanía/ Marruecos

En cambio, Noemí López apunta que, efectivamente, hay bolsas de susceptibles de vacunación. “Pero no son grandes”, precisa, si bien “hay que hacer labor de identificación y educación de estos grupos”. En su opinión, hay dos cohortes de población tradicionalmente susceptibles de la infección: las personas que no estuvieron expuestas al virus de manera natural antes de la vacuna (implantada en 1981) y las que no han recibido las vacunas. Según los expertos, la mayor parte de las infecciones afectan a personas adultas y se trata de casos importados. Señalan a países del Este de Europa, donde existen reticencias a la vacunación por desconfianza hacia las autoridades, caso de Ucrania o Rumanía, que concentra el 88% de los diagnósticos de la UE y donde en diciembre del 2023 un brote de sarampión fue declarado como epidemia a nivel nacional. “Los casos que tenemos ahora fundamentalmente los importamos de Marruecos porque hay una cantidad de casos brutal”, precisó Moraga-Llop.

-PROPUESTA DE ADELANTAR LA SEGUNDA DOSIS

-FORMACION PARA LA DETECCIÓN

En resumidas cuentas, dos factores están detrás de los brotes de sarampión en España: la falta de vacunación y la importación del virus por la movilidad geográfica. En este contexto, Moraga-Llop considera “relativamente urgente” adelantar la segunda dosis de la vacuna a los 2 años con el argumento de que “en los dos primeros años de vida el niño tiene mucho más contacto con el sistema sanitario que en los siguientes”. Sin embargo, López discrepa. “Puede ser una propuesta, pero ahora no es una prioridad”, dice, y agrega que debe ser objeto de consenso en el seno de la Comisión Interterritorial del SNS.

Prueba de la alerta es que el Ministerio de Sanidad está elaborando una infografía para ayudar a los clínicos a identificar casos de sarampión porque “no están acostumbrados”. Para María del Mar Tomás, portavoz de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica, las técnicas moleculares de detección del virus utilizadas durante la epidemia de la covid son útiles para cortar las cadenas de transmisión del sarampión.

SALUD PÚBLICA

España es el segundo país europeo con más casos de sarampión en 2025

• La infección resurge por los casos importados y la insuficiente vacunación en algunos colectivos



España, que había eliminado el sarampión en 2016, tiene ocho brotes activos de la enfermedad y es el segundo país europeo con más casos diagnosticados desde principios de año, según los últimos datos epidemiológicos publicados por el ministerio de Sanidad y por el Centro Europeo de Prevención y Control de Enfermedades (ECDC).

El resurgimiento del sarampión en España se explica por la llegada de casos procedentes de otros países, principalmente Rumanía y Marruecos, y por tasas de vacunación subóptimas en algunos colectivos

UE: Rumanía-Esp-PB

Espanya ha notificat este any 123 casos de sarampió, segons el [boletín epidemiológico del ECDC](#) que recopila dades fins al 2 de març.

Solament Rumania, que pateix una epidèmia de sarampió d'abast nacional des de desembre de 2023, ha reportat més casos a Europa, amb 2.645 diagnòstics i 4 morts en els dos primers mesos de 2025.

Casos de sarampión notificados en Europa en 2025



Fuente: ECDC (Datos hasta el 5 de marzo)

LA VANGUARDIA

'95% vac de rebaño'

Dado que el virus del sarampión es altamente contagioso, se estima que **es necesario que el 95% de una población esté vacunada con dos dosis para conseguir la llamada inmunidad de rebaño**, es decir, una inmunidad colectiva suficiente para que el virus no pueda circular y por lo tanto no aparezcan brotes.

En Rumanía solo el 78% de la población infantil recibió la primera dosis de la vacuna del sarampión que le correspondía en 2023, y solo el 62% recibió la segunda dosis, según la [estimación de la Organización Mundial de la Salud \(OMS\) y Unicef](#).

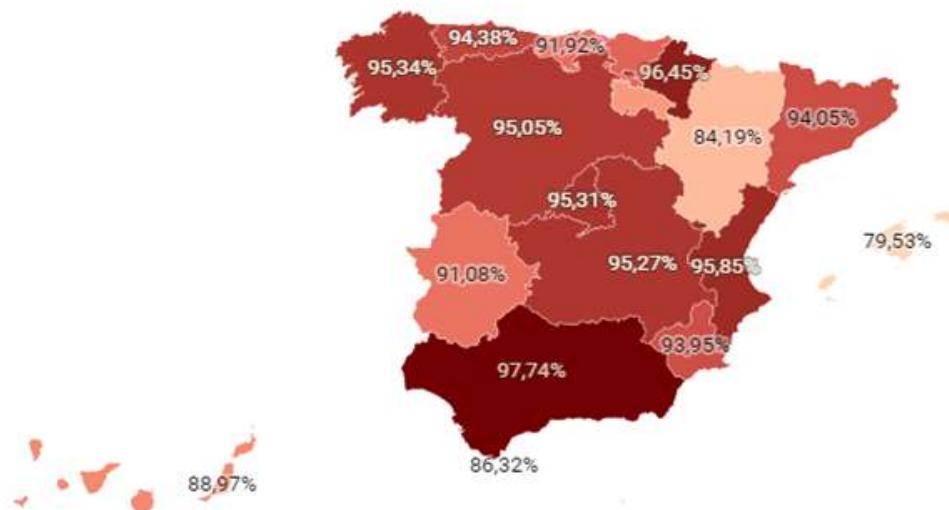
En España, la cifra es de un 96% para la primera dosis y de un 92% para la segunda

Cobertura vacunal contra el sarampión en España

Porcentaje de población infantil que recibe las dos dosis de la vacuna (Datos de 2023)

Límite que ofrece inmunidad poblacional suficiente para evitar brotes: **95%**

Media España: **94,42%**



Los datos de las Islas Baleares son del 2021

En el caso de Marruecos, la epidemia de sarampión se inició en octubre de 2023 y ha causado unas 150 muertes entre más de 40.000 casos diagnosticados.

Según los datos del CCAES, **un 31% de los casos registrados en España en 2025 son importados** y el **69% se contagiaron aquí a partir de casos procedentes de otros países.**

El mayor brote se ha producido en el **País Vasco** a partir de un caso importado de Marruecos, y ha afectado a **45 personas hasta el 23 de febrero, la mayoría de ellas no vacunadas o con estado de vacunación desconocido.**

En Catalunya se han registrado 20 diagnósticos de sarampión en cuatro brotes desde principios de año

Pedro Plans, Lack of herd immunity against measles in individuals aged <35 years could explain re-emergence of measles in Catalonia (Spain) *Int J Infect Dis* Volume 18P81-83 January 2014

Herd immunity was considered established in the different population groups when the **prevalence of positive serological results to measles was higher than the herd immunity threshold of 90%**. The Chi-square test and the odds ratio were used to assess the association between lack of herd immunity and measles cases in the outbreak of **2006–2007**.

Herd immunity was not established against measles in individuals aged 0–14 years and 25–34 years, as the prevalence of positive serological results was <90% in these groups. In the measles outbreak of 2006–2007, 91% of cases occurred in age groups without herd immunity

In Catalonia, an autonomous region of Spain with seven million inhabitants, indigenous measles virus transmission was interrupted in 2000, but a measles outbreak involving **381 cases** was declared in 2006.

Analysis of the epidemiological characteristics of the outbreak showed that **94% of cases occurred among individuals aged <35 years, and 89% occurred among unvaccinated individuals.**

The re-emergence of measles in Catalonia in 2006–2007 could be explained by the **mobility of people carrying measles infections** from infected areas or countries to Catalonia, and the lack of the necessary herd immunity to block measles transmission in the population

Noemí López-Perea, **Measles Among the Foreign-Born Population Residing in Spain, 2014–2022: Missed Opportunities for Vaccination; Vaccines**, 2024 Dec 23;12(12):1452

Spain has been in a measles elimination phase since 2014. No evidence exists about the distribution of measles cases among the population born outside Spain.

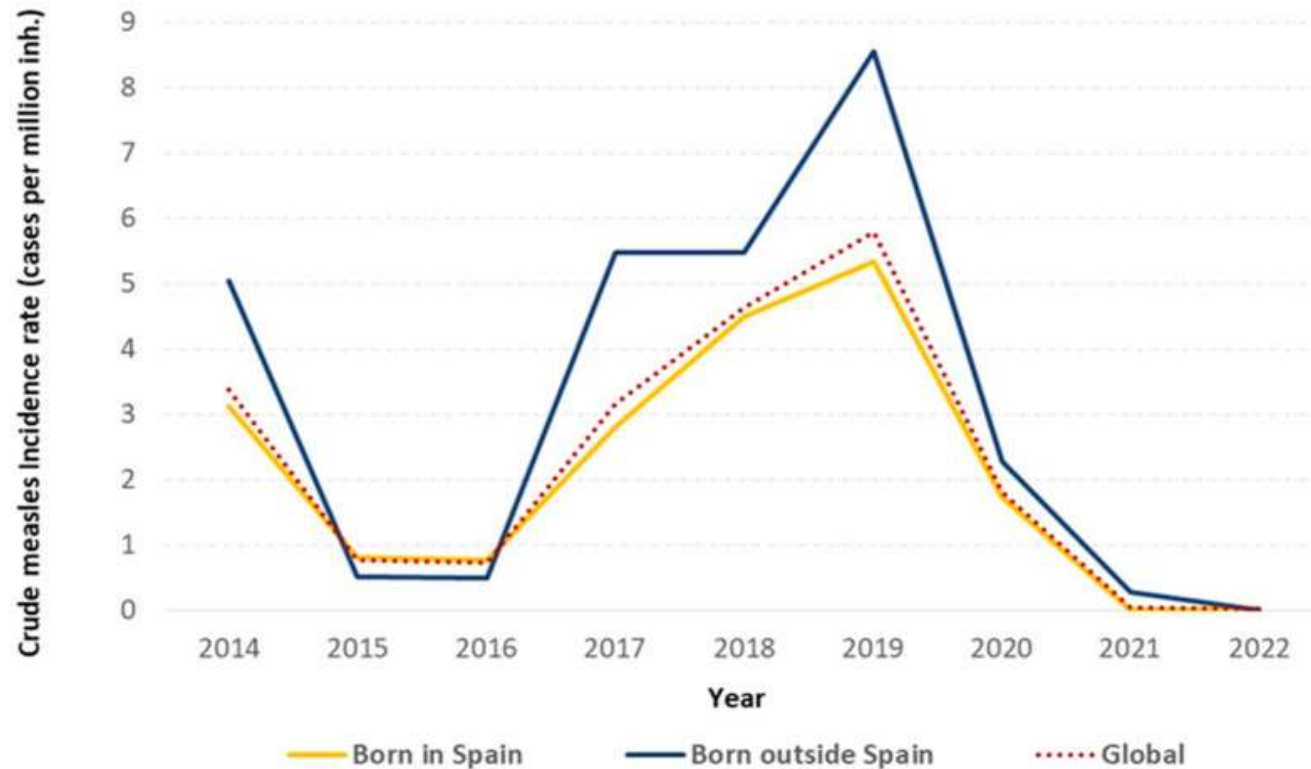
The incidence of measles is 40% higher in Spain's foreign-born population than in its native-born population. Taking into account the increasing migrant population in Spain, we consider that public health efforts need to be directed towards susceptible groups of people

In Spain, MMR was included in the childhood vaccination schedule in 1981, and the second dose was incorporated in 1996. The current MMR schedule envisages administration **at age 12 months and again at 3–4 years.**

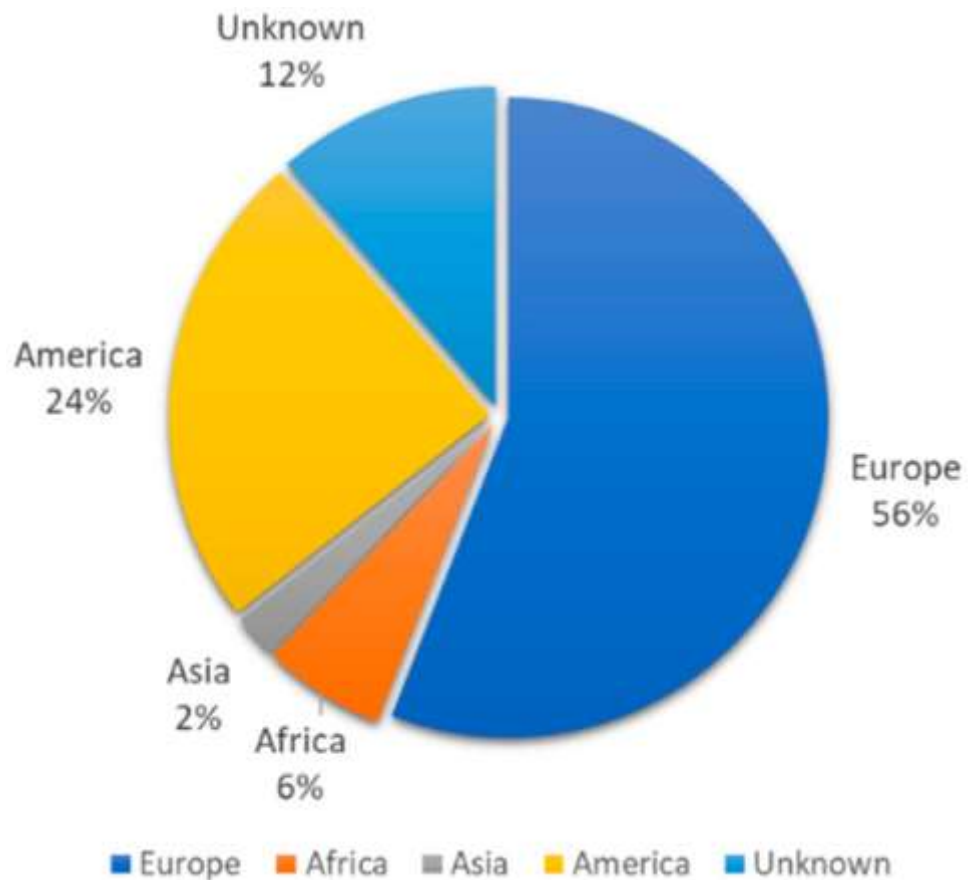
In 2019, there was an essential shift from the Child Vaccination Calendar to the Lifelong Vaccination Calendar, in which vaccination with two doses of MMR is recommended for every **person born in Spain since 1978 without documented vaccination**, by taking advantage of any contact with health services

By age group, the **highest proportion of cases was reported among adults aged 30 years and over (49.7%), and the highest incidence occurred among children under 5 years of age (IR: 9.1 cases/million).**

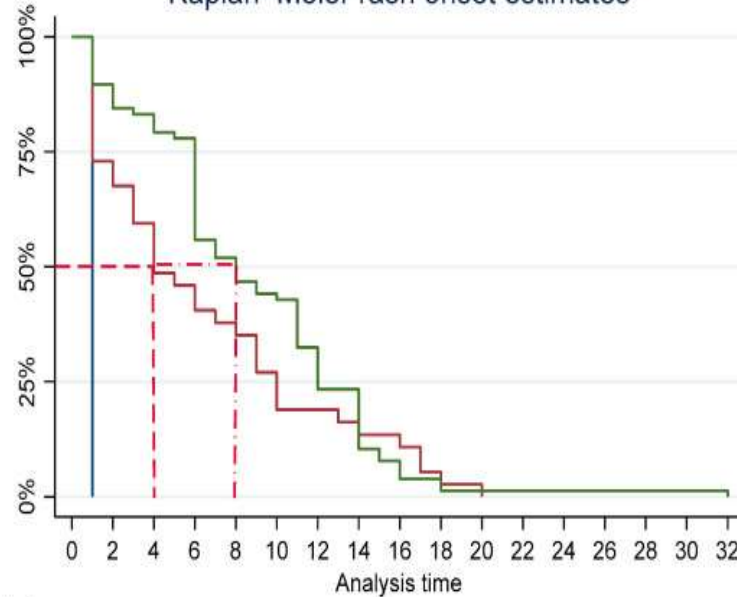
After stratification by place of origin, rates in children under 5 years of age were significantly higher among those **born abroad** than among those born in Spain (IR: 42.3 vs. 8.2; IRR: 5.1; 95% CI (3.0–8.3)) ([Table 2](#)). In the 5–29 age group, rates were likewise significantly higher among residents born in other countries (IR: 5.4 vs. 2.4; IRR: 2.2; 95% CI: (1.7–2.9)), whereas in the 30-and-over age range, the IRRs were similar between the two groups



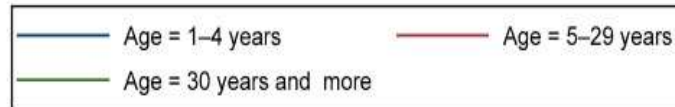
Of the 177 cases reporting a foreign origin, 55.9% came from European countries, with **Romania (32 cases), Italy (23 cases) and Ukraine (18 cases)** being the most frequent countries of origin. The next most frequently sourced continents were the **Americas (24.3%), Africa (6.2%)** and Asia (2.3%)



Kaplan–Meier rash onset estimates



Number at risk				
Age = 1–4 years	2	0	0	0
Age = 5–29 years	37	10	1	0
Age = 30 years and more	77	34	1	1



Conclusion

This study shows that during the post-elimination period, the incidence of measles is **40% higher in Spain's foreign-born population than in its native-born population.**

In the migrant population, the median time from arrival in Spain to contracting measles is estimated at approximately 6 years.

More than 50% of measles cases in the migrant population are of European origin. Lastly, the regions with the highest number of reported measles cases as well as the highest rates of foreign residents are **Catalonia and Valencia.**

Fi

Moltes gràcies per la
vostra atenció!!

