isirv-AVG/GISAID Training Workshop

The isirv Antiviral Group and GISAID in collaboration with the World Health Organization's Global Influenza Surveillance and Response System (**GISRS**), and the support of Germany's Federal Ministry of Food, Agriculture & Consumer Protection (**BMELV**), organised a short training workshop on genetic sequence analysis of influenza viruses and molecular detection of antiviral resistance, at the Options for the Control of Influenza VIII Conference in Cape Town, South Africa on the 7th September 2013.

The purpose of the workshop was to provide training to representatives of influenza laboratories in African and other low resource countries in the use of the GISAID EpiFlu™ database for monitoring sequence variation among influenza viruses in relation to surveillance of influenza epidemics and detection of resistance to influenza antiviral drugs.

The program comprised two sessions:

A two-hour session of background lectures that was 'open' and could accommodate up to 50 people.

Followed by a session of demonstrations for registered participants.

The topics covered by the lectures included: analysis and interpretation of sequence data on the GISAID platform; genotypic detection of mutations affecting antiviral susceptibility; influenza antivirals, emergence of resistance and surveillance; phenotypic assays of NAI susceptibility.

Most of the presentations have since been made available to all isirv members (including all who attended the Options VIII conference) via the isirv website. The three 30 minute demonstrations were on: GISAID's EpiFlu™ database for sequence comparisons; assessing the frequency and significance of mutations using the GISAID FluSurver; and assays for neuraminidase inhibitor susceptibility.

Thirty-five delegates (list attached) attended the lecture session, in addition to twelve presenters and demonstrators. Twenty-eight registrants, mostly from WHO designated laboratories, participated in the demonstrations, 12 from African countries, 5 from South and Central America, 6 from Asian countries and 5 from European countries. Seven participants received financial support from the organisers. The workshop was very well received and feedback from participants (see attached) was particularly positive.

isirv-AVG/GISAID Training Workshop

Sequence Analysis and Detection of Antiviral Resistance

7th September, 2-6 pm, Room 1.61/1.62, CTICC

PROGRAMME

Opening & Welcomes by Wenqing Zhang (Co-ordinator of GIP), Nancy Cox (Chair of GISAID) & Alan Hay (Chair of isirv-AVG)

2.00– 4.00 Lectures (open session)

2.00– 2.15 Influenza antivirals, emergence of resistance and surveillance Aeron Hurt, WHO CC, Melbourne

2.15 – 2.35 Phenotypic assays of NAI susceptibility Angie Lackenby, PHE, London

Animal studies/clinical significance of resistance mutations Elena Govorkova, St Jude, Memphis

2.35 – 2.50 Sensitive/resistant reference virus panels Aeron Hurt, WHO CC, Melbourne; Larisa Gubareva, WHO CC, Atlanta

2.50 – 3.10 Genotypic detection of mutations affecting antiviral susceptibility Sylvie van der Werf, Institut Pasteur, Paris; Larisa Gubareva, WHO CC, Atlanta

3.10 – 3.25 Reporting of data (regional/global) Adam Meijer, NIPH, Bilthoven

3.25 – 3.45 The GISAID EpiFlu database - Analysis and interpretation of sequence data Naomi Komadina, WHO CC, Melbourne; Mia Brytting, NIC, Stockholm

3.45 – 4.00 Application of the FluSurver tool Sebastian Maurer-Stroh, BII, Singapore

4.00 – 4.30 Refreshments

4.30 – 6.00 Demonstrations (selected registrants)

GISAID's EpiFlu database for sequence comparisons Naomi Komadina, WHO CC, Melbourne; Mia Brytting, NIC, Stockholm; Rod Daniels, WHO CC, London

Assessing frequency and significance of mutations using FluSurver Sebastian Maurer-Stroh and Raphael TC Lee , BII, Singapore; Aeron Hurt, WHO CC, Melbourne; Adam Meijer, NIPH, Bilthoven

Assays for neuraminidase inhibitor susceptibility Jenny McKimm-Breschkin, CSIRO, Melbourne; Angie Lackenby, PHE, London

isirv-AVG/GISAID Training Workshop
Sequence Analysis and Detection of Antiviral Resistance

Cape Town, 7th September 2013

REGISTERED ATTENDEES - Lectures & Demonstrations

NAME	COUNTRY
Fawzi Derrar	Algeria
Andrea Ponteriero	Argentina
Terezinha Maria de Paiva	Brazil
Zekiba Tarnagda	Burkina Faso
Horm Srey Viseth	Cambodia
Richard Njouom	Cameroon
Herve Kadjo	Côte d'Ivoire
Kofi Bonney	Ghana
Samwel Symekher	Kenya
Sanjiv Rughooputh	Mauritius
Guadalupe Ayora	Mexico
Gisela Barrera Badillo	Mexico
Irma Lopez Martinez	Mexico
Nyamaa Gunregjav	Mongolia
Bishnu Upadhyay	Nepal
Shailaja Adhikari	Nepal
Olav Hungnes	Norway
Uzma Aamir	Pakistan
Raquel Guiomor	Portugal
Fatoumala Diene Sarr	Senegal
Mbayame Niang	Senegal
Florette Treurnicht	South Africa
Raul Ortiz de Lejarazu Leonardo	Spain
Yves Thomas	Switzerland
Miriam Matonya	Tanzania
Meral Ciblak	Turkey
Timothy Byaruhanga	Uganda
Ngo Huong Giang	Viet Nam

ATTENDEES - Lectures only

NAME	COUNTRY
Wallace Bulimo	Kenya
Talla Nzussouo	Kenya
Rosemary Nzunza	Kenya
Stephen Ocholla	Kenya
Silvano Mukunzi Opanda	Kenya
Naima Elmdaghri	Morocco
Tatiana Baranovich	Russia

isirv-AVG/GISAID Training Workshop

Sequence Analysis & Detection of Antiviral Resistance

Feedback from Attendees

Fawzi Derrar, Algeria

The presentations were excellent and very clear and my warm thanks to the speakers.

But I want to make some suggestions for the future:
1. For the practical session, I think we hadn't enough time (the subjects were very interesting) and I was wondering if it is possible to project every topic (GISAID for example) on the large screen for all the participants so everyone can benefit from people's remarks and suggestions and the debate will include all the participants (of course the number of participants should be limited in this case).

2. Secondly, regarding the microplate reader presented during this session, if this was described after the first presentation (AV techniques) we could have asked more about the chemi or fluorescent assays rather than delaying it to the end of the session and including it with other topics whereby the context and utility of the instrument was lost!!

The number of participants was perfect.

Andrea Ponteriero, Argentina

I think all the lectures were interesting- all full of content. I had the possibility to do some training related with resistance before so I already knew about some information presented at some lectures, but, the information about transmission presented by Elena was completely new for me. In the Americas, we don't have the possibility to access to resistance training and I think there is a big difference at knowledge, equipment capacity and reagent availability level between European and American countries. We participated in some training 2 years ago co-ordinated by the HPA, London, with the idea to organize a regional surveillance network. In Brazil, in 2011, in a conversation between HPA and PAHO, PAHO did not show special interest in pursuing the idea of a regional network for resistance surveillance. I think South American countries have the capacity to improve their knowledge about resistance and the organization of a regional network will enhance resistance surveillance at regional and international level.
I hope we have the possibility to participate of this kind of training, together with other regional countries, in the future, especially to share regional information.
Thank you for all your help.

Terezinha Maria de Paiva , Brazil

I would like to inform you that all lectures provided during the workshop were very important and useful for me. I would however like to make a comment regarding the demonstrations - if possible, next time, I think it would be a good idea to have some additional time at the end of all the demonstrations to have a general discussion.

Many thanks for the opportunity of attending the workshop during the Options meeting.

Horm Srey Viseth, Cambodia

Thank you again for giving me the opportunity to participate in the Workshop.

I found that this training workshop is very interesting and all the lectures are useful particularly the lecture on "The GISAID EpiFlu database - Analysis and interpretation of sequence data" and the lecture on "Application of the FluSurver tool" are helpful for my work. From now I will use GISAID EpiFlu database for submission my flu sequences and/or find other sequence data. I will also try FluSurver tool for sequence analysis to detect mutation related to antiviral resistance.

It would be helpful for me if I can have all the lecture support/documents (presentation/ PowerPoint slides). Regarding the demonstrations, I found it useful and quickly to catch what was shown in the lectures but it should be better have more time in order to allow the participant to try or practice.

Kofi Bonney, Ghana

Thank you to all the organizers for all the support. In my opinion the meeting was successful and well organised.

With regards to the 30 minutes rotations, I think it would have been good if we had enough time for us to be taken through together instead of rotating.

Samwel Symekher, Kenya

Thank you very much for everything. I liked all the presentations, which were of great importance. I would very much like to have a repeat of the MUNANA Assay, whenever it will be feasibly possible. Once again thank you.

Re financial support:
I am writing to you, very grateful and thankful for the nomination and support given during the Options for the Control of Influenza Conference. Many happy returns. I also ensure all of you of continued support to all of you from the KEMRI-NIC. Thank you again.

Sanjiv Rughooputh, Mauritius

I would like to take the opportunity to thank the isirv-AVG for making it possible for me to attend this meeting. I have acquired very valuable knowledge that will help me in performing my work.

I think membership for the isirv-AVG is very important and I have submitted my form to become a member. I know that for the first year the membership is free. I would like to set a direct debit for following year too.

Gisela Barrera Badillo, Mexico

The workshop was very useful for the NIC Mexico, it is a tool to strengthen our work in sequencing and antiviral resistance, theory was comprehensive and practical part was short but very instructive.

Nyamaa Gunregjav, Mongolia

The Workshop was very informative and really interesting.
The following lectures were particularly useful for me: Influenza antivirals, emergence of resistance and surveillance - Aeron Hurt; Genotypic detection of mutations affecting antiviral susceptibility - Sylvie van der Werf & Larisa Gubareva; Sensitive/resistant reference virus panels- Aeron Hurt; The GISAID EpiFlu database - Analysis and interpretation of sequence data - Naomi Komadina & Mia Brytting; Application of the FluSurver tool - Sebastian Maurer-Stroh

Bishnu Upadhyay, Nepal

If I speak honestly from the bottom of the heart this training program of the Cape Town meeting was an outstanding outcome of the program although there were other series of most valuable scientific presentations that were quite informative, innovative and beyond my expectation. However, this training provides a direct benefit to the laboratory professionals such as GISAID software application, flu-server and demonstration.

I am expecting that such kind of training program should be arranged in coming days especially for developing countries like Nepal. All the presentations were excellent and informative. But I would like to request if you could share all presentations of the sessions so that I can go through, and I would be thankful to all organizers. It will encourage me to learn in depth and maximal application in the influenza surveillance. Once again, thanking all members of the organizing committee.

Timothy Byaruhanga, Uganda

I found the GISAID website useful since I will use it to note changes/ mutations in my sequences. The Antiviral drug resistance assay was somehow a step further to what I am planning to do...since we are in process of starting gene sequencing. In case of a training or workshop involving more practical work about sequencing for the start, I will gladly be part of it.
Thanks very much.

Options for the Control of Influenza VIII

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