COVID-19 Related Work

Most of GeMVi research work and capacity at KEMRI-Wellcome Trust Research Programme (KWTRP), University of Warwick, Uganda Virus Research Institute (UVRI), Kilimanjaro Clinical Research Institute (KCRI) and Makerere University continue to be directed to COVID-19-related activity (testing samples, sequencing and training).

Kenya’s emergency response to the outbreak using modelling and sequencing continue to be enhanced through the capacity established by GeMVi. The group in Kenya contribute to the National COVID-19 Modelling Technical Committee that evaluates countrywide modelling output to develop messages to inform policy decisions by the Ministry of Health. The Technical Committee regularly responds and reports to the Ministry of Health and Presidential Policy Unit. In Uganda, at UVRI, GeMVi Fellows are contributing the SARS-CoV-2 laboratory diagnostics and sequencing efforts.

The GeMVi modelling team at Warwick has been developing Kenya-specific forecasting models in collaboration with modellers and epidemiologists at KWTRP, and also with KWTRP’s Health Economics Research Unit to extend this work and link it to health service capacity and economic impact modelling. The team has also engaged with the Ministry of Health in Uganda and have reviewed modelling work from the Uganda modelling team that responds to the Uganda MoH.

Researchers from KWTRP and a GeMVi Fellow at Kenya NPHL (extreme right)
GeMVi Publications

The GeMVi team has contributed to the following publications during the COVID-19 pandemic period:

**Articles**

- Forecasting the scale of the COVID-19 epidemic in Kenya
- Estimation of country-level basic reproductive ratios for novel coronavirus (COVID-19) using synthetic contact matrices
- An optimisation of four SARS-CoV-2 qRT-PCR assays in a Kenyan laboratory to support the national COVID-19 rapid response teams
- Revealing the extent of the COVID-19 pandemic in Kenya based on serological and PCR-test data

**Policy Briefs**

- Genome sequencing of SARS-CoV-2 cases in Kenya
- What can we learn from preliminary modelling of the COVID-19 in Kenya?

**Genome Report**

- Introduction and local transmission of SARS-CoV-2 cases in Kenya

**Newspaper Articles**

- Kemri researchers release their analysis of coronavirus strains

**Tweets**

- More than 100 SARS-CoV-2 genomes from COVID-19 cases on GISAID
- Tweet by @KEMRI_Kenya Liked by @MutahiKagweCs. Hon. Mutahi Kagwe, is the Cabinet Secretary for Health in the Republic of Kenya.
- Charles Nyaigoti explaining to the media the how the Real Time PCR process is done

Visit the webpage listing the publications by the GeMVi team at [https://gemvi.kemri-wellcome.org/covid-19/](https://gemvi.kemri-wellcome.org/covid-19/)
GeMVi Research Fellowships

We have maintained contact with the GeMVi Fellows at the various institutions in East Africa and support for them has continued during this period. Work by GeMVi Fellows has, however, significantly reduced due to the pandemic. We are currently reviewing the situation to see if we can open a call for the third round of fellowships sometime in November of this year. Further updates on the call will be posted on the GeMVi website.

Round 2 GeMVi Fellows at Work

Sequencing Fellows

From left to right: Mary Bridget Nanteza, Sheila Cecily Ommeh, Timothy Nzomo and Gurdeep Jaswant
For more information visit: https://gemvi.kemri-wellcome.org/fellows/

Modelling and Bioinformatics Fellows

From left to right: Jean Claude Utazirubanda, Winifred Nduku Mutuku, Cameline Nafula Orledo and Benard Kulohoma
For more information visit: https://gemvi.kemri-wellcome.org/fellows/
Training Conducted by the GeMVi Team

KWTRP has initiated collaboration with and training of staff from Kenya National Public Health Laboratory (NPHL), KEMRI Centre for Virus Research, KEMRI Centre for Biotechnology Research and Development and KEMRI Center for Global Health Research in sequencing using the Oxford Nanopore Technology (ONT) MinION platform to support transfer of this capacity. Plans are underway to train three staff.

George Githinji, GeMVi PDRA, recently gave a presentation at a webinar on the role of SARS CoV-2 genomics in informing community transmission and public health decision making.

Upcoming Events

Given the pandemic it is not possible, at the moment, to set precise dates for forthcoming events, however we propose convening the following major events in the coming months:

<table>
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<tr>
<th>#</th>
<th>Event</th>
<th>Tentative Dates</th>
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<tbody>
<tr>
<td>1</td>
<td>Infectious Disease Dynamics Modelling Mini-Workshops (run by Zeeman Institute, University of Warwick)</td>
<td>Starting in October, 2020</td>
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<tr>
<td>2</td>
<td>Third Call for Fellowships</td>
<td>November, 2020</td>
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<tr>
<td>3</td>
<td>GeMVi Dissemination Workshop</td>
<td>March, 2021</td>
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<tr>
<td>4</td>
<td>East African Virus Genomics &amp; Bioinformatics Workshop</td>
<td>May, 2021</td>
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Infectious Disease Dynamics Modelling Workshops

The GeMVi team at Warwick has developed materials for a series of half-day virtual workshops on infectious disease modelling. For each workshop a mathematical ‘notebook’ on a different topic in infectious disease modelling will be produced that will include both text and code and can be used to combine written explanations of mathematical models with computational implementations of the models and visualizations of their results in a single document.

GeMVi Dissemination Workshop

We propose holding a virtual workshop, tentatively, in March 2021. During the workshop both Round 1 and 2 Fellows will report on their research and present their findings. We plan to invite various stakeholders to link in including members of the Independent Advisory Group. This will coincide with a mini virus sequencing and bioinformatics symposium with UVRI and new collaborators from the University Glasgow’s Centre for Virus Research (CVR) – details below.

East African Virus Genomics & Bioinformatics Workshop

The workshop planned for May 2021 will take place at KWTRP, Kilifi. It will focus on the bioinformatics of pathogen surveillance with the aim of sharing working experience and expertise and promoting additional collaborations. In addition, it will also support specific next generation sequencing (NGS) NGS wet lab training and a basic Python course. The workshop is funded through the GCRF University of Glasgow Centre for Virus Research collaboration grant. For further information on the workshop please contact us.

Contact

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