Information and Communication Technologies

EPIWORK

Developing the Framework for an Epidemic Forecast Infrastructure

http://www.epiwork.eu

Project no. 231807

D7.4 Yearly management report

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Work package participants

The following partners have taken active part in the work leading to the elaboration of this document, even if they might not have directly contributed writing parts of this document:

- ISI
- FGC-IGC
- TAU
- MPG
- AIBV
- SMI
- FFCUL

Change log

Version	Date	Amended by	Changes
1	20/08/13		

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1 Consortium management tasks and achievement

The members of WP7 have the task to provide administrative and scientific work, including the consortium meeting and the commission evaluation reports. A framework for the communication within the consortium participants as well as the associated partners has been set up from the very beginning in an internal area of the project website. This area is currently being used for the exchange of information between the partners keeping them updated about the work in progress and providing assistance on development of special working groups. In particular, the members of WP7 have made use of all the IT tools available to enhance communication and exchange of information between the Consortium partners. A development wiki has been set up at the address: http://wiki.epiwork.eu. As in the previous periods of the project, the wiki home page contains a section dedicated to the Project Consortium, with a brief description for each partner, and a section dedicated to Epiwork's Work Packages. These pages are intended for the members of each WP to exchange documentation, arrange meetings, set up working environments etc. Moreover, there are several mailing lists dedicated to the single Work Packages http://lists.epiwork.eu/mailman/listinfo that are actively used by the partners to communicate in an efficient way. The Archives of the discussions are available on the web page of each mailing list (for subscribed users only) so that each member of the Consortium can have a quick overview of the topics discussed over the mailing lists.

For the whole duration of the project of the project, the management has prepared a yearly progress report accounting for RTD activities and a summary of the lesson learned in CS as well as the impact and advances with respect to the prediction and predictability of complex systems (see Deliverable 7.8 for the fourth period yearly report).

During this fourth and last period of the project, as well as in the previous years, the chairs and WP leaders have been in close contact at all stages of the project and monitored constantly the detailed progress of the single WPs and the integration process. During the fourth period, the integration effort among all the different Work Packages has reached the final stages and has led to the actual integration of the several ICT platforms developed by the various WPs (see General Scientific Report and D7.8 for more details).

The project board has met for the fourth period in May 2013, in conjunction with the Final Workshop (see D8.4). The final meeting has been a moment of assessment to review the scientific and organizational matters of the Consortium, as well as an occasion to gather all the participants in a parallel Workshop with presentations to inform them about the achievements of the individual Work Packages. In this final period, the sustainability of the ICT platforms developed by the several WPs and of all the collaborations established during the whole duration of the project have been the main subjects of discussion.

2 Coordination and conflict management

The Coordinator institution has been capable of responding to the needs of the project through its management structure based on a Project Manager (Mrs. Enza Palazzo), a Financial Manager (Mr. Roberto Palermo) and a Scientific Manager (Prof. Alessandro Vespignani).

All above mentioned categories dealt with the ordinary management of the project, the coordination of the management efforts, the communication within the consortium, the control of overall project expenses, cost reports collection (mid-term and final project period), check payments and the coordination of operative efforts within the scientific and technical scope.

Both the project and financial management were carried out in compliance with the requirements of the contract.

During the Scientific Board and Steering Committee meeting in May 2013, the Consortium has deliberated that

3 Arrange meeting of Management Committee and Project meetings

During the fourth project period, the Project Board organized the following management meetings:

- Epiwork Third Period Review Meeting in Brussels, March 28th 2012;
- Epiwork WP5 Sixth Meeting in Stockholm, May 9-10 2012;
- Epiwork WP5 Seventh Meeting in Paris, September 21, 2012;
- Epiwork Annual Meeting in Torino, Italy, May 29-30 2013;
- Steering Committee Meeting in Torino, Italy, May 30 2013;

EPIWORK THIRD PERIOD REVIEW MEETING – BRUSSELS (BE) March 28th 2012

The Third Period Review Meeting was organized in Brussels, March 28th 2012, with the participation of all EPIWORK Work Package leaders (except WP2 leader Dirk Brockmann and WP1 leader Lewi Stone), the EC Officer and reviewers.

Present: Carlos BOUSOÑO CALZÓ, Jacopo CARRERAS, Dennis CHAO, Gabriela GOMES, Corrado GIOANNINI, Daniela PAOLOTTI, Ronald SMALLENBURG, Nico STOLLENWERK, Marc VAN RANST, Alessandro VESPIGNANI, Julie DUGDALE, Mario da SILVA, Beatriz VIDONDO, Wouter VAN DEN BROECK, Jose-Luis FERNANDEZ-VILLACANAS, Joao ZAMITE

Introduction to the project and the project objectives (Vespignani)
Overview description of the work performed during the third year, deliverables, success stories, deviations from the planned work.

Scientific progress report for each Work package and specific deliverables
WP1 "Population models and contact networks." Presentation. (G. Gomes, N. Stollenwerk)
   o **D1.3** - Models of disease transmission under seasonality and other externaldrivers
   o **D1.4 -** Models of spread, impact and evolution of vector-borne pathogens, including the demography and ecology of host species

WP2 "Spatially structured models and human mobility" Presentation. (A. Vespignani)
   o **D2.3** – Development of theory and stability analysis for limited path multiscale transportation networks: Networks that take into account effective multiple length scales of transportation, and their couplings. Rules for the link strengths between contacts that take into account the multiscale problem.
   o **D2**.**4** – Spatially embedded networks: Specific rules for contact in the context of spatial embedding. Properties of the networks subjected to such spatial embedding constraints.

WP3 "Information platform" Presentation. (M. J. Gaspar da Silva)
   o **D3.4** – Report for the Epidemic Marketplace Platform after release, describing changes and new implemented features, new data sources integrated with the platform, results of user surveys and usage statistics.
   o **D3**.**5 -** Report – Epidemic data ontology

WP4 "Epidemic Modelling Platform" Presentation. (A. Vespignani)
   o **D4.3** - Public release of the Epidemic Modelling Platform

WP5 "ICT monitoring and reporting system" Presentation. (R. Smallenburg)
   o **D5.5** – Test run in 2010
   o **D5.6** - Design and implementation of software for contacts patterns detections.

WP6 "Reporting systems comparative analysis and validation"Presentation. (D. Paolotti)
   o **D6.4** - The validation study of the PBA surveillance concluded, and the digitalized dataset delivered

WP7&WP8 "Management / Dissemination, collaboration and exploitation"
Presentation. (A.Vespignani) (Deliverables **D7.3, D7.7, D8.3.2** and **D8.8**)

Presentations of demos and multimedia material not discussed as deliverables
WP3 Epidemic Marketplace (Joao Zamite)
WP4 GLEaMviz (Corrado Gioannini)
WP2 SPATO visualization (Wouter van den Broeck)
WP5 Influenzanet corporate website and centralized DB and IMS new features (Ronald Smallenburg)
WP3-WP4: integration between EM and GLEaMviz (Corrado Giannini and Joao Zamite)
WP2-WP4: integration between SPATO and GLEaMviz (Wouter van den Broeck)
WP4-WP5: integration between Influenzanet and GLEaMviz visualizations (Wouter van den Broeck)

The summary of the evaluation from the reviewers is the following:
The project has had a productive third year with a large number of publications, releasing new versions of software, establishing working contacts with ECDC (European Centre for Disease Prevention and Control), the JRC (Joint Research Centre) and the WHO (World Health Organisation), and disseminating the work through conferences, workshops and educational outreach efforts.

The consortium has put a lot of effort into integration issues this last year and there has been very good progress concerning platform integration. Some theoretical results have been integrated into the platforms, and conversely some of the data from the platforms has been used to develop theoretical models.

There are several challenges for the coming year: integrating Influenzanet into the platforms, increasing the user base of the platforms, and promoting the use of tools to ensure sustainability. WP2 is primarily devoted to develop theories for Complexity Science and this important focus should continue over the last period of the project.

EPIWORK WP5 6th MEETING – STOCKHOLM (SV) 9-10 May 2012

The meeting was held at the Swedish Institute for Communicable Disease Control (Smittskyddsinstitutes), Nobel vag 18, Solna (Stockholm), on 9 to 10 May, 2012.

Present: Iacopo Carreras (CREATE-NET), Catarina Júlio, Sander van Noort, Ana Franco, Rui Francisco (FGC-IGC), Daniela Paolotti, Corrado Gioannini, Wouter van den Broeck (ISI), Piet Maes, Lieselot Houspie (KU Leuven), Ken Eames, John Edmunds, Sebastian Funk (LSHTM), Amelie Plymoth, AnnaSara Carnahan, Olof Nyren Mohammad Rasoli (SMI), Carl Koppeschaar, Antwan Wiersma, Klaas van Schelven, Ronald Smallenburg (AIBV), Marion Debin, Vittoria Colizza, Clement Turbelin (INSERM).
Annasara Carnahan in the chair

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A short list of all presentations follows hereafter. The presentations themselves can be found on the Epiwork wiki site: http://wiki.epiwork.eu/index.php/ (username: epiwork_user
passwd: FP7-eu-epi)

Introduction to the WP 5 Meeting: *agenda, procedures, expected results*
Ronald Smallenburg, AIBV/GGM

Self-reporting, self-administered sampling and lab analysis: *an introduction*
Amelie Plymoth and Olof Nyrén, SMI
>   Amelie described Jobb och Smitta. They found a 50% higher disease reporting in JoS than in Sjukrapport, a decrease in underreporting- Lab analysis is the major cost and logistics issues the major issue. 87% of reports also result in a swab being sent in

 Evaluation of past season: *general discussion, questionnaires, communication and recruitment, Influenzanet platform management, summary of lessons learned*
Discussion chaired by Ronald Smallenburg, AIBV/GGM
>   AnnaSara Carnahan described the results of the initial analysis (deliverable 6.4). Also described plans for new combined system during 12-13, but this part was very rushed.

>   Plans to survey participants regarding their participation was met with support. UK has done this, France and NL as well. They will send their surveys to me. Suggestions:

>   o   What questions were too invasive?
>   o   Weekly time spent
>   o   Perception: survey too long?
>   o   How did you interpret x question? (hard to do)
>   o   Would a diagnosis have helped?

Past season / WP5 (Ronald)
- WP5 doing well. Influenzanet.eu a good resources. Gleamviz integration of Inlfuenzanet data needs to happen (see below).
- Lesson learned: Dropout is dramatic going from old to new system. NL/B lost 30% in 11-12 as a result of the new platform and reduced tools (like forum and competitions).

Questionnaire/ Participation (general discussion)
- Would like to add "info" button about each question (why are we asking this). John to lead.
- Would like to add "do not want to answer" to all questions. Piet to lead questionnaire redo.
- Portugal has emailed each participant to see if they want to continue. In the non-pandemic had 2500 participants. Drop with new intake questionnaire.

- Issue of data of onset vs. data of symptoms reported.
- A uniform FAQ would be helpful to ensure data are similar. UK has one.
- The system cannot allow dates in the future.
- User interface improvements. Antwan to work on making it look and feel cooler. Household management, user interface.

Case definitions (Ana, Portugal)

The algorithms for cold, allergy, and gastroenteritis are not correct with our case definition (not implemented in the code correctly). Ana in charge of redoing case definitions. All send her comments.

Influenzanet.org: *new design, functionalities and content*
Comments and suggestions by Wouter van den Broeck, ISI

Gleamviz and its integration with Influenzanet

Gleamviz is the visualization software/system that has been developed under Epiwork. They have created simulations of epidemics/pandemics spreading over the globe through transportation/flight lines.

- Plan is to compare Influenzanet data with simulations.
- One issue is how to change the postal code shape files into the 25 x 25 km grid used in Gleamviz.
- The cases would be distributed to the cells of the grid through statistical methods, so participants would not be individually exposed to scrutiny.

Wouter needs a representative from each country to help with this:
Wouter@addith.be

Preparing the new season: *round table presentation per country*
Discussion chaired by Ronald Smallenburg, AIBV/GGM

UK Analysis plans (John Edmunds)

- UK plans to do a statistical analysis of clustering, both household clusters and multiple episodes in an indivisula.
- Demographics vs. UK. Good vs. bad participants. Will study retention. Adjust ILI incidence?
- Paolo at ISI is doing a central analysis of retention (all countries).
- Selection bias. Pausing membership. See whether re-entry is linked to sickness or wellbeing. Quantify this effect.

ESCAIDE (general discussion)

- John plans to submit an abstract about risk factors. Vittoria plans to send an abstract about their analysis of participation (good vs. bad participants). Let's all communicate about abstracts.
- Discussion of last year's failed abstract submission. AnnaSara explained we cannot use ESCAIDE as a platform for advertising. We need to showcase actual scientific results.

European map on Influenzanet (Klaas van Schelven, general discussion)

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- Would it be possible to show the European map on all the local country sites? Maybe not… The data would have to be linked to the shape files and plug it in to Django (the system).
- Geographic model. Which administrative levels are available in your country? How many levels is up to the country. Klaas needs the shape files for all administrative levels as well as postal code. It is ok not to show dots / postal codes if you do not want to.
- New maps could be developed. Ideas:
  o A dynamic map showing only the areas with enough people (combine areas with to few people).
  o Would be nice if the map could toggle between dots and a "heatmap" (smoothed colors)
  o One ideas is to have several levels for each country so you can zoom in.
  o Color darkness could indicate the %ILI while the transparentcy could represent statistical significance (number of participants, e.g.). Comment: Maybe this would not understandable for the general public though.

Amendment / Epiwork Review Meeting (Daniela Paolotti)
- The amendment for extending Epiwork for 6 months will be submitted and should come through in the fall of 2012.
- Daniela reported on the review meeting that took place in Brussels in March 2012.
- Overall, the reviewers were happy with WP5, but pushed for more integration. The other pieces have been integrated, so only WP5 is left.
- The no-cost extension and moving of funds is likely to be approved.
- Daniela says a big question for the group is, what will happen to Influenzanet after 2013?
- AnnaSara asks if we own the code to the Influenzanet system and Ronald says definitely yes.
- Daniela went to a conference in webbased epidemiology in Cardiff.
- What happens to the influenzanet system when Epiwork is finished (2013)? We can use the system, but what else?
- The scientific committee will email all countries if someone wants country-level data.

Guests from ECDC and Robert Koch Institute

Influenzanet presentation: *results and perspectives*
John Edmunds, LSHTM
  Scientific studies (John Edmunds)
  - UK pandemic data: changes in behaviors affect the sentinel system a lot
  - That is why population based systems are so useful
  - Can also measure attitudes toward vaccines

- Vaccine effectiveness measure through "matched cohort" of participants in FluSurvey.
- Study published: Eames et al, Comp. Biol. 2012
- The French team has created a visualization of symptoms, with symptom bubbles changing over time.
- Can we create a temperature vs. ILI graph?
- HPA is matching the point incidence found in a phone survey of UK persons to their data in FluSurvey. Early analysis indicates it matches well and they have "comparable results", but he cannot say more at the moment.

Grippeweb.rki.de (Udo Buchholz)
- German system that is very similar to the Influenzanet system. From week 4, 2011 to week 18 they gained 1000 participants. Will be running all year.
- Asks "Have you had an acute respiratory illness during the last week?" Yes or no (Hat sie atmen…?)
- They encourage participation through a lottery. Every filled survey enters you into the lottery, so the more you participate, the higher the changes. Prizes include Ipads and laptops.
- They use a moving average of 3 weeks using the date of onset. They show the % ILI per participants that week. There is a 4 week limit to report previous weeks' illnesses.
- VE confounded by age. Did not show statistically significant differences.
- Sanders says they saw vaccine effectiveness in people not at risk.

ECDC Surveillance (Marion Muehlen)
- Marion represents ECDC today but is not currently working in flu at all, so she is giving Angus' presentation. Apologies. What is important to ECDC is to keep surveillance risk-based and action based. Each season is different. Precise parameters for models are needed.
- Contact: influenza@ecdc.europa.eu

Surveillance through Social Networks (Patty Kostkova)
- Patty is from the City ehealth Research Centre (CeRC) in London.
- Look at game "bugs and drugs" at www.antibioticresistance.org.uk. Also www.edugames4all.com and www.e-bug.eu. Edugames are open sources and have games for kids, in several languages.
- Patty has looked at data from twitter. Best correlations to sentinel ILI during the pandemic were the tweets "I have the flu" and "I have swine flu".

Discussion: *comments, exploring ways of cooperation*
Discussion chaired by John Edmunds, LSHTM
  Other issues / comments brought up during the WP5 meeting:
- 2012 as the year born may indicate a zero, as in a null value. Sweden should check this when cleaning the data.
- People sick more than once during the week may mess up incidence numbers.

- Ideas for what features should be incorporated into the new app for Influenzanet should be sent to Daniela.
- Field Epidemiology Manual may also be interesting (EPIET resource).

EPIWORK WP5 7th MEETING – Paris (FR) September 21 2011

The meeting was held at Hôpital St. Antoine, Faculté de Médicine, 27 Rue Chaligny, Paris.

Present: Ana Franco (FGC-IGC), Daniela Paolotti Corrado Gioannini Wouter van den Broeck (ISI), Ken Eames John Edmunds Sebastian Funk (LSHTM), AnnaSara Carnahan (SMI), Carl Koppeschaar Antwan Wiersma Klaas van Schelven Sander van Noort Ronald Smallenburg (AIBV), Vittoria Colizza Clement Turbelin Marion Debin Therry Blanchon Thomas Hanslik Alessandra Falch Daniel Levi-Brhul Isabelle Bonmarin (INSERM) Lieselot Houspie (KU Leuven)

Introduction to the WP5 Meeting: *participants, agenda, procedures, expected results*
Ronald Smallenburg, AIBV/GGM

Update on scientific results and ongoing work, 1st part: *round table discussion*
Discussion chaired by John Edmunds

Influenzanet.org: *European map*
Comments and suggestions by Wouter van den Broeck, ISI

Preparing the new season: *round table presentation per country*
Discussion chaired by Ronald Smallenburg, AIBV/GGM

Future of Influenzanet: *prospects*
Discussion chaired by Ronald Smallenburg, AIBV/GGM

EPIWORK 4th PROJECT MEETING – Torino 29-30 May 2013

This fourth and last project meeting was not only the usual check point of the activities of the project within the consortium but also, more importantly, as a moment to assess the final integration effort and joint research among the partners and among the Work Packages, in preparation for the last review meeting. The meeting has allowed, as in the previous years, all partners to provide a summary of the activities undertaken and the progress of the research activities. As the previous years, we hax all the formal moment of the consortium with the Steering committee meeting. Emphasis has been given to the effort of the Consortium to meet the previous year

feedback concerning integration, collaborations and exploitation of the results as well as the plans for the sustainability of the platforms after the end of the project.

The meeting was held at the ISI Foundation, via Alassio 11, Torino, Italy, on 29 and 30 May, 2013.

Present: Moa REHN, Annasara CARNAHAN, Vittoria COLIZZA, Francisco COUTO, Mario DA SILVA, Paulo GRAÇA, John EDMUNDS, Ken EAMES, Corrado GIOANNINI, Carl KOPPERSHAAR, Daniela PAOLOTTI, Ronald SMALLENBURG, Lewi STONE, Alessandro VESPIGNANI

Absent with apologies: Shlomo Havlin, Dirk Brockmann, Stefano Merler, Gabriela Gomes, Daniele Miorandi, Iacopo Carreras, Olof Nyren

Opening of the 4th Epiwork Project Meeting (all partners)
 Review of the agenda, next deadlines, incumbencies and administrative issues (moderator A. Vespignani).
The issues to be discussed and assessed were the following:
1. The Status of the art
2. Integration challenges
3. Deliverable progress
4. Preparation of Brussels review meeting
5. What after the end of the project?

AV stated that the Project has had very good outcome and excellent evaluation by EU, especially regarding the integration among the different platforms; the EC expects the merging of surveillance infrastructure with the Data collection and Computational infrastructure. As far as the deliverables are concerned, AV states that there are no particular problems since the various platforms were released in advance.
Project follow up: ensuring that all the Work done within the project doesn't go lost is a priority, one possible resource is the new EC program Horizon 2020;

Scientific progress report from WP1
(include also dissemination and outreach activities).
- Lewi Stone

Scientific progress report from W2
(include also dissemination and outreach activities**)**
- Alessandro Vespignani

Scientific progress report from WP3 + Demo of the Epidemic Marketplace
(include also dissemination and outreach activities**)**
- Mario da Silva

Scientific progress report from WP4 + Demo of the Simulator
(include also dissemination and outreach activities**)**
- Alessandro Vespignani

Report on the integration effort between WP3 and WP4, and WP1/WP2 and WP4 (new deliverables about Agent Based functionality and Contact Matrices)

Next steps and yearly review preparation (EC project review meeting**,** WP intra-collaborations and integrative assessment**,** Preparation the 3rd year report:scientific, dissemination/outreach)
- ISI, MPG, FFCUL

Scientific progress report from WP5 + Demo of the Influenzanet European Map/Platform
(include also dissemination and outreach activities**)**
- Ronald Smallenburg, Daniela Paolotti

Scientific progress report from WP6
(include also dissemination and outreach activities**)**
 - Annasara Carnahan

Focus meeting on WP5 (organizers R. Smallenburg, D. Paolotti)
Discussion of scientific and technical issues: AIBV, ISI, LSHTM, SMI, IGC
Next funding opportunities for the Influenzanet Consortium

Wrap up discussion and last year timelines.
WP leaders report a consolidation summary.

EPIWORK STREERING COMMITTEE – TORINO, Italy 20-30 May 2012

The Consortium assessed the success of the projects in terms of results, dissemination, inter- and intra- Work Package integration and impact on policy making.

All the WP leaders agree that the six months extension has brought the possibility to finalize the data collection of the WP5 IMS as well as the integration among the several ICT platforms.

The main concern of the Consortium is about the future sustainability of the framework successfully put in place during the project. All the WP leaders agreed in continuing the effort for future collaborations in EC proposals and projects.

FINAL WORKSHOP – Torino 30-31 May 2013
The Consortium organized a final Workshop in Torino, at ISI Foundation. This has resulted in quite a quite a large event with a huge impact on public health environment with great benefit for the project. Details of the organization and outcome of the Workshop can be found in the **Deliverable 8.4.**