Funded by
the Health Programme
of the European Union

Cost-effectiveness assessment of European influenza human pandemic alert and response strategies

NEWSLETTER 5

Jan 30th 2014

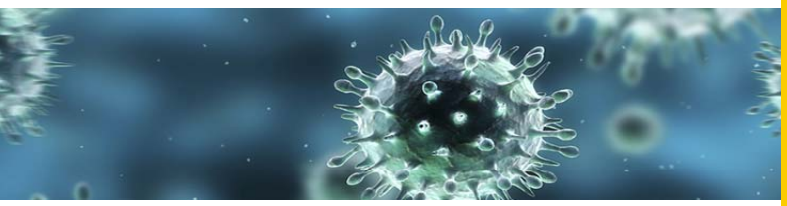
FLURESP PUBLIC CONFERENCE

How to prioritize Public Health Interventions against Human Influenza ?

European Commission DG Sanco
Luxemburg March 28th 2014

Presentation of FLURESP results
Recommendations and Guidelines
Discussion with European Stakeholders

Information and invitations:
conference@fluresp.eu



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Cost-Effectiveness analyses of Public health responses against human influenza

Despite that human influenza epidemic scenarios and their main related responses have been well documented and investigated by international organizations and few European Commission projects, they have never been assessed and ranked using cost-effectiveness advanced modelling techniques.

The objectives of the WorkPackage 7 (WP7) of the FLURESP European project is to perform cost-effectiveness analyses of public health interventions against human influenza, according to six epidemic scenarios.

This novel approach to integrated decision-making proposed by the FLURESP consortium constitutes a premiere at the European and global levels for enabling EU member states to select the most appropriate and efficient public health response strategies to various scenarios of human influenza epidemic.

A total of 18 public health interventions against human influenza have been selected in the frame of WP5. In order to assess and compare the cost-effectiveness of the 18 interventions relevant to 6 human influenza epidemic scenarios (A-F) in 4 EU countries (France, Italy, Poland and Romania), this would have required to develop 432 original cost-effectiveness models (4 countries x 6 pandemic scenarios x 18 interventions) according to one single effectiveness criterion.

Hence, the development of so many models would have been totally impractical and outside of the scope and feasibility of the FLURESP project.

Nonetheless, 108 models have been programmed for France (18 interventions x 6 pandemic scenarios), including the selection of 6 models for Italy, 6 for Romania and 6 for Poland.

In addition, 8 pilot "sequential" models have been developed representing a sequence of 3 successive sets of combined interventions along the 3 quarters of a standard 9-month pandemic duration. The possibility of assessing costs and overall effectiveness of a set of combined public health interventions (in parallel and in sequence) is a very important feature of the FLURESP project and represents a significant added value compared to existing research in human influenza.

In total, 134 cost-effectiveness models have been developed in the frame of the FLURESP project so far by January 2014.

Effectiveness criteria

In order to conduct the FLURESP cost-effectiveness assessments, particular attention has been paid to select a relevant effectiveness criteria, which is public-health meaningful, reproducible and with a robust metric. QALYs (Quality Adjusted Life Years) and DALYs (Disability Adjusted Life Years) were unable to meet these requirements, and not recommended for decision making by a recent validation study conducted in the frame of the ECHOUTCOME-FP7 European project.

Five public-health meaningful effectiveness criteria were considered, wich can be expressed in probability of "Success/no Success" with Success rates defined according to the distributions of probabilities.

Success criteria 1: probability to achieve a reduction of mortality due to influenza ≥ 40%

Success criteria 2: probability to achieve a reduction of morbidity due to influenza ≥ 30%

Success criteria 3: probability to achieve a reduction of work days lost ≥ 30%

Success criteria 4: probability of reducing the maximum weekly incidence rate

Success criteria 5: probability of delaying the epidemic peak by 2 weeks or more

To date, only Success criteria 1 has been used for practical reasons (explosive number of models). Additional success criteria will be programmed subsequently according to potential additional resources.

Costs criteria

The direct costs for each response strategy (public health interventions and communications) were estimated during WP5 according to a uniform distribution between a minimum and maximum value for each of the 18 single public health measures, in each of the four target countries, for each of the 6 pandemic scenarios. The direct costs include direct intervention costs and program communication costs. Detailed cost values have been assessed in the frame of WP5.

Cost-Effectiveness results

Cost-Effectiveness results are under embargo until the final **FLURESP public conference,** which will be organized on **March 28th** in the premises of the DG Sanco in Luxemburg.

Invitations are proposed to European stakeholders under request to **conference@fluresp.eu**

FLURESP beneficiary institutions

- **Université Paris Descartes**, *France*
- **Instituto Vasco de Investigacion y Desarrollo Agrario (NEIKER)**, *Spain*
- **Retroscreen Virology Ltd,** *UK*
- **Istituto Superiore di Sanita**, *Italy*
- **Open Rome,** *France*
- **Laurent Niddam Europai Közössegi Jogasz Iroda,** *Hungary*
- **National Institute of Public Health,** *Poland*
- **Institutul National de Sanatate Publica,** *Romania*
- **Université Claude Bernard Lyon 1,** (main beneficiary) *France*

Collaborating partners

- World Health Organisation (WHO), Headquarter
- European Centre for Disease Prevention and Control (ECDC)
- University of Crete, *Greece*
- Ministry for Health, Elderly and Community Care, *Malta*

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This project has received funding from the European Union in the framework of the Health Program 2008-2013 through the Directorate-General for Health and Consumers of the European Commission under grant agreement 2010 11 01