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CHIKUNGUNYA VIRUS DISEASE

Situation Update

World Health Organization | EPI•WiN | EPIDEMIC & PANDEMIC PREPAREDNESS & PREVENTION

Chikungunya overview

- Chikungunya is an acute febrile illness transmitted by the bite of a mosquito (*Aedes spp*) infected with the chikungunya virus.
- First identified in the United Republic of Tanzania in 1952 and subsequently in other countries Africa and Asia; introduced into the Americas in 2013.
- Most infected people will have symptoms such as: high fever, severe joint pain, arthritis, stiffness, rash.
- Severity varies by age - newborns and young infants, and the elderly are at greater risk for more severe disease.
- High population infection rate with potential for large epidemics, particularly among immunologically naïve populations where chikungunya has not circulated before
- Overall case fatality rate (CFR) is <1%.
- Disease burden is mainly due to chronic disability and severe impact on patient quality of life.

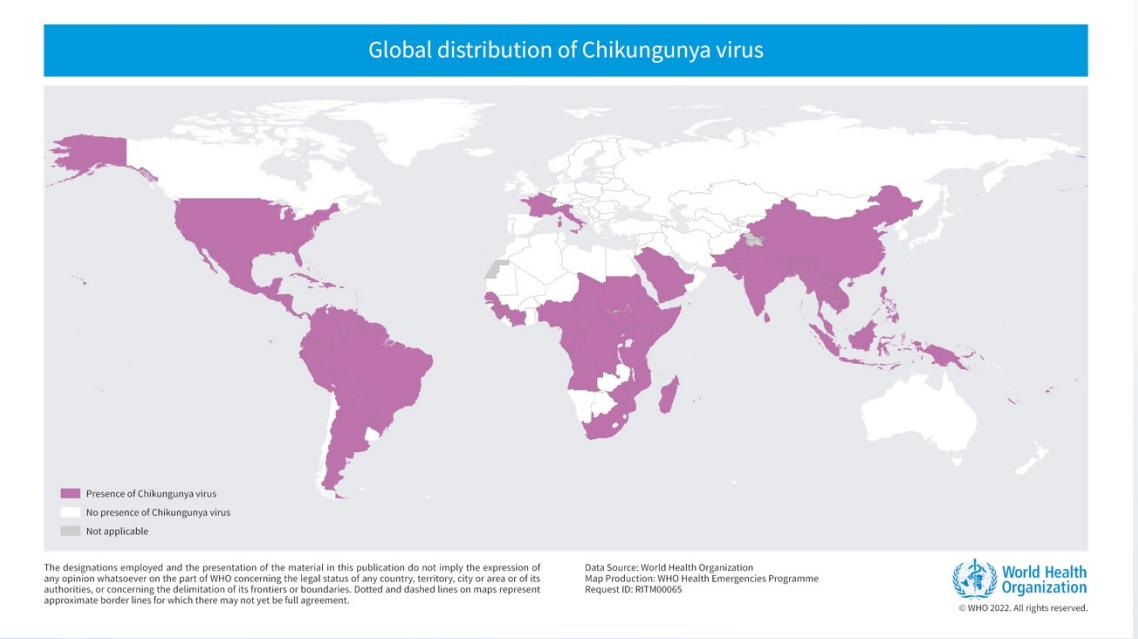
Chikungunya situation overview

110 Countries across 6 WHO regions have reported local mosquito-borne transmission

4 BILLION People at risk

<1% Low case fatality rate high disabilities

Up to 50% Chronic joint pain - disability



Source: WHO, PAHO, U.S. Centers for Disease Control and Prevention

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Chikungunya case definition criteria

Clinical

- Acute onset of fever >38.5°C and severe arthralgia/arthritis not explained by other medical conditions.

Epidemiological

- Residing or having visited epidemic areas having reported transmission within 15 days prior to the onset of symptoms.

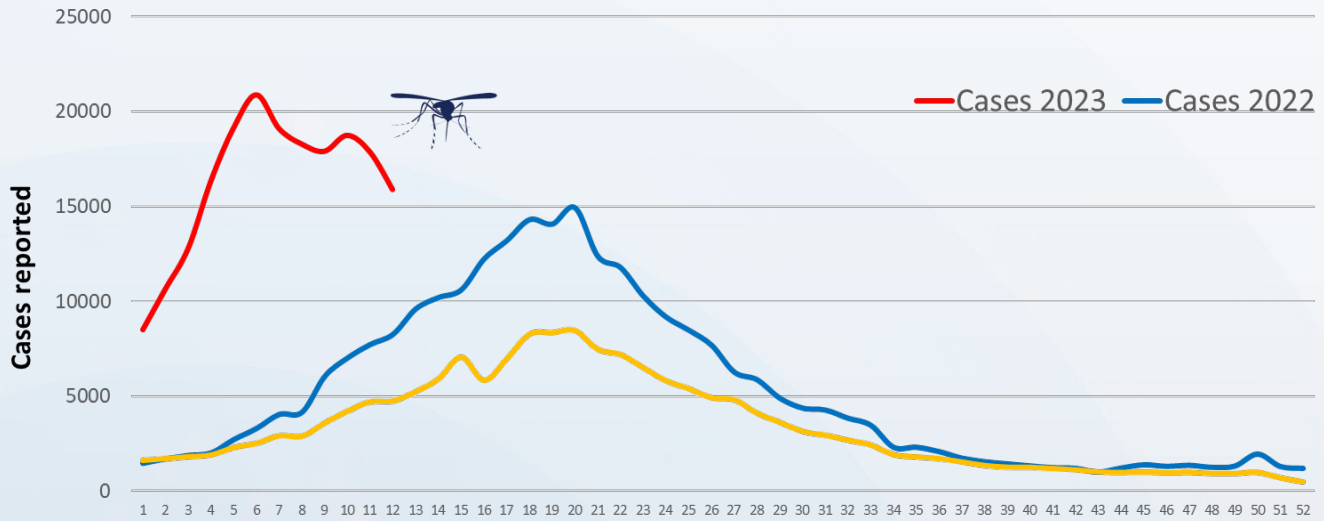
Laboratory

- Virus isolation.
- Presence of viral RNA by RT-PCR
- Presence of virus-specific IgM antibodies in single serum sample collected in acute or convalescent stage.
- Four-fold increase in IgG values in samples collected at least three weeks apart

Drivers of transmission of chikungunya

Vector	Virus	Human host
Increased numbers • Climatic factors • Increased breeding sites (water containers) • Absent/reduced vector control programmes • Insecticide resistance **Increased biting** • Environmental adaptation **Introduction into new areas** • Goods transportation (e.g., eggs/larvae in tires)	**Genotype** • Vector compatibility • Enhanced transmissibility	**Population immunity** • prior circulation • poverty **Movement/travel** **Mosquito bite prevention**

Current outbreak background

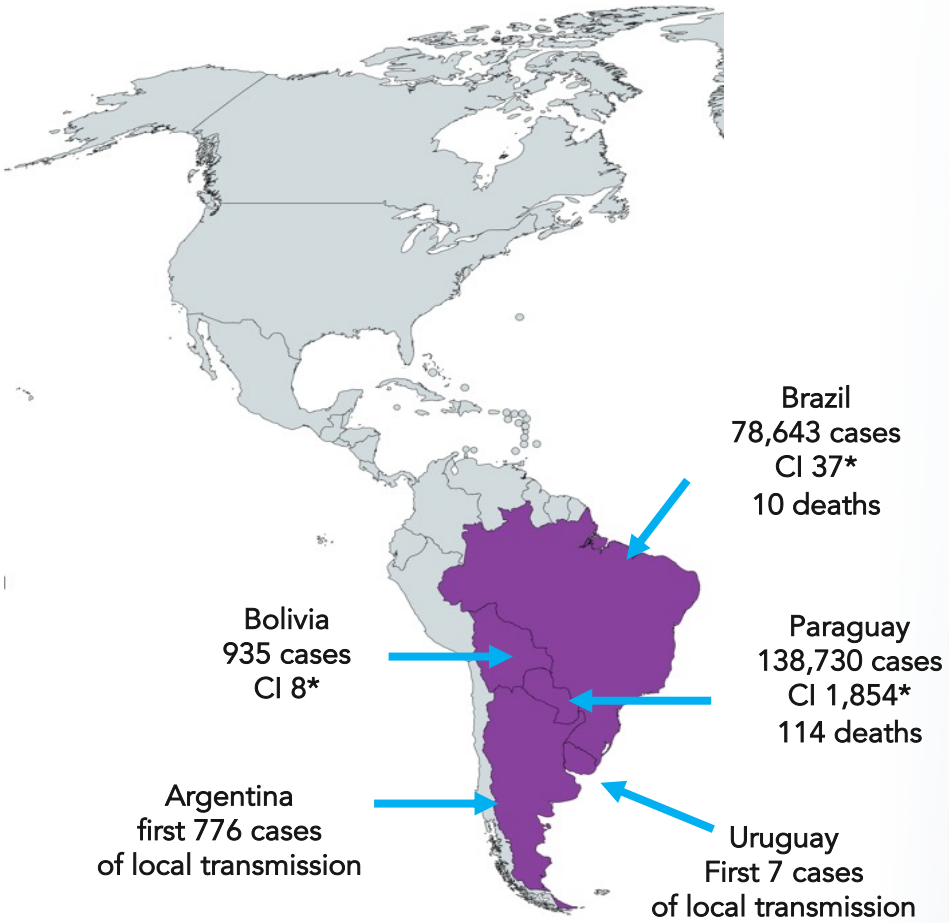


Source: PLISA form PAHO

In 2023, increased number of cases & deaths in the Region of the Americas:

- Outbreaks in several countries and in areas without previous local transmission
- Increased number of cases in newborns
- Increased number of severe cases in elderly
- Increased CFR compared to previous years

Epidemiological alert



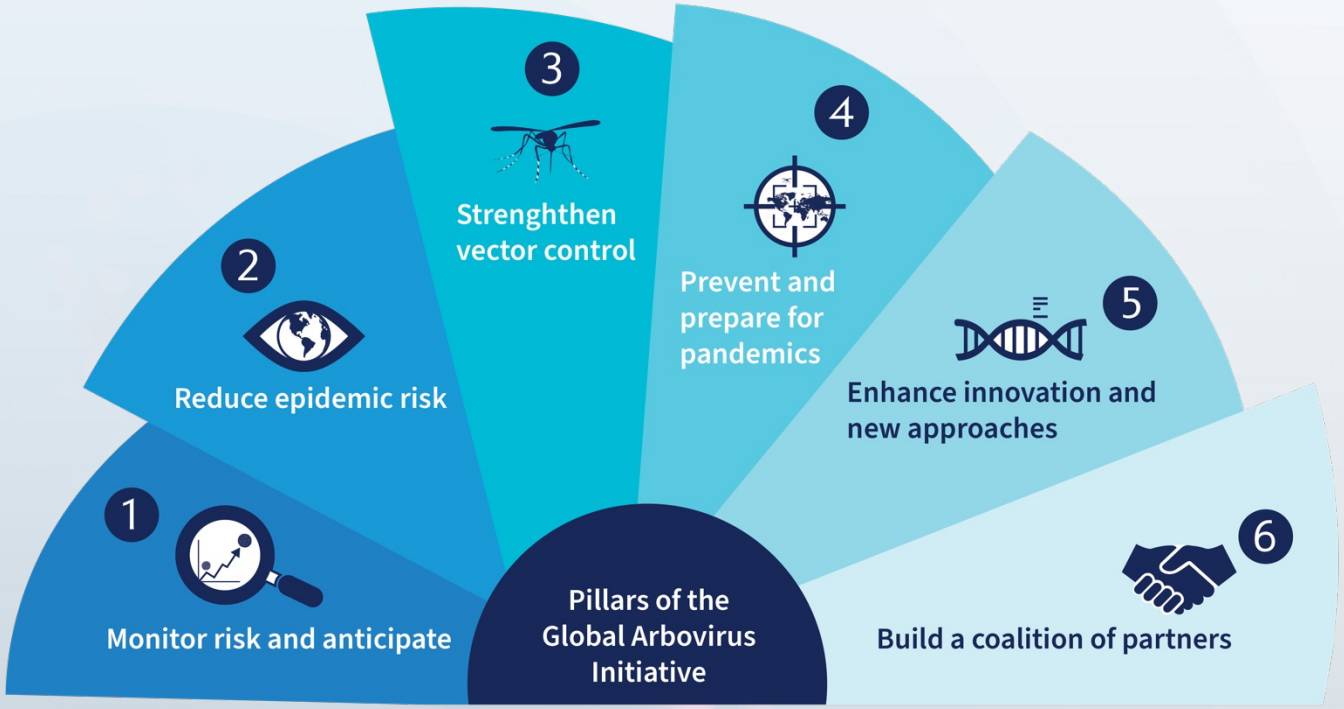
Complications:

- The national surveillance system detected an increased number of acute meningoencephalitis cases in 2023
- Associated to CHIKV: 50% neonates (confirmed by RT-PCR).
- Neonatal chikungunya recorded in previous outbreaks globally
  - risk highest intrapartum
  - ~49% transmission
- Frequent severe disease in newborns and infants

https://dgvs.mspbs.gov.py/page/#arbovirosis.html;

Integrated approach to tackle *Aedes*-borne diseases

WHO GLOBAL ARBOVIRUS INITIATIVE

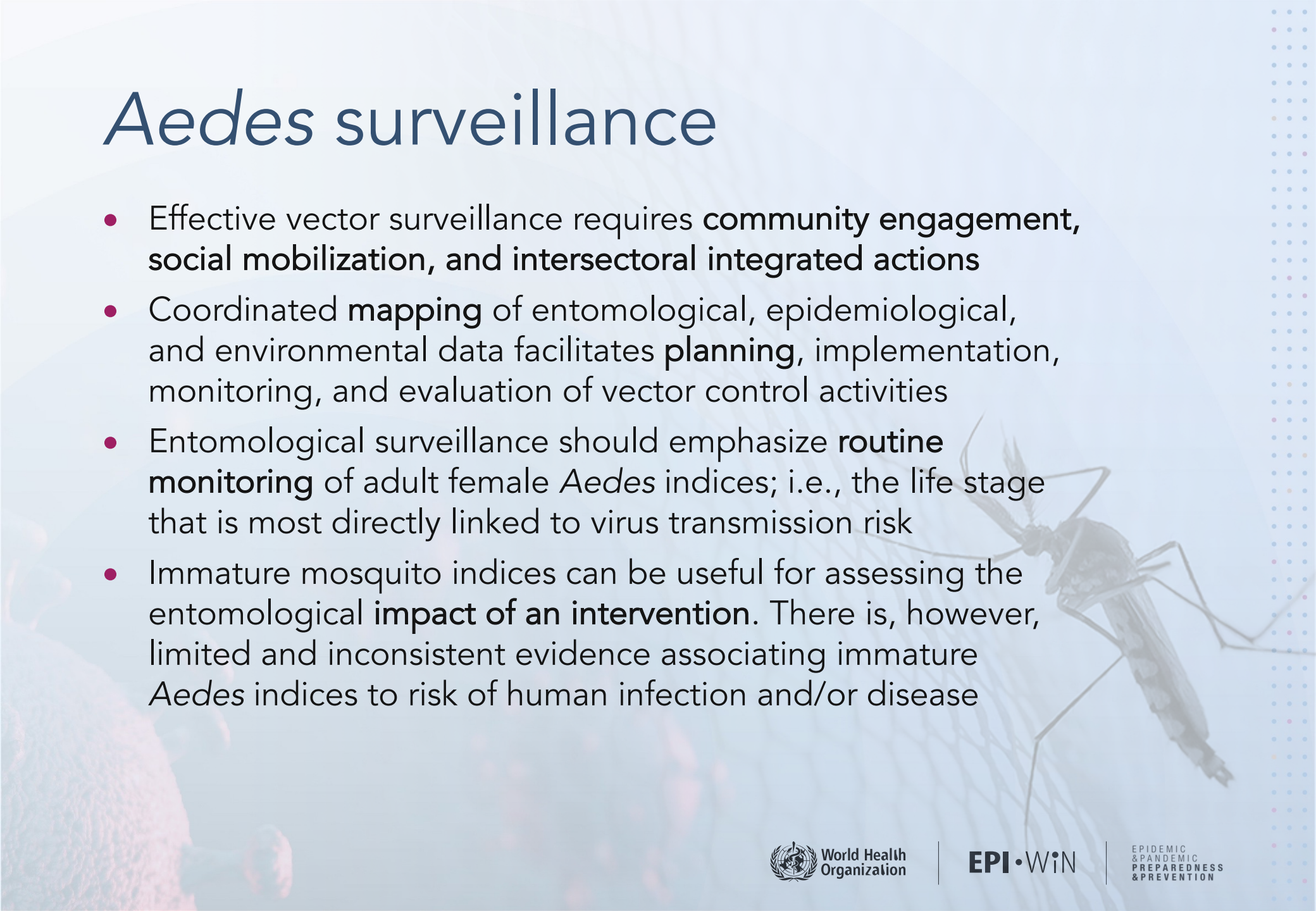


Chikungunya prevention and clinical management

- Avoidance of mosquito bites to prevent infection
  - Using approved insect repellent and
  - Wearing clothing which minimizes skin exposure
- Vaccines under evaluation, not available yet
- No specific antiviral drug treatment
- Clinical management of fever and joint pain
  - anti-pyretics
  - optimal analgesics
  - drinking plenty of fluids and general
  - rest
- Hospital admission for severe disease
- Prevention of mosquito bites in persons with infection to limit further spread to uninfected mosquitoes

Aedes surveillance

- Effective vector surveillance requires **community engagement, social mobilization, and intersectoral integrated actions**
- Coordinated **mapping** of entomological, epidemiological, and environmental data facilitates **planning**, implementation, monitoring, and evaluation of vector control activities
- Entomological surveillance should emphasize **routine monitoring** of adult female *Aedes* indices; i.e., the life stage that is most directly linked to virus transmission risk
- Immature mosquito indices can be useful for assessing the entomological **impact of an intervention**. There is, however, limited and inconsistent evidence associating immature *Aedes* indices to risk of human infection and/or disease



Effective vector control programs

Consist of:

- Application of integrated combinations of interventions most appropriate to the local situation; no single intervention is effective across all ecological and epidemiological contexts
- Simultaneously targeting immature and adult vectors with multiple interventions
- Prevention by comprehensive intervention delivery with high coverage that is sustainable, through community involvement and programmatic continuity.
- Monitoring of insecticide resistance

Effective vector control programs

Require:

- Measuring, analysing, and integrating entomological and epidemiological data.
- Constant local and national government support and intersectoral collaboration. Ultimately, for long-term sustainability, disease prevention will require a coordinated regional approach.
- Improvements in housing industry (e.g., house designs that exclude mosquitoes, provision of reliable piped water, solid waste removal, and sealed water storage containers)

Resources for outbreak response

https://www.who.int/emergencies/outbreak-toolkit/disease-outbreak-toolboxes/chikungunya-outbreak-toolbox

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