CLIMADE AFRICA WORKING GROUP MEETING MINUTES – WEEK 17

Host: Centre for Epidemic Response and Innovation (CERI)

Date: June 20, 2023

Time: 12:00 – 13:00 p.m. (SAST)

Facilitators: Dr Houriiyah Tegally and Jennica Poongavanan

Attendance/ No. of Participants: 58

Start time: 12:01p.m. (SAST)

Purpose of the meeting

Assessing the current and future gaps in Dengue genomic surveillance in Africa.

Agenda Items

1. Welcome
2. Presentation by Dr Houriiyah Tegally and Jennica Poongavanan on the current and future gaps in Dengue Genomic surveillance in Africa in the face of climate change and human mobility.
3. Questions and Discussion

Discussion points and questions

- Dr Houriiyah Tegally and Jennica Poongavanan presented preliminary results and highlighted the gaps in genomic surveillance of Dengue in Africa. The presentation discussed the following points:
- The aims and objectives of the project, which are;
    1. Mapping the epidemiological distribution and genomic surveillance for dengue in Africa 1950s – 2023.
    2. Uncover the transmission dynamics of dengue into, from and within Africa (Phylodynamics)
    3. Climate-driven susceptibility assessment of gaps in surveillance

4. Assess risks of importations from high incidence countries.

- Epidemiological distribution of Dengue using epidemiological outbreak and case data extracted from the World Health Organization-AFRO reports.
- Dengue epidemiology in Africa.
- Mapping case data with genomic data.
- Sequencing strategies – local, abroad and within Africa.
- There are remaining blind spots and underrepresentation within several African countries.
- Dengue lineages in Africa.
- Phylogenetic inferred transmission dynamics in Africa.
- Using Bayesian phytogeography for Dengue.
- Overall continental Dengue transmission and climate-driven susceptibility assessment of gaps in surveillance.
- Trend in transmission potential for dengue with countries in Western and Eastern Africa having the highest absolute transmission potential.
- Transmission seasonality of dengue
- Matching seasonality of transmission between countries in the same region.
- Transmission seasonality well correlated between Asia, Northern and Western Africa.
- Southern Africa has the lowest transmission potential.
- Risk of importations from high incidence countries.
- Geographical distribution of Dengue and global transmission maps.
- Studies do not quantify the combined effect of climatic and non-climatic factors with importations.
- List of high incidence countries.
- Travel patterns into Africa with Asia dominating travel to Africa.
- The use of probabilistic models, estimating importation intensity and risk flow analysis for importations and transmission of Dengue.
- Preliminarily results for the risk of importations from high incidence countries (Brazil, India, Bangladesh, and Sri Lanka)
- Transmission potential from high incidence countries.
- Overlaying the risk of importations with transmission potential.
- Conclusion and limitations
- Next steps
- Dengue Surveillance in Togo

- Bioinformatic pipelines and Data visualization.
- Repeating analysis using partial genomes.

Adjournment and Closing points.

1. Dr Houriiyah Tegally adjourned the meeting at 12:58 p.m. (SAST).

Next Meeting

Tuesday, June 27, 2023, at 12:00 – 13:00 p.m. (SAST)

Submitted by: Yajna Ramphal

Approved By: Monika Moir