D5.4 Workshop with policy makers 2.

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Document Info

Authors

Authors	Institution	e-mail
Daniela Paolotti	ISI	daniela.paolotti@isi.it
George Kampis	DFKI	George.Kampis@dfki.de

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1. The Workshop: DELVE2016 – Digital Epidemiology and Surveillance

CCS2016 Satellite Workshop - http://delve2016.weebly.com/

2. Executive Summary

This workshop has been organized in the scope of WP5, which is dedicated to "Real World Contagious Processes and Epidemics". The goal of this workshop was to have stakeholders feedback for work done in the epidemics use case and on the availability, accessibility and intelligibility of the information provided to end users.

The event gathered experts from many diverse fields such as physics, computer science, biology, epidemiology, information technologies, social science together in a dialogue with public health officials and policy makers. Besides exploring the opportunities given by the exploitation of novel data streams and new technologies for global health threats and issues, the main activities and discussions of the workshop have revolved around the following goals:

- To identify and discuss strengths and weaknesses in novel surveillance methods
- To promote critique and development of already existing digital surveillance tools
- To characterise the future of Digital Epidemiology as an established branch of Public Health

In the audience several public health officials were present to facilitate the discussions following the presentations of the keynote speakers. In particular, we had Vittoria Colizza, from INSERM, Paris, Babak Pourbohloul from the School of Population and Public Health, University of British Columbia, Canada, Yamir Moreno from the World Health Organization Collaborating Center for Complexity Science for Health Systems (of which Dr. Babak Pourbohloul is also the director), Pierre-Yves Boelle, from the Pierre Louis Institute of Epidemiology and Public Health at INSERM, Olga Barabov from the Robert Koch Institute in Berlin.

All the presentations of the invited speakers are available at: http://delve2016.weebly.com/program.html

One of the main focuses has been on participatory surveillance methods and Twitter-like digital surveillance methods. Both of these are exploited in the activities of WP5.

3. Organizing and Scientific Committee

3.1 Organizers

- Daniela Paolotti, ISI Foundation, Turin, Italy
- Michele Tizzoni, ISI Foundation, Turin, Italy
- Alessandro Vespignani, Northeastern University, Boston, USA

3.2 Scientific Committee

Ciro Cattuto (ISI Foundation, Italy)
Alain Barrat (University of Marseille, France)
André Panisson (ISI Foundation, Italy)
Chiara Poletto (INSERM, France)*
Timo Smieszek (Public Health England, UK)*
Nicola Perra (Greenwich University, UK)
Bruno Goncalves (New York University, USA)
Ricardo Mexia (Instituto Nacional de Saúde Dr. Ricardo Jorge, Portugal)*
Philip Abdelmalik (Public Health Canada, Canada)*
Laetitia Gauvin (ISI Foundation, Italy)

* Public Health Official

4. Program

10:15 – 11:00	Keynote	**Marcel Salathé**, Associate Professor EPFL, Life Sciences & Computer and Communication Sciences, Lausanne, Switzerland – **"Bringing digital epidemiology to the next level"**

11:00 – 12:30	Oral Contributions	Chiara Poletto - **“Emerging pathogen threats: risk assessment in the era of global awareness and response information on submission”** David Martín-Corral, Esteban Moro, Manuel Garcia-Herranz and Manuel Cebrian - **”Study of the effects of air quality and climate upon human health using social digital traces”** Elizabeth Buckingham-Jeffery **- “Syndromic surveillance of gastroenteritis”**
12:30-14:15		Lunch and Keynote lecture at the main conference
14:30 – 15:15	Keynote	Marco Cristoforetti, FBK **“Monitoring vaccine confidence (with deep learning): the VCMP platform”**
15:15 – 16:00	Oral Contributions	Ioanna Miliou, Salvatore Rinzivillo, Giulio Rossetti, Dino Pedreschi and Fosca Giannotti **- “Flu-Now : Nowcasting Flu based on Product Sales Time Series**” Philipp Schwarz and Erik Pruyt - **“Towards a bright future of data-driven simulation for policy decision support: modeling an simulation of the Zika outbreak"**
16:00 – 16:30	Coffee Break	

16:30 – 17:15	Keynote	Rumy Chunara, Global Institute of Public Health, New York University, NY, USA - **"Digital Epidemiology through the Ages"**

5. Profiles of Keynote Speakers

Marcel Salathé, Associate Professor EPFL, Life Sciences & Computer and Communication Sciences. Academic Director EPFL Extension School
http://salathelab.epfl.ch/

Rumy Chunara, Global Institute of Public Health, New York University, NY, USA
http://engineering.nyu.edu/people/rumi-chunara

Marco Cristoforetti, Fondazione Bruno Kessler,
https://webvalley.fbk.eu/%23/team/

6. Recommendation of Public Health Officials

Besides the scientific discussions inspired by the Workshop speakers, the interaction of our team from ISI with policy makers and public health officials present at the workshop has focused on two main objectives, as described also in T5.5 in Annex 1: (i) evaluating the adequacy of the Modelling Computational Platform architecture to meet the needs of public health officials in terms of timing, data accessibility and intelligibility, to support the decision-making processes during a possible public health emergency; (ii) assessing the quality of the Modelling Computational Platform predictions over a range of real world case studies based on historical epidemiological data. This interaction has taken place during dedicated slots of time during the duration of the workshop not open to the public and thus not present in the official workshop program.

Methods and Results presented to public health officials participating to the Workshop have been described in detail in D5.1 – Methods and Results.

In particular, we have presented how the Modelling Computational Platform has provided realistic scenarios of epidemic spreading during the Zika emergency. As of mid-2016, a widespread epidemic of Zika fever, caused by the Zika virus (ZIKV), was on-going in the Americas, the Pacific and Southeast Asia. The outbreak began in early 2015 in Brazil, and then spread to other parts of South and North America also affecting several islands in the Pacific, and Southeast Asia. In January 2016, the World Health Organization (WHO) said the virus was likely to spread throughout most of the Americas by the end of the

year. In November 2016, the WHO Director-General declared the end of the Public Health Emergency of International Concern regarding microcephaly, other neurological disorders and Zika virus.

The Modelling Computational Platform results published in the page

http://www.zika-model.org/index.html

have been illustrated to the Public Health officials who could find detailed visualizations comparing the following epidemic scenarios:

1. Reference Scenario
2. Aegypti Scenario
3. Sensitivity Analysis Scenario,

corresponding to different assumptions on key parameters' values.

Public Health officials have given very positive feedback on this framework for the analysis of the global spread of ZIKV. The model captures the slow dynamic of the epidemic characterized by heterogeneity in the infection attack rate as well as the temporal pattern resulting from local weather, population-level characteristics, and human mobility. Public Health officials agree that modelling results should be interpreted cautiously in light of the assumptions and limitations inherent to the approach, but nevertheless the framework emerging from the numerical results may help in the interpretation of data and provide indications of the magnitude and timing of the epidemic, as well as aid in planning for international and local outbreak response, and for the planning of phase III vaccine trial sites.