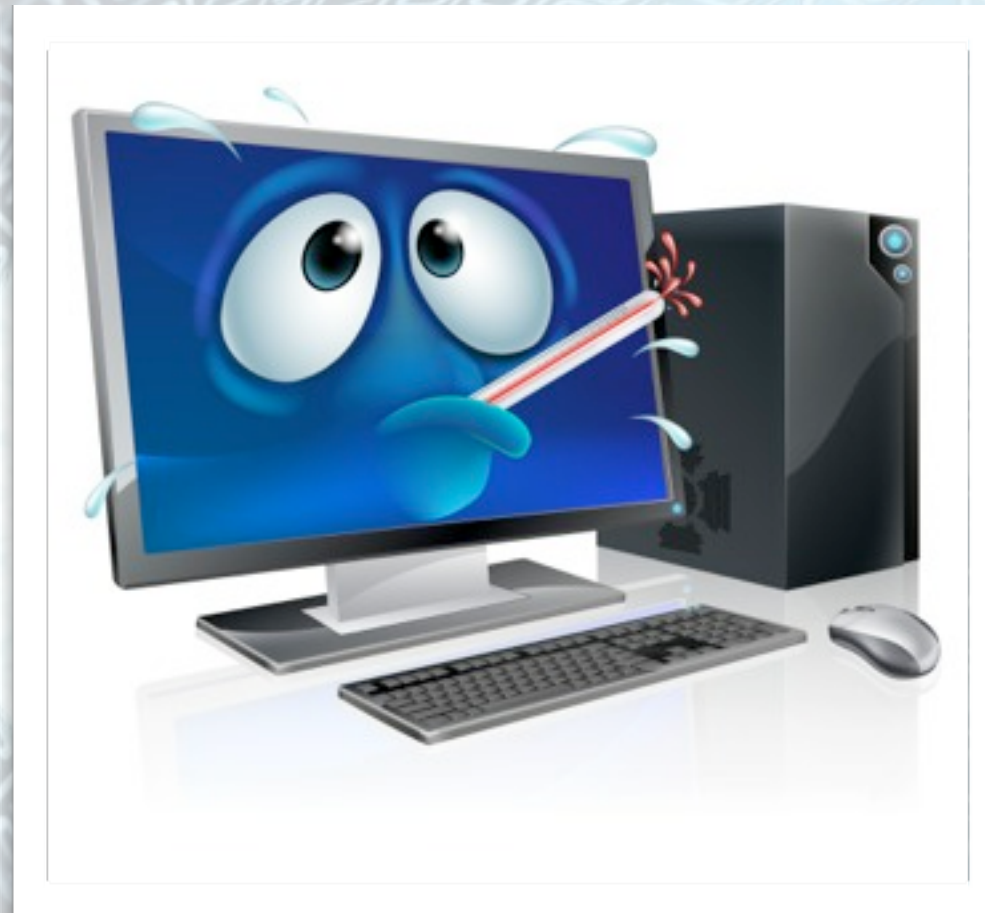


La sorveglianza Influwed: sistema di partecipazione volontaria per il monitoraggio dell'influenza in Europa ed in Italia



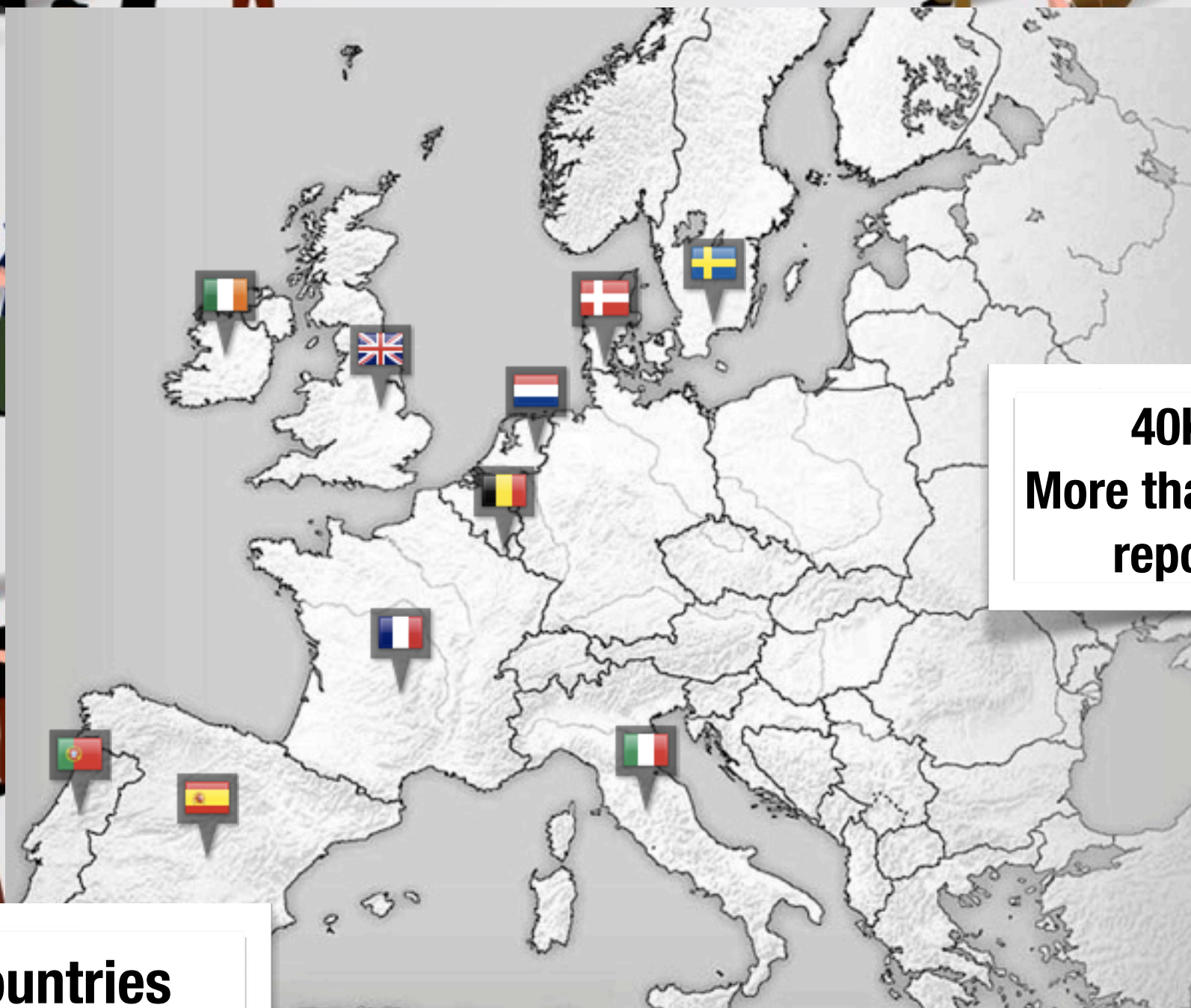
Daniela Paolotti

Focus sulla sorveglianza integrata e la prevenzione dell'influenza in Italia

15 Maggio, 2015, Istituto Superiore di Sanità, Roma



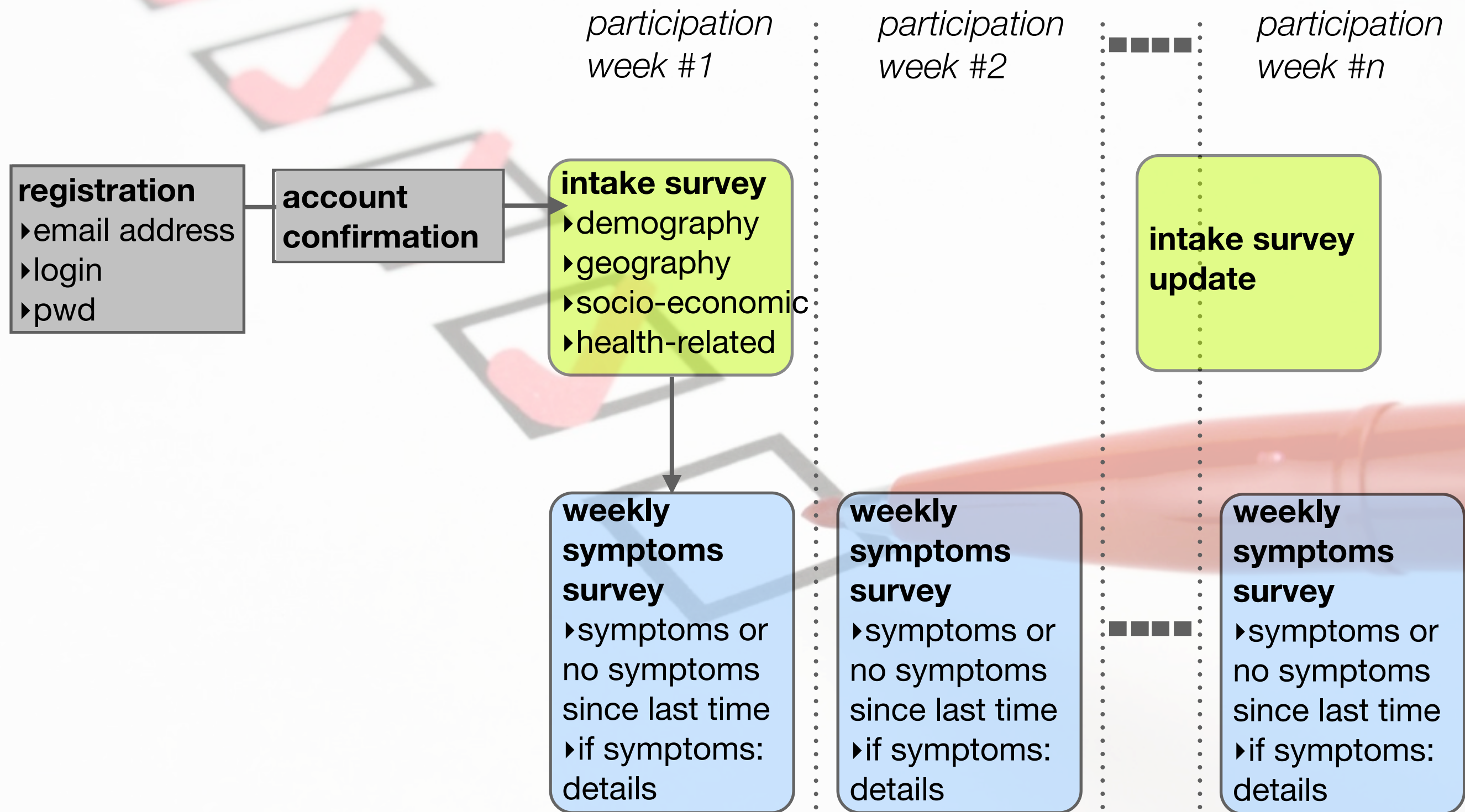
INFLUENZANET

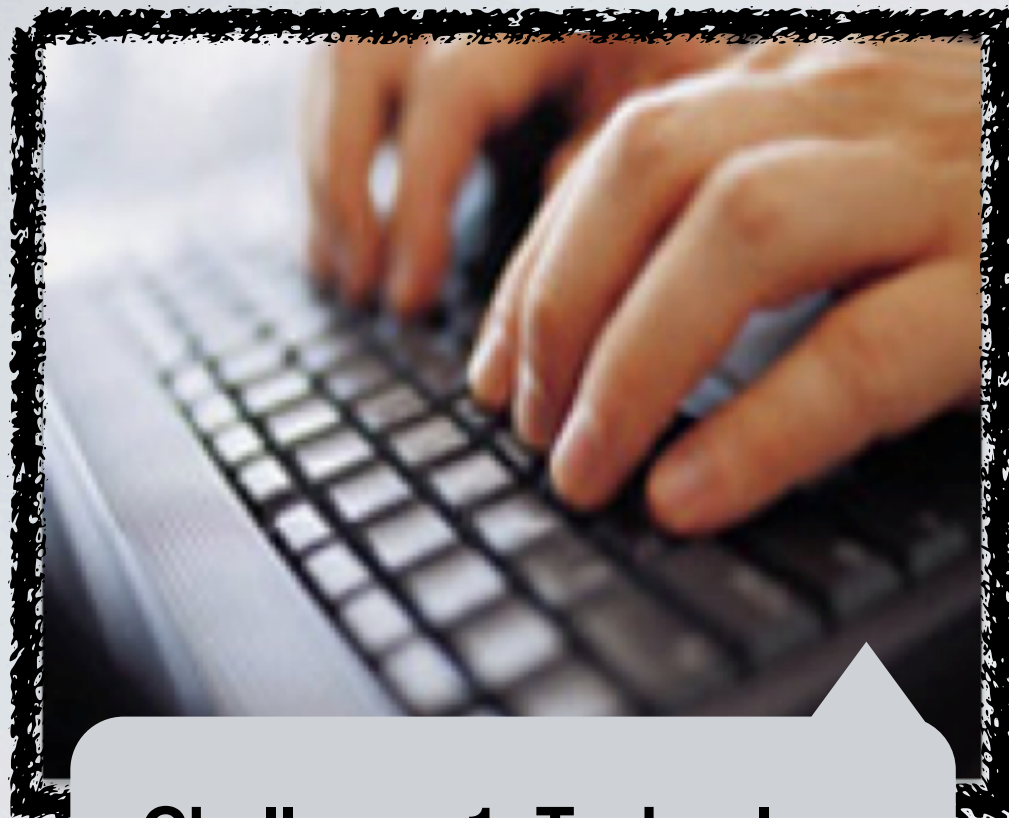


40K participants
More than 150K symptoms
reports every year

- **2003: 2 countries**
- **2013: 10 countries**

INFLUENZANET: STUDY DESIGN





Challenge 1: Technology



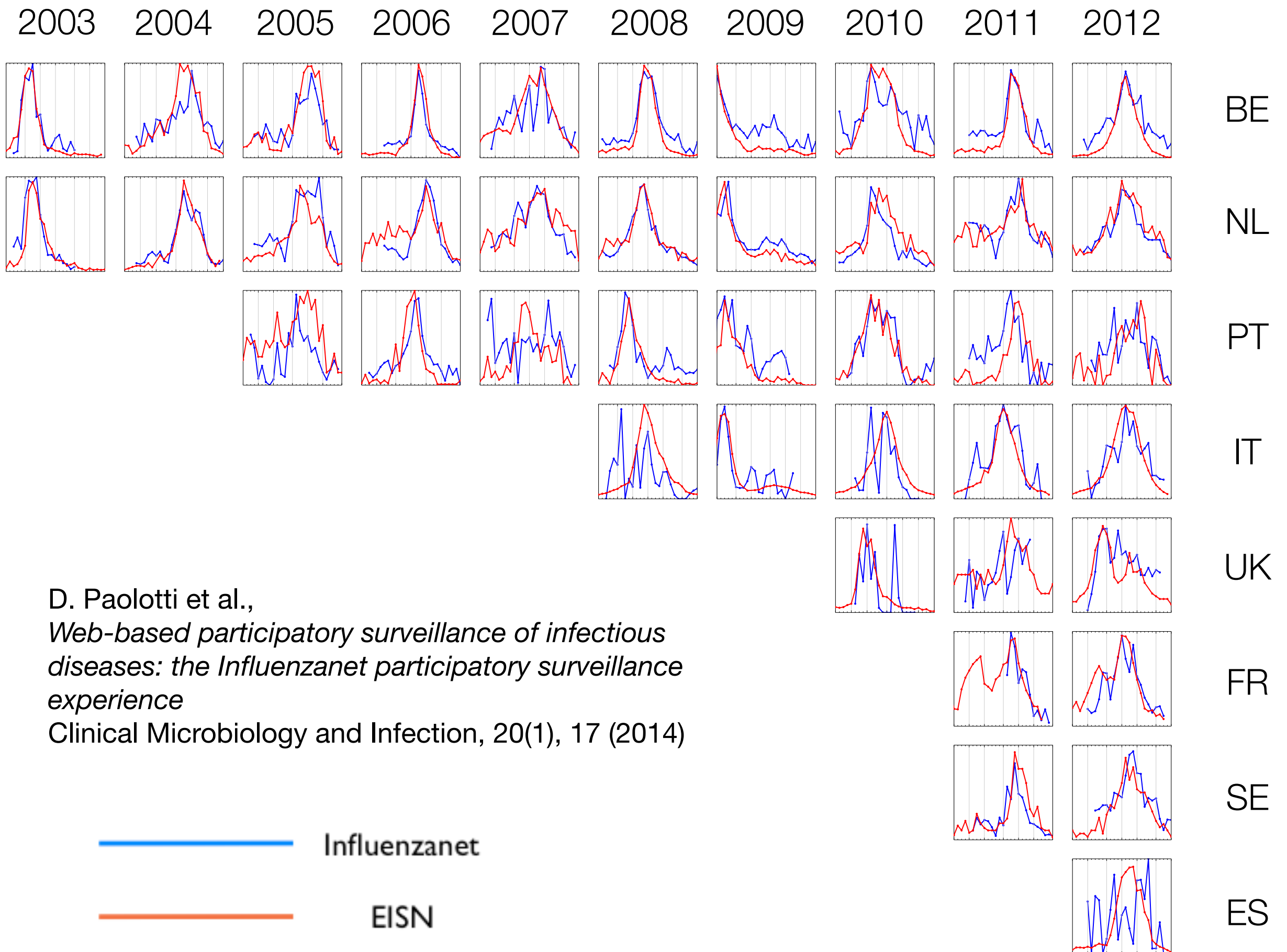
Challenge 3: different level of tech expertise in each of the participating team



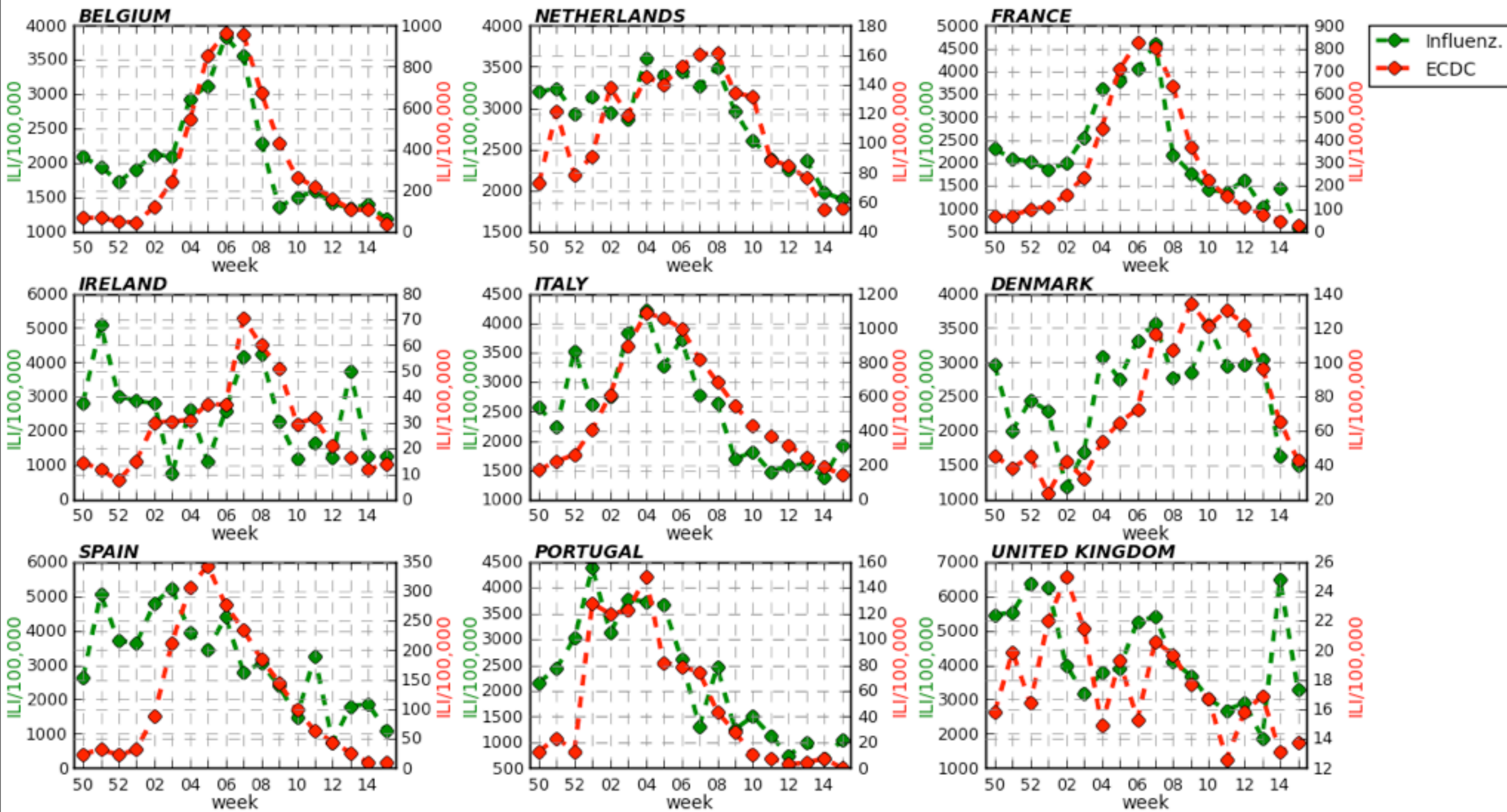
Challenge 2: cross-country variability, different internet adoption, culture, language



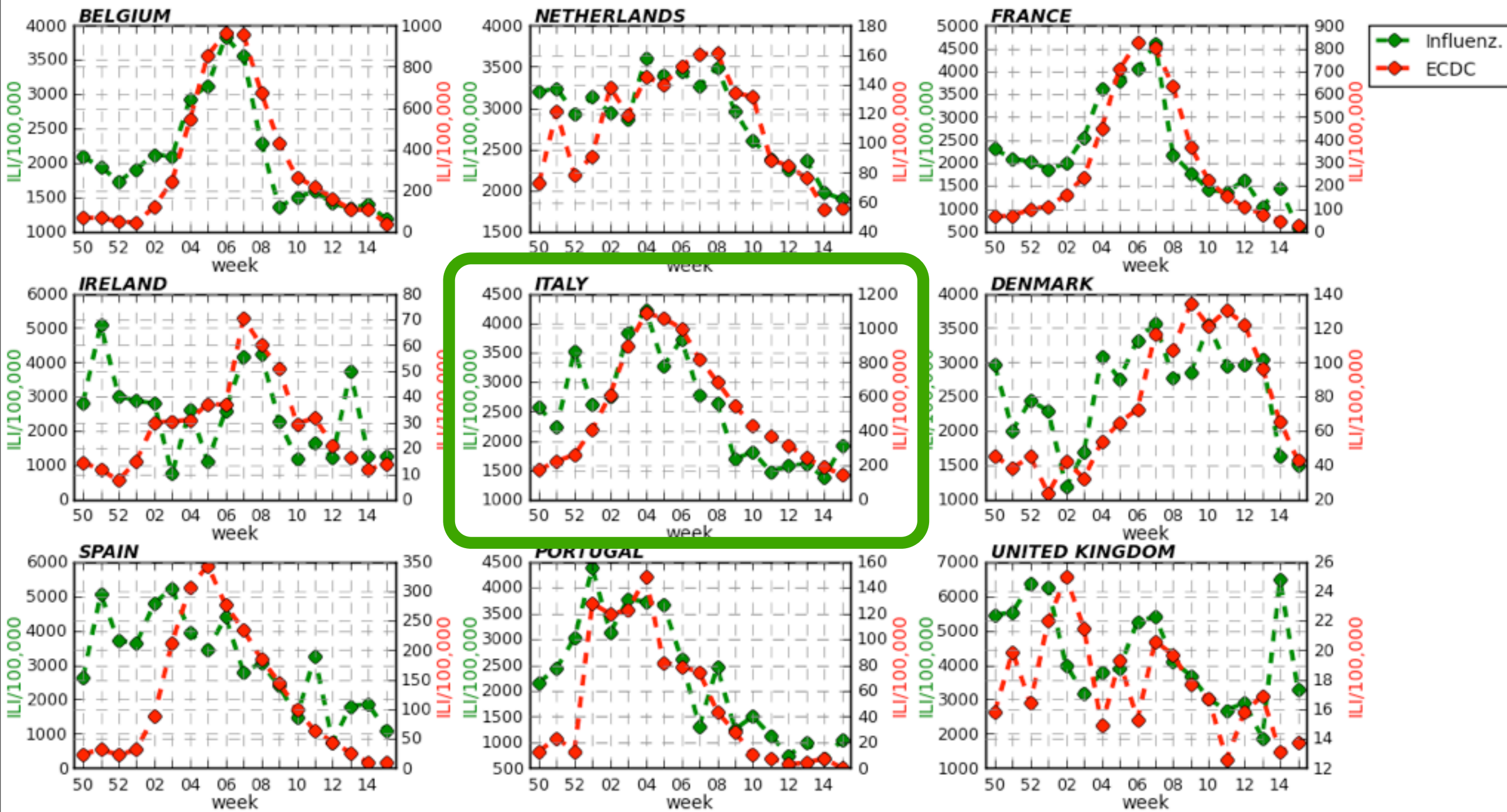
Challenge 4: user engagement and retention



2014-2015



2014-2015



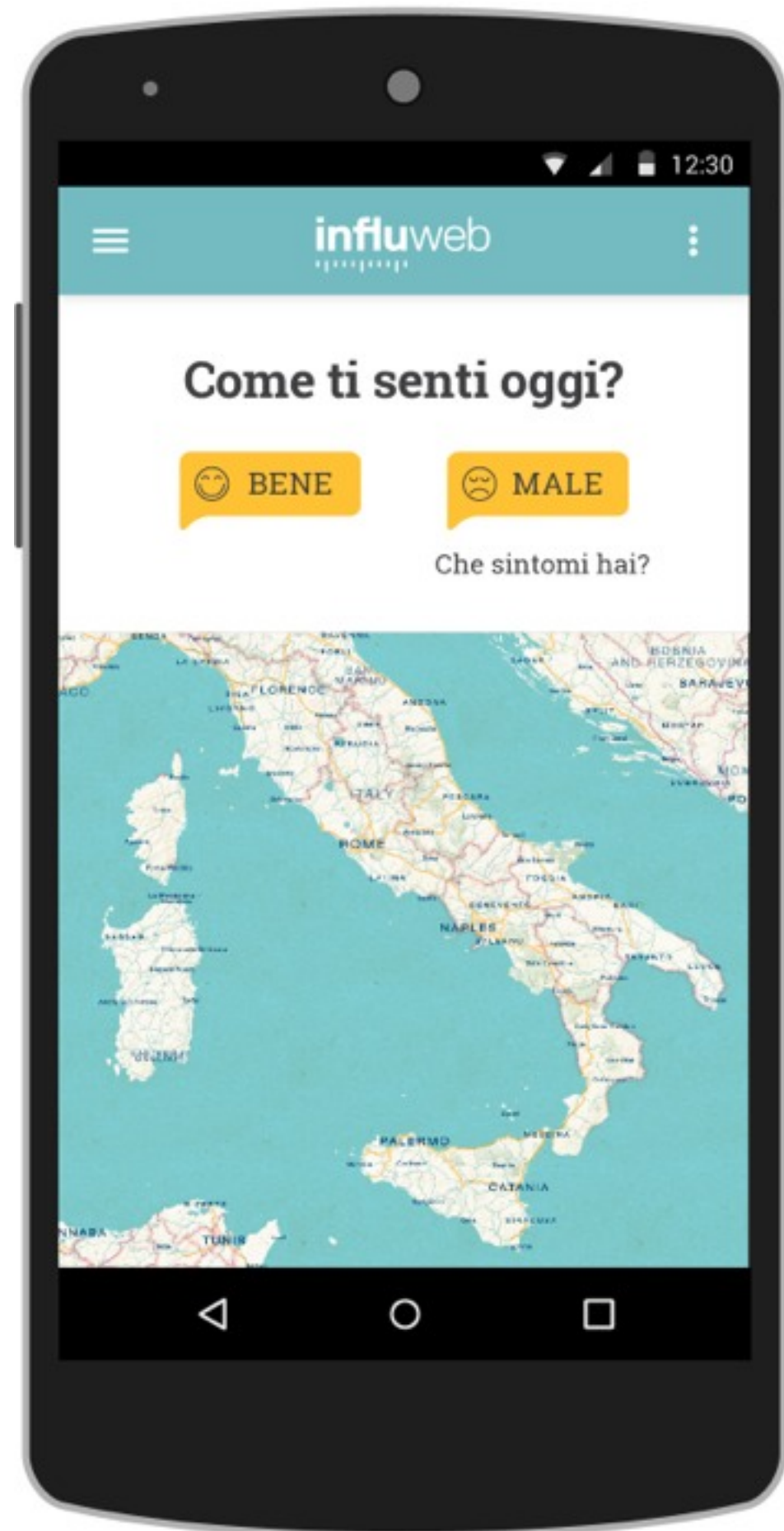
Communication & Engagement

influweb

mobile



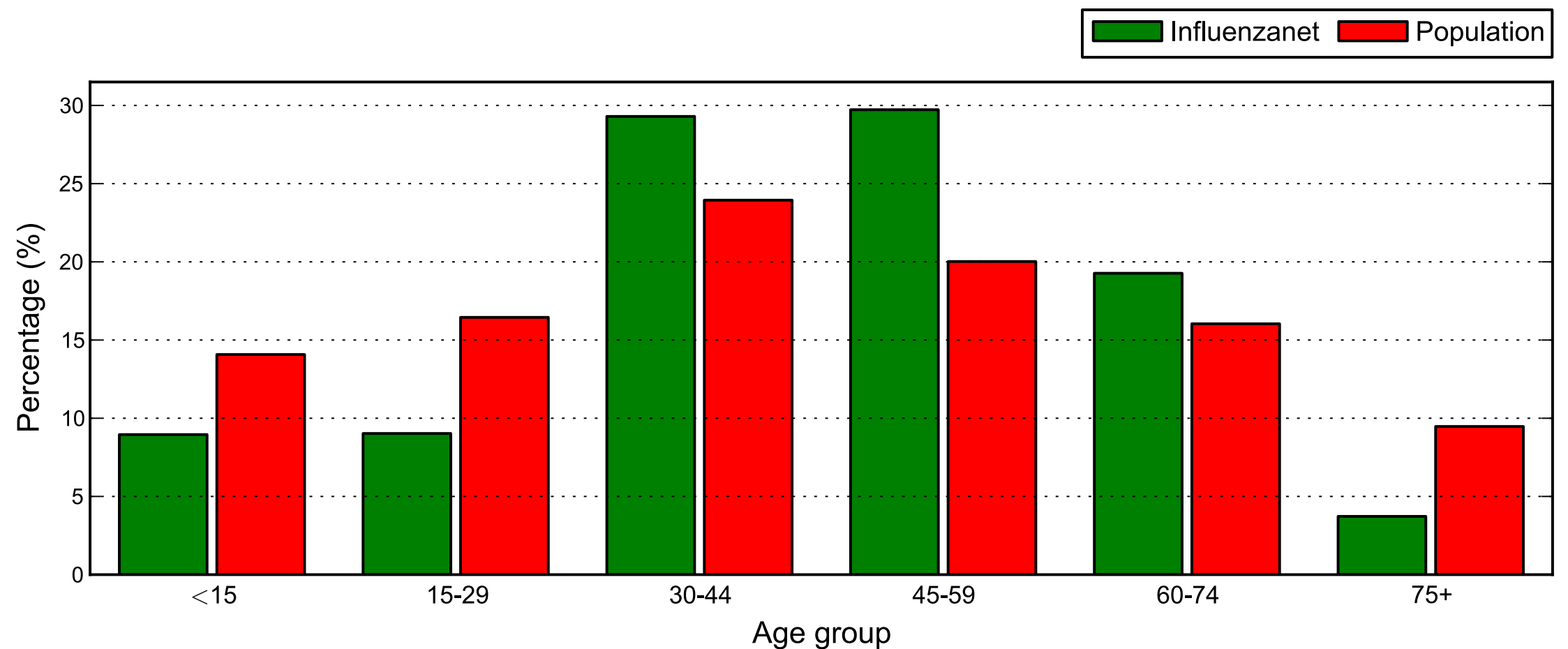
About 3000 participants in Italy every year





Who's your citizen scientist?

Age distribution

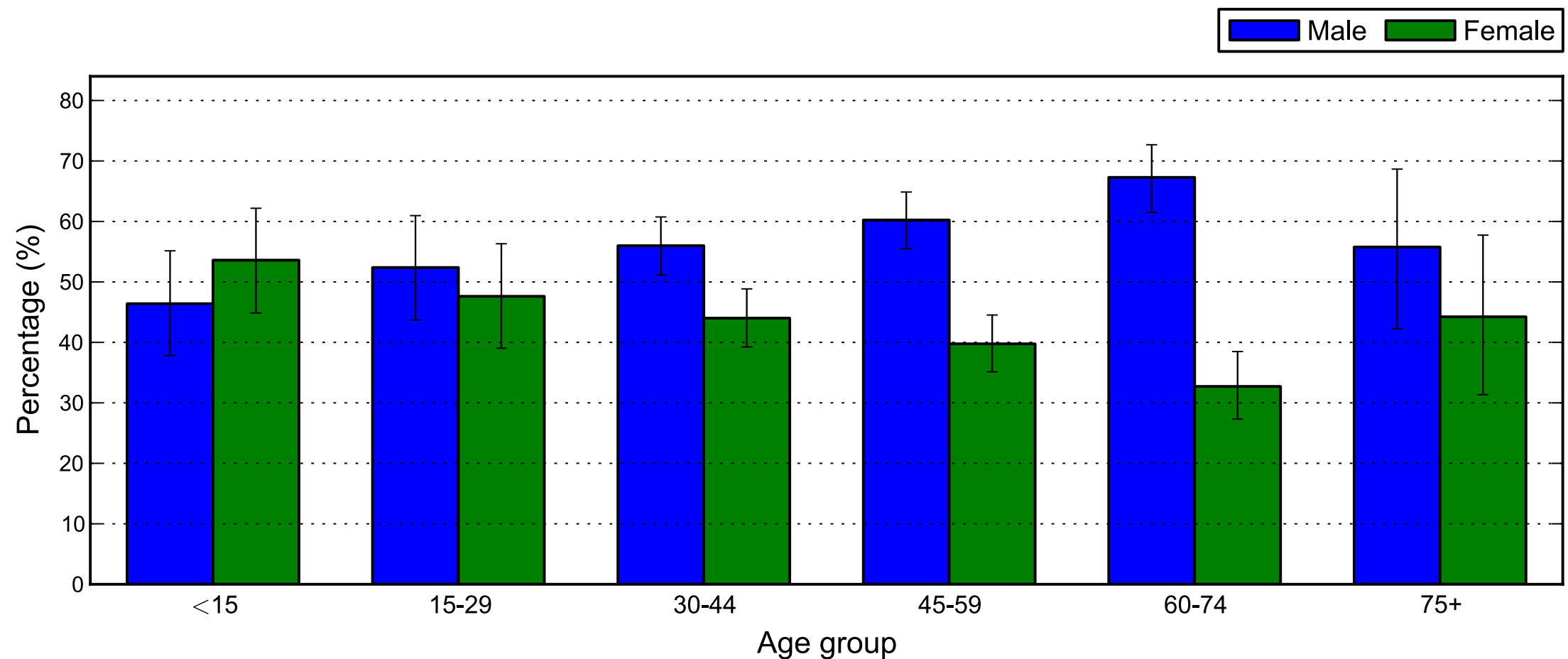


<http://www.influenzanet.eu>

11 May 2015

AGE / GENDER

Gender distribution

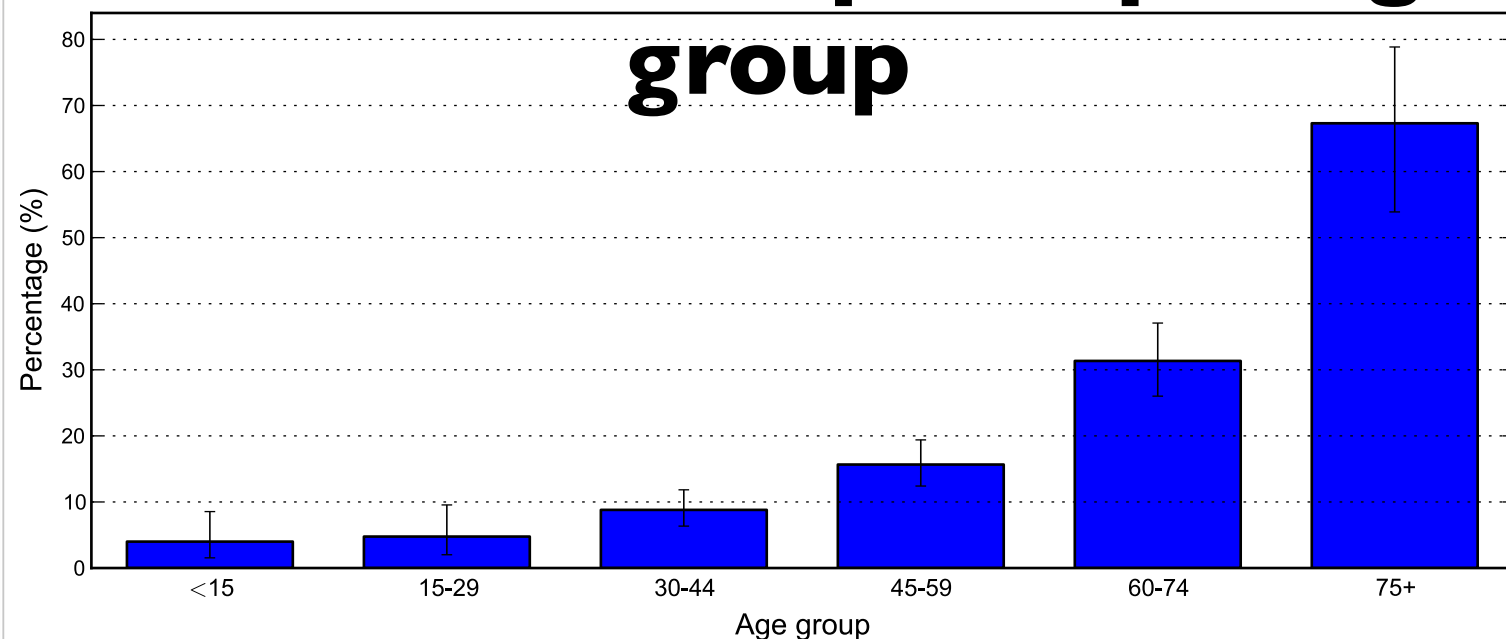


<http://www.influenzanet.eu>

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AGE / GENDER

Vaccination adoption per age group

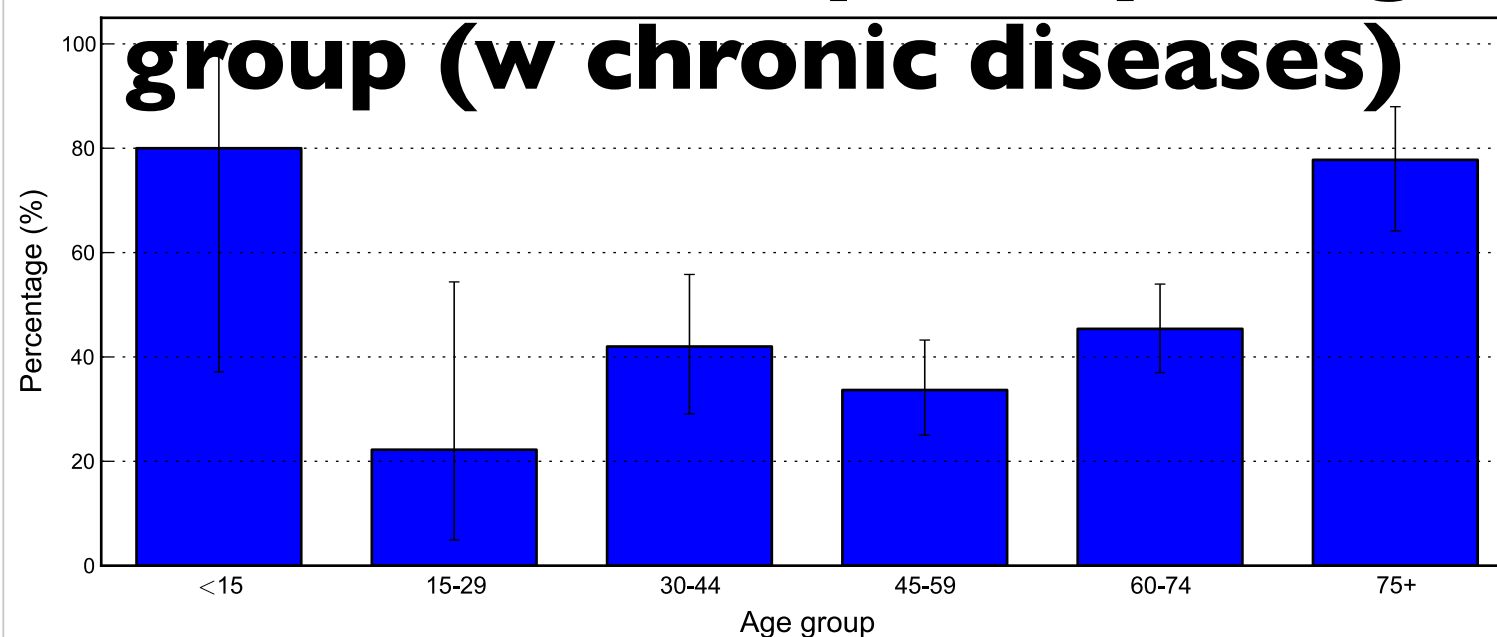


<http://www.influenzanet.eu>

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VACCINATION COVERAGE

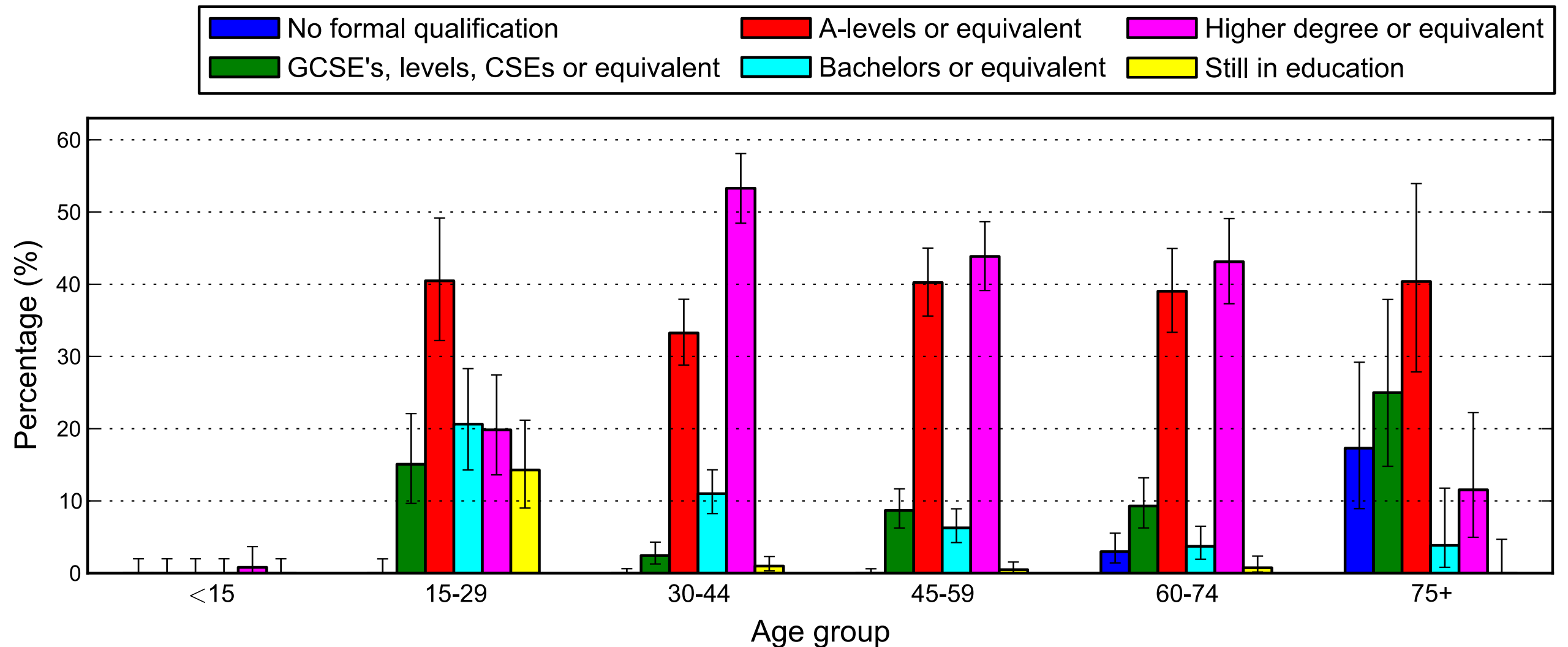
Vaccination adoption per age group (w chronic diseases)



<http://www.influenzanet.eu>

11 May 2015

Level of education

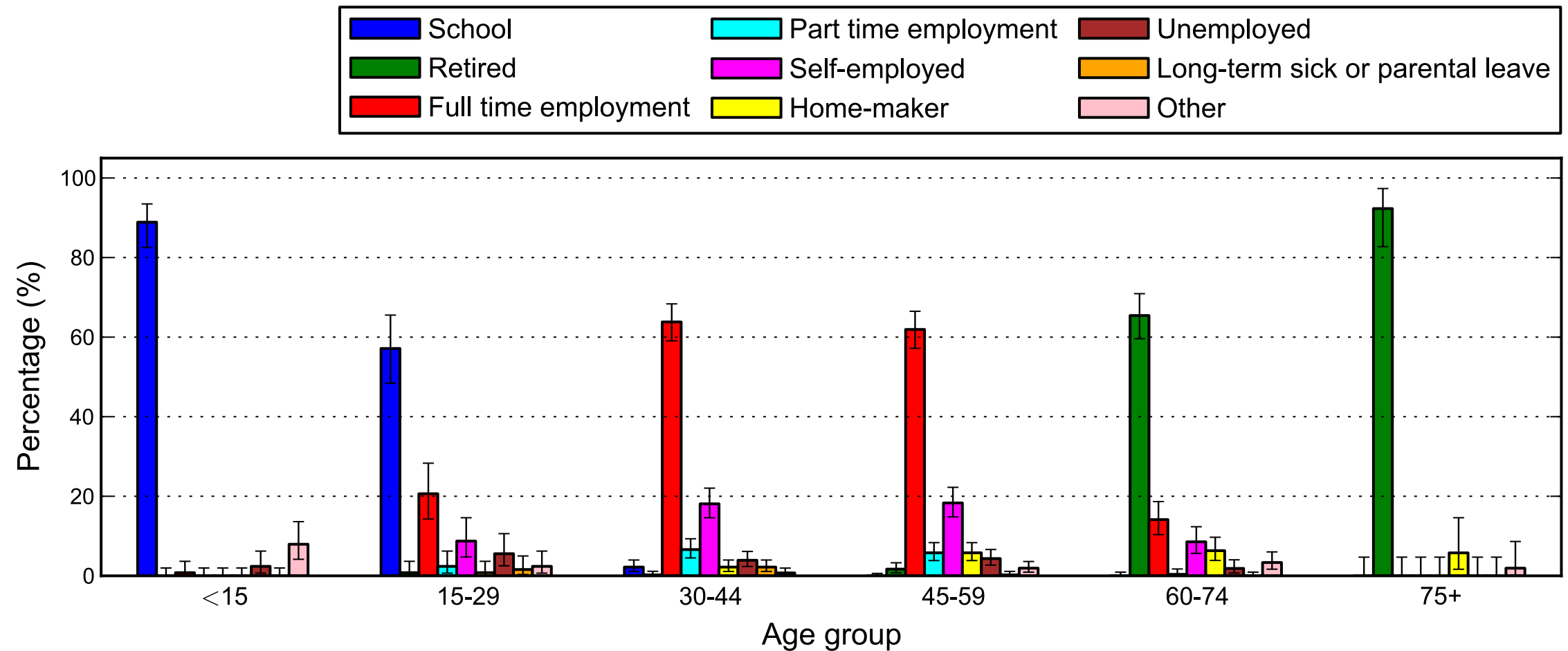


<http://www.influenzanet.eu>

11 May 2015

SOCIO-ECONOMIC INDICATORS

Daily occupation

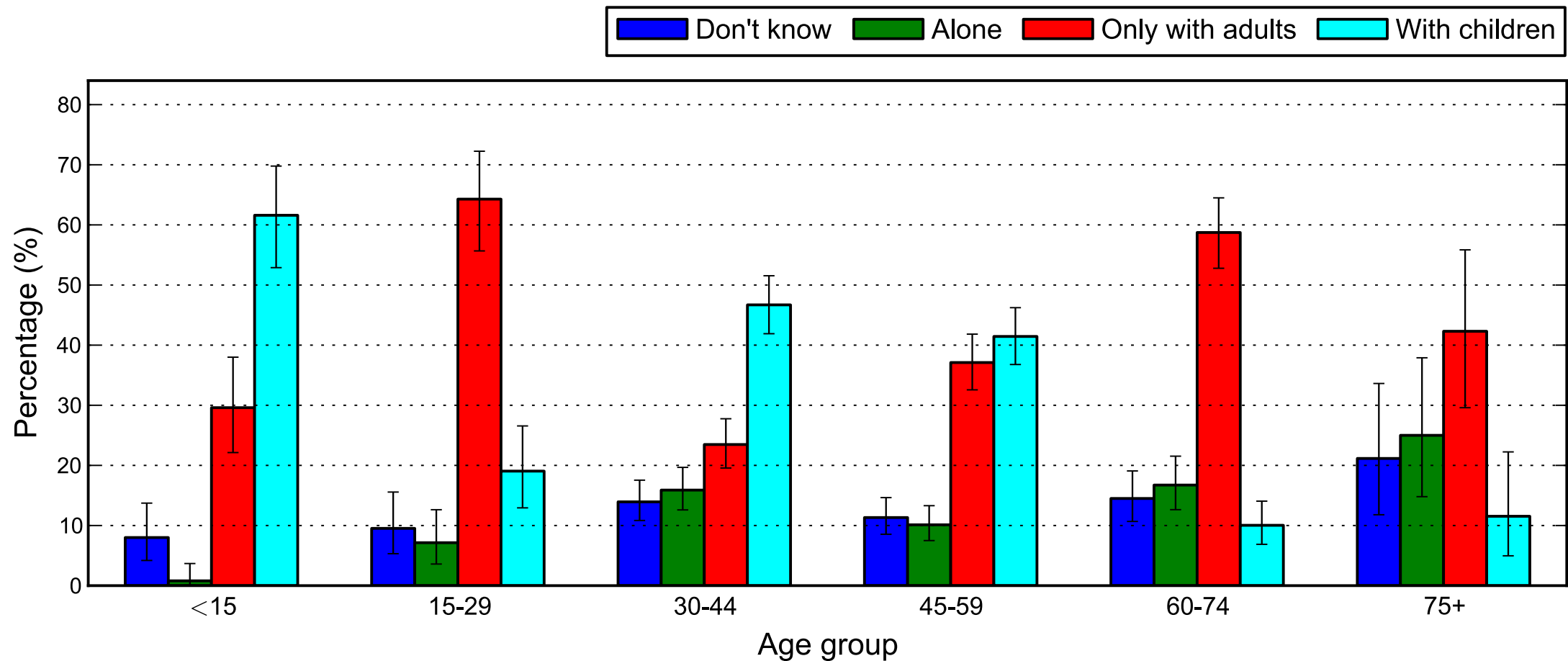


<http://www.influenza.net.eu>

14 May 2015

SOCIO-ECONOMIC INDICATORS

Household composition

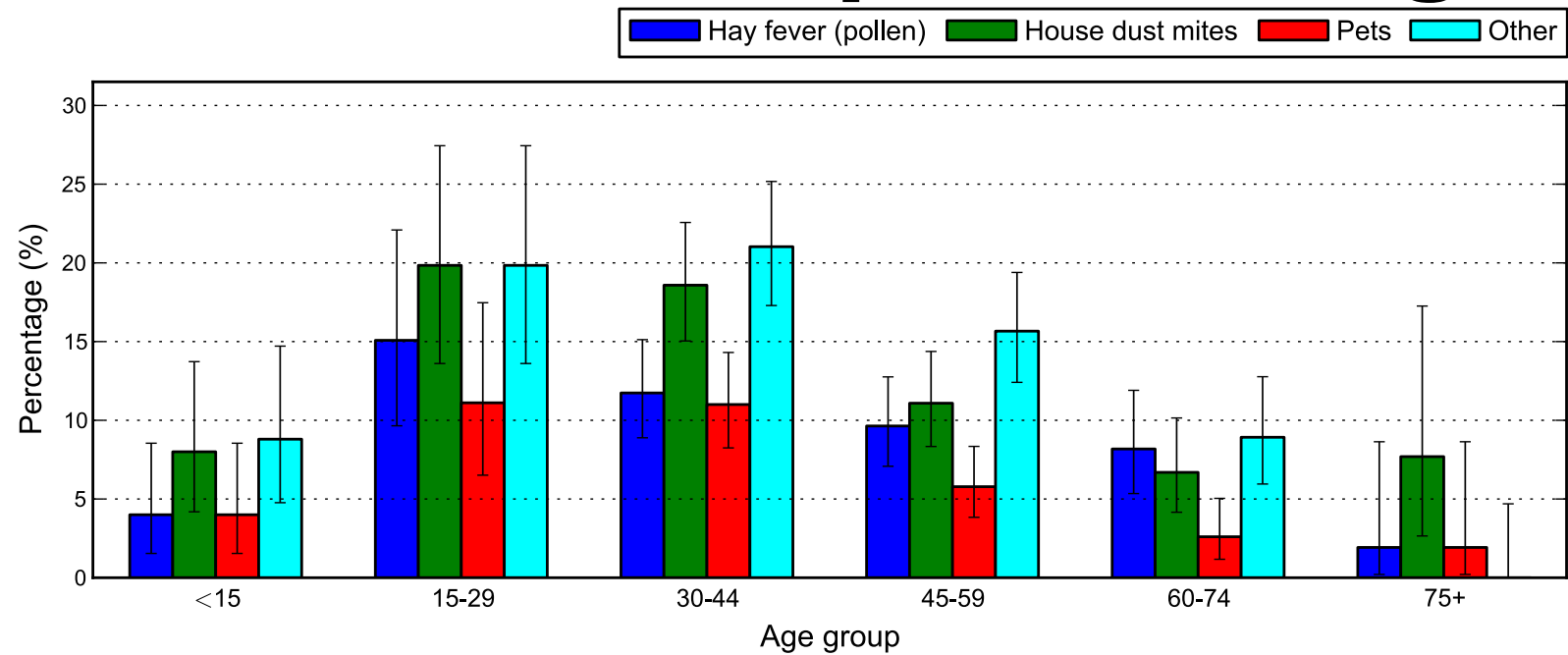


<http://www.influenzanet.eu>

11 May 2015

SOCIO-ECONOMIC INDICATORS

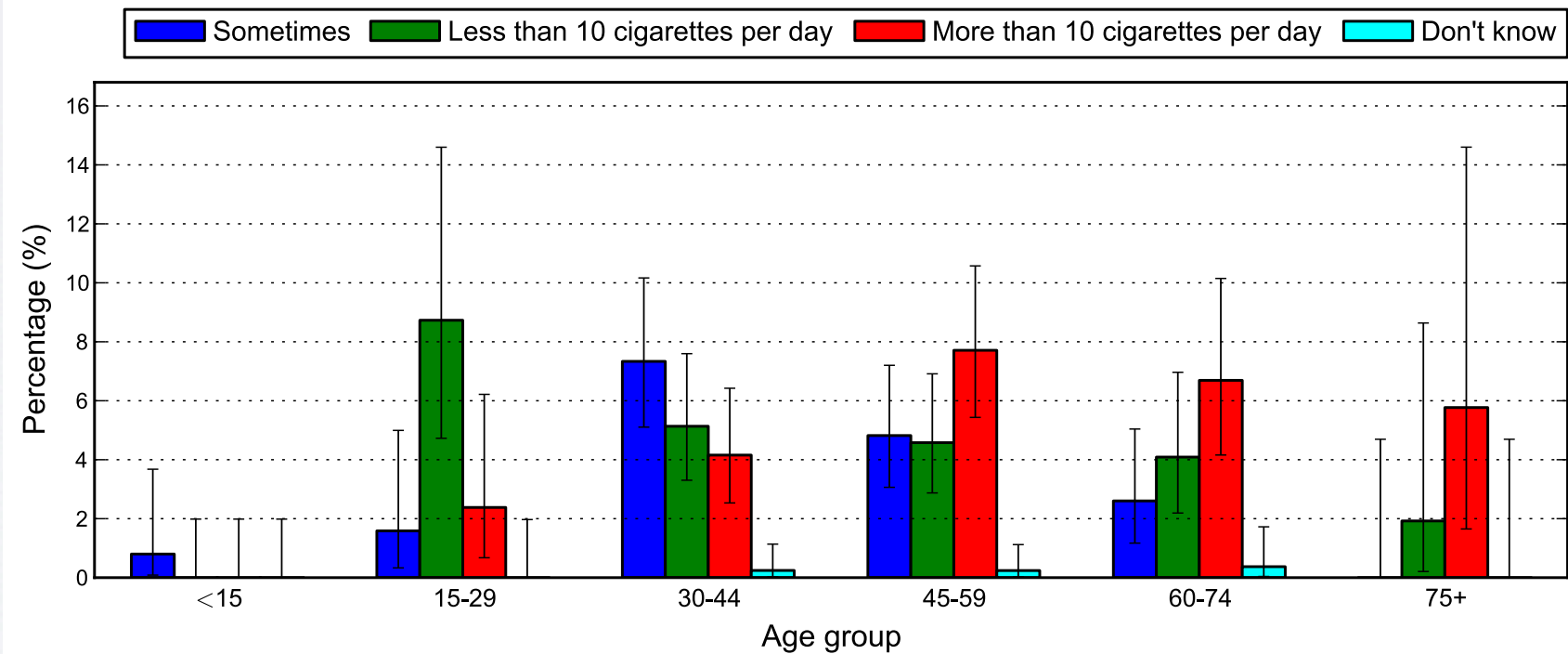
% of users who reported allergies



<http://www.influenzanet.eu>

11 May 2015

% of users who reported to be smokers

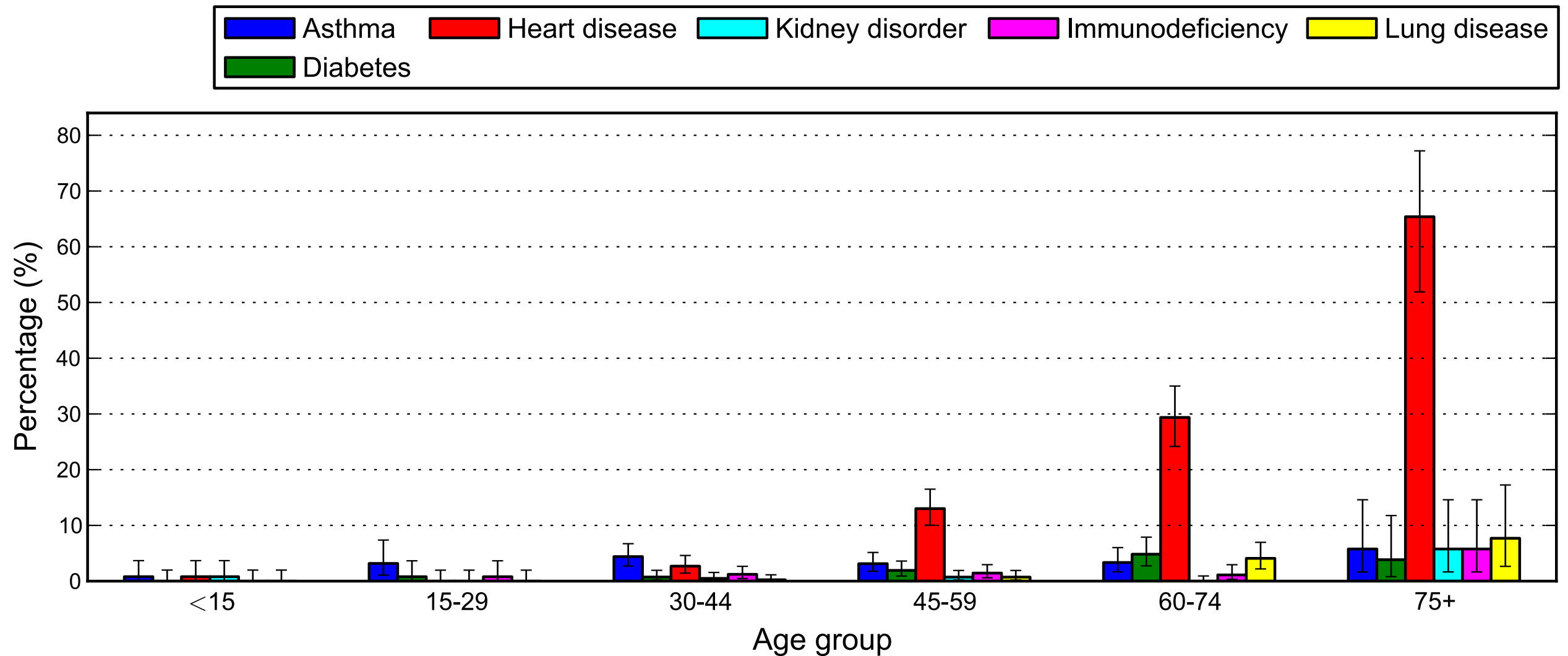


<http://www.influenzanet.eu>

11 May 2015

HEALTH
INDICATORS

% of users who reported chronic diseases

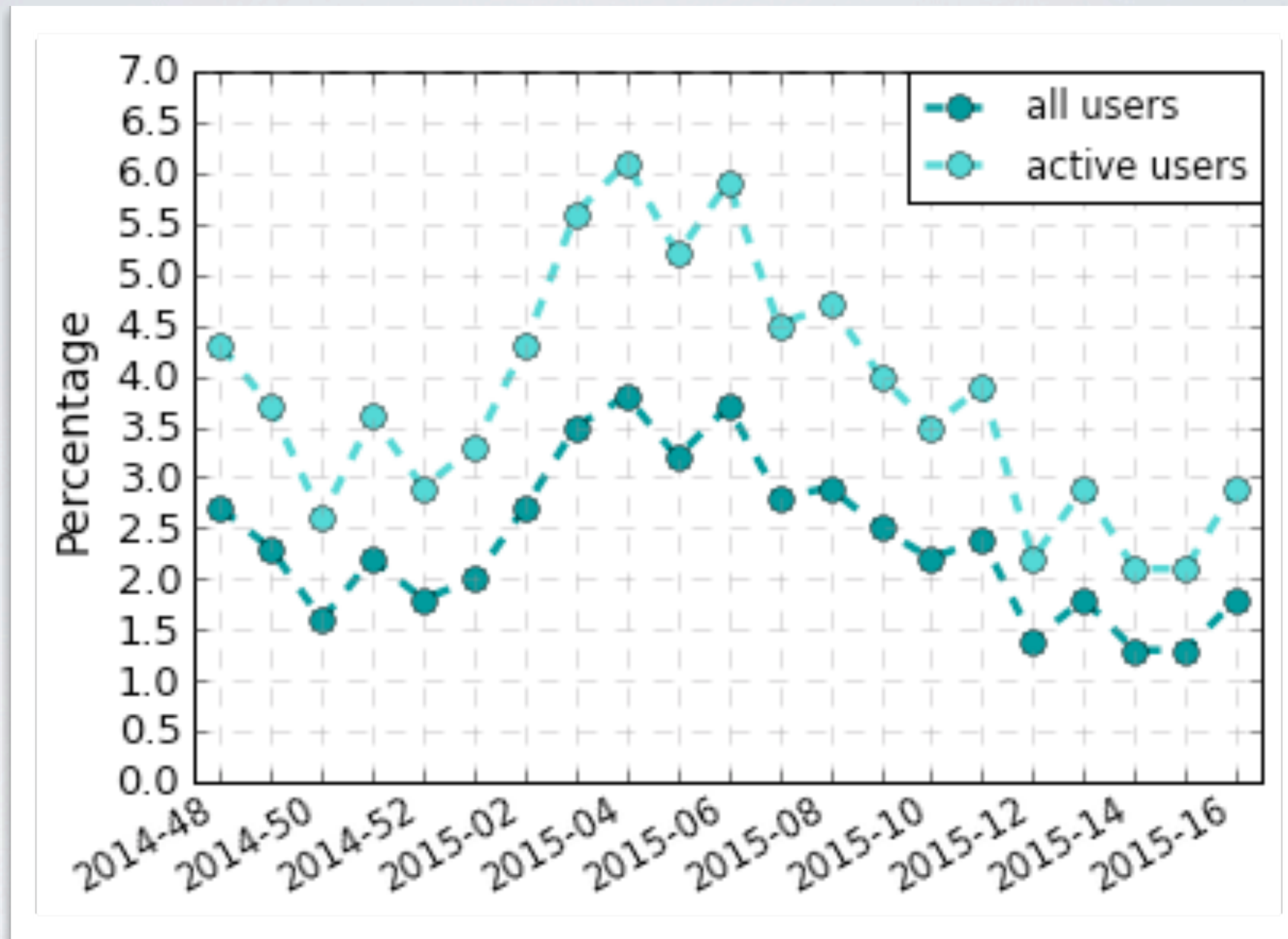


<http://www.influenzanet.eu>

11 May 2015

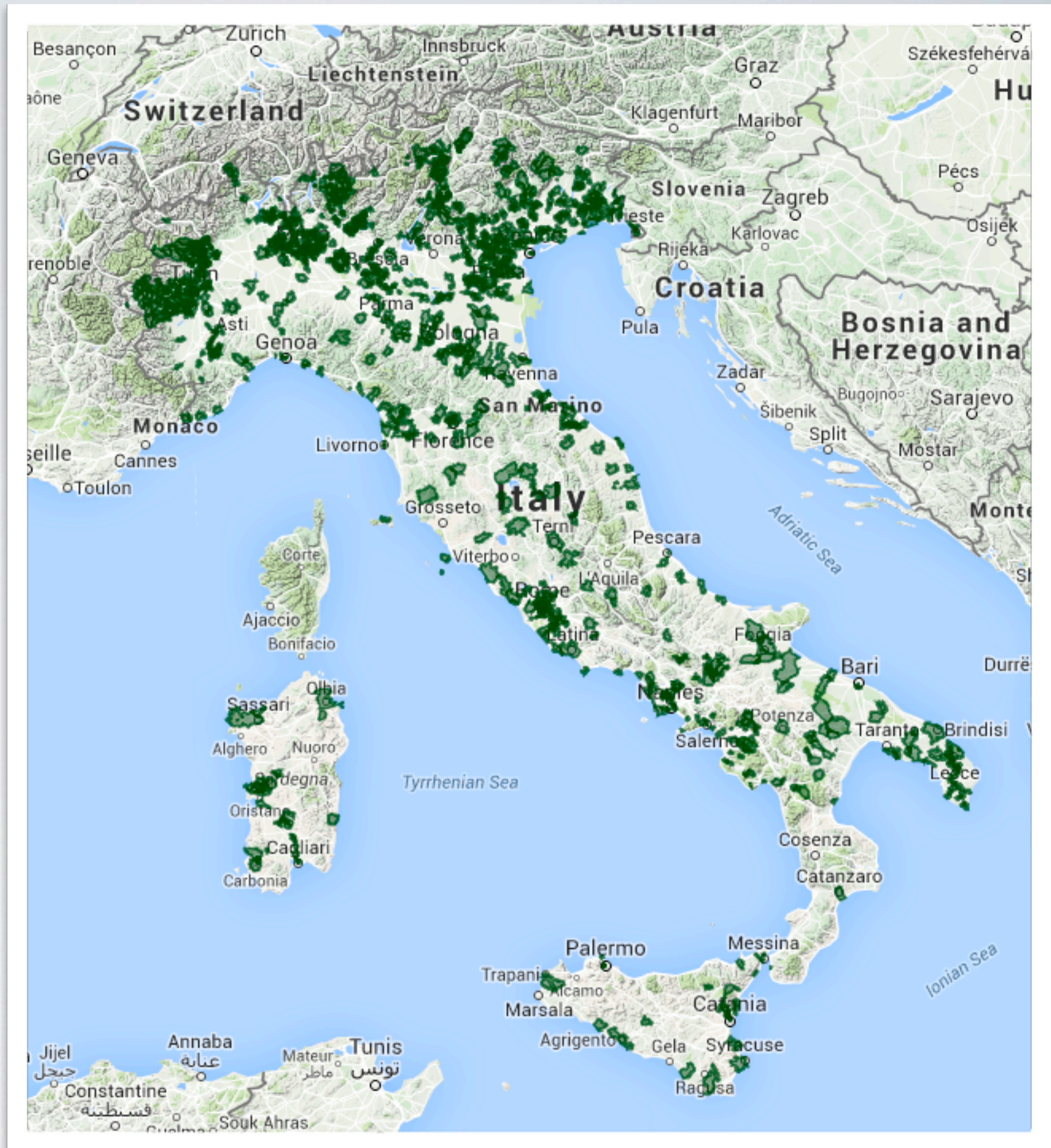
HEALTH INDICATORS

% of users who visited or contacted a medical service

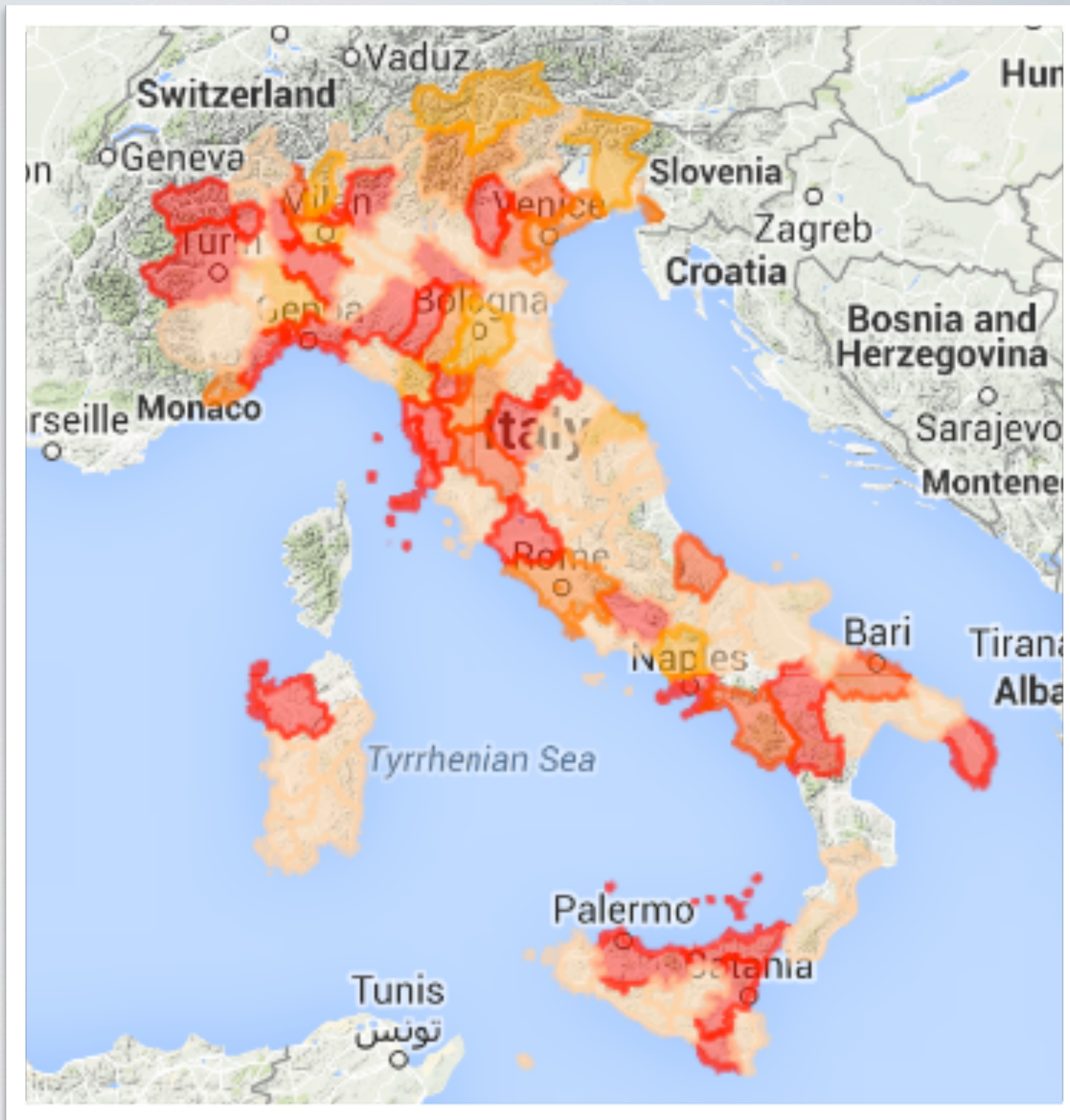


HEALTHCARE-SEEKING BEHAVIOR

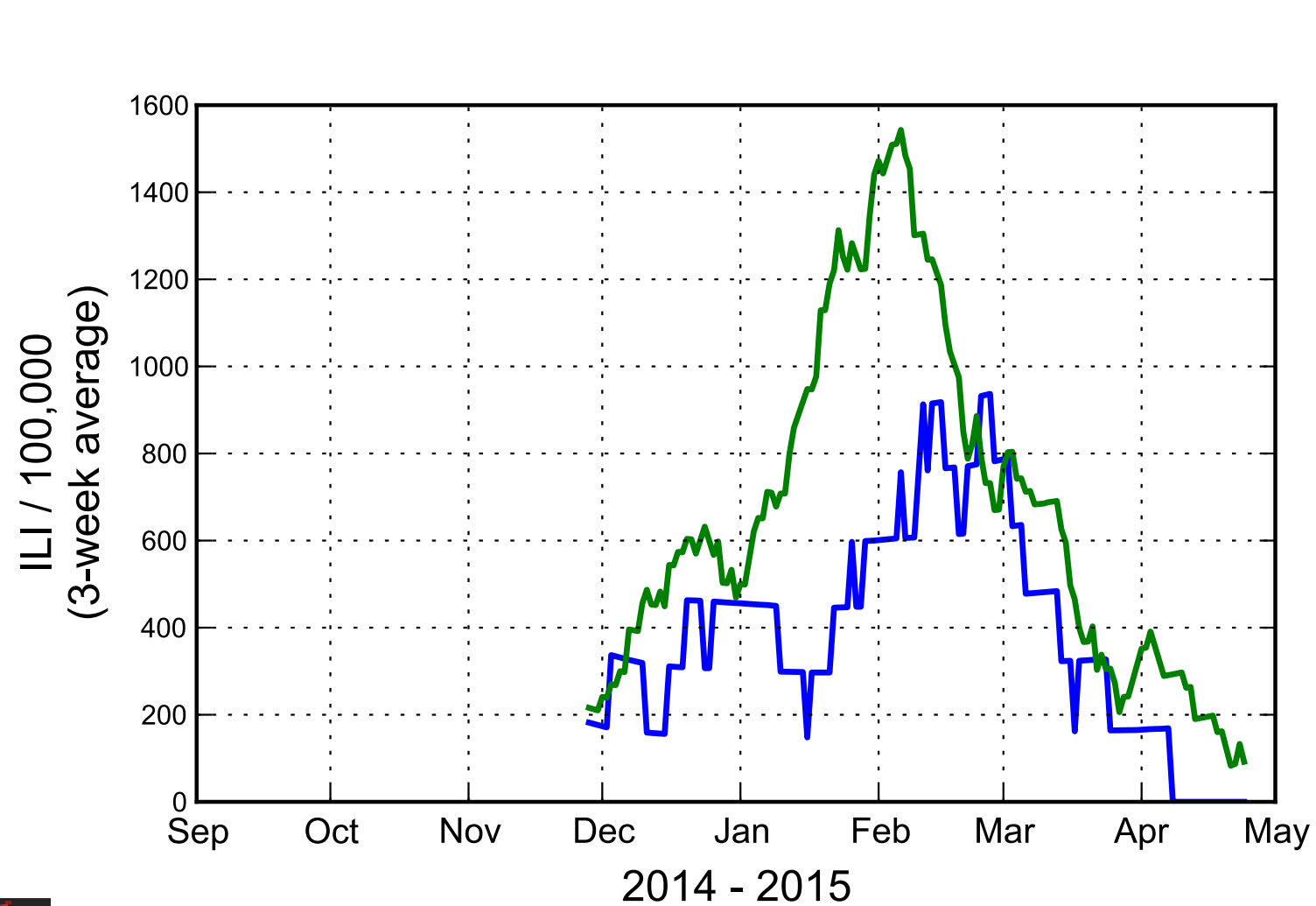
GEOGRAPHY



GEOGRAPHY

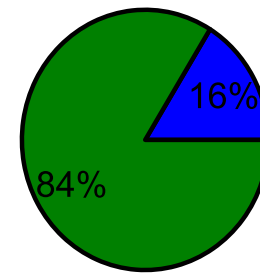


ILI activity by vaccination status

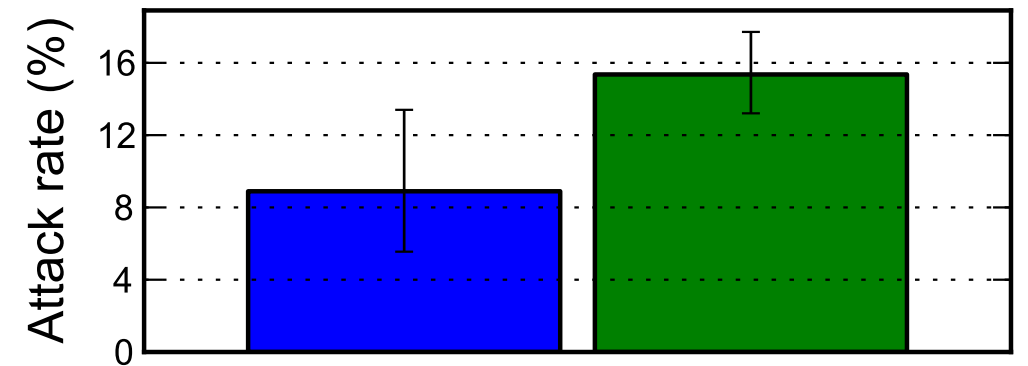
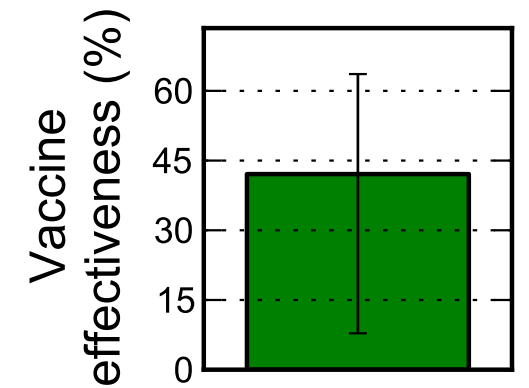


<http://www.influenzanet.eu>

Vaccinated Not vaccinated

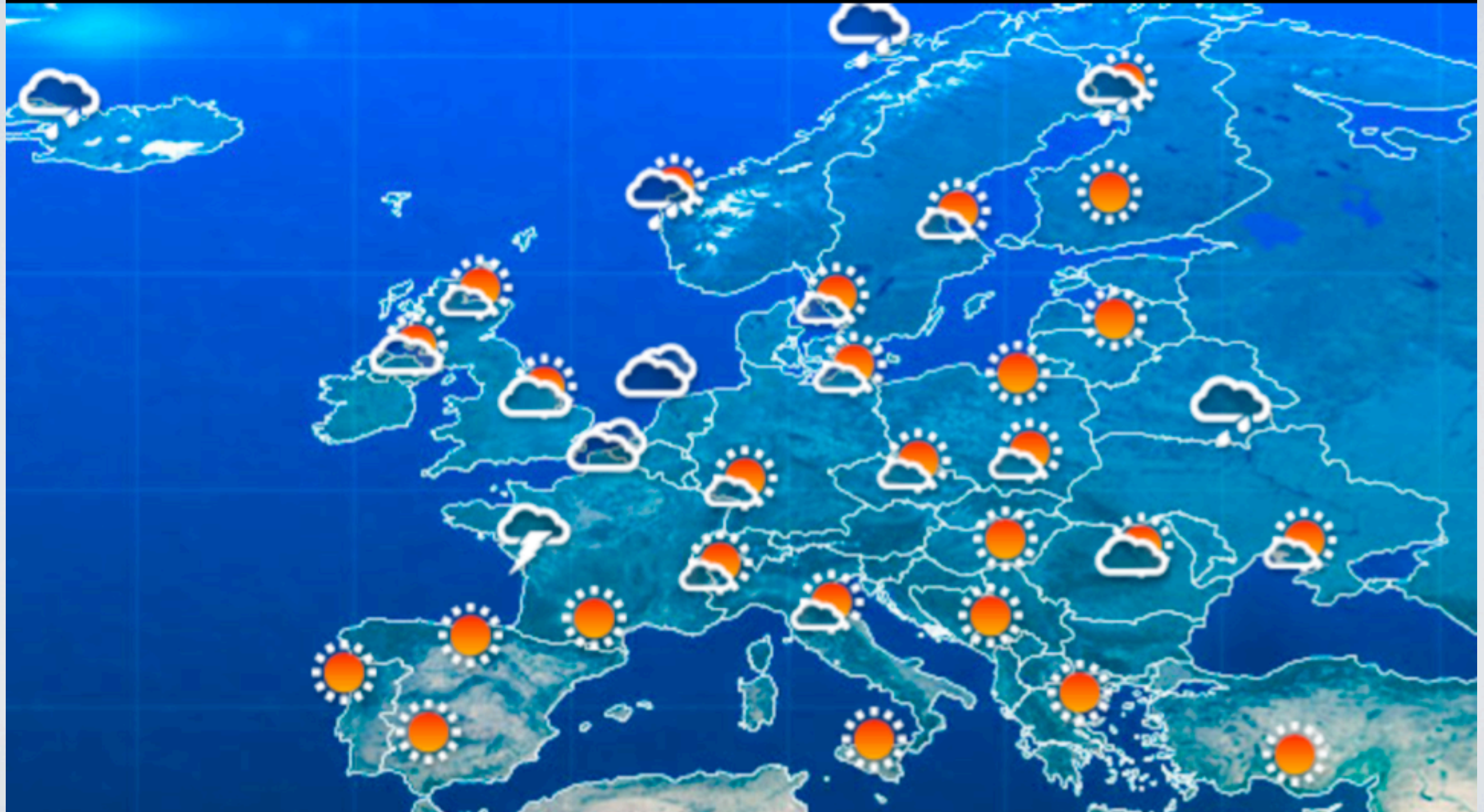


Participants



11 May 2015

From the weather forecasts...



...to the flu forecasts



fluoutlook.org

FLUOUTLOOK
EPIDEMIC FORECASTING OBSERVATORY



INSTITUTE
FOR SCIENTIFIC INTERCHANGE
FOUNDATION



Northeastern University

Forecast Map

Flu Forecasts

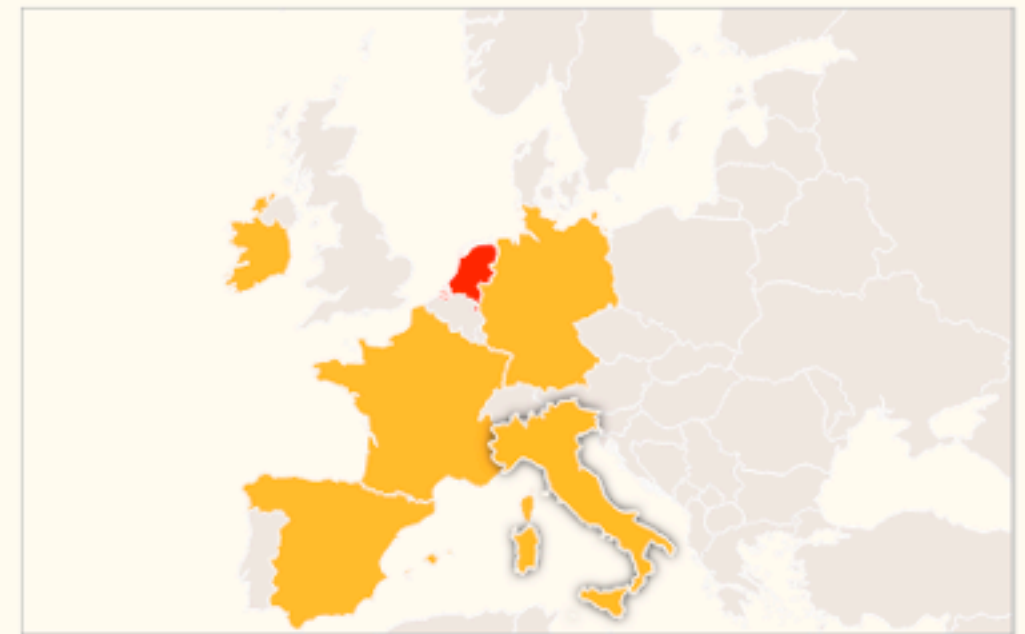
About

Methodology

Team

Fluoutlook is a web platform for the exploration of influenza forecasts

It provides a visual interface to numerical forecasts of the current influenza season in North America and Europe through maps and charts. Activity data and forecasts are updated weekly, based on the reports of the official influenza surveillance systems in each country. [Tell me more.](#)



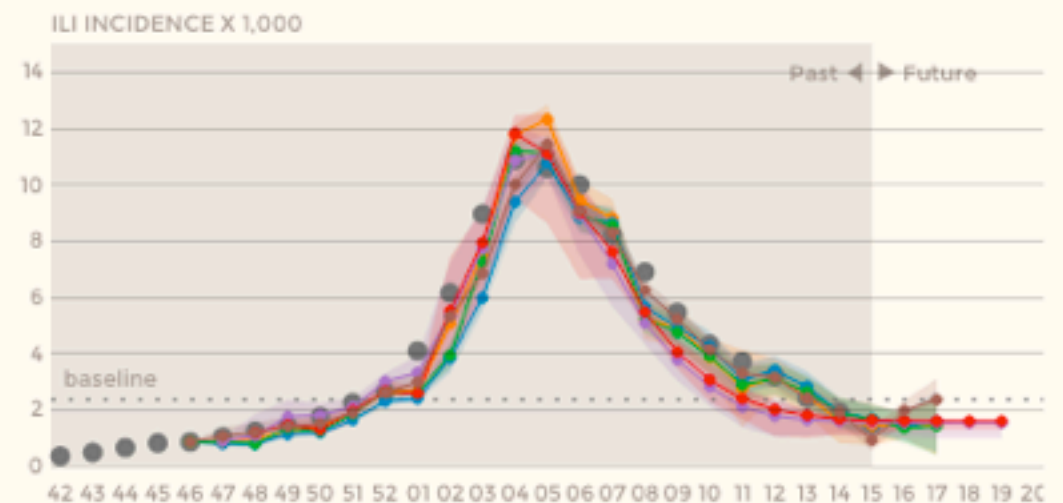
ITALY

LEVEL:
BELOW BASELINE

TREND:
—

LAST UPDATED:
12 Apr 2015, week 15

**EXPLORE FORECASTS
FOR ITALY**



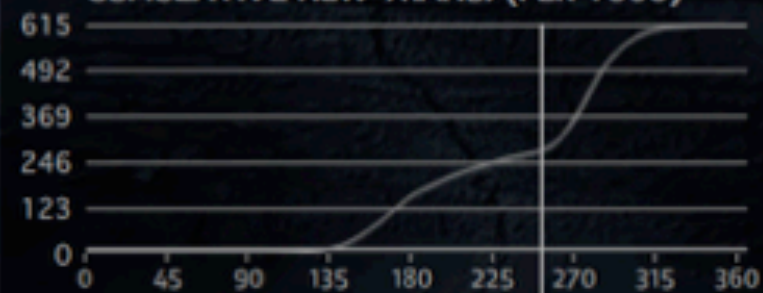
GLOBAL



NEW TRANSITIONS (PER 1000)/DAY



CUMULATIVE NEW TRANS. (PER 1000)



DIJON



DIJ (675). Pop: 1.6 mil.

Country: France

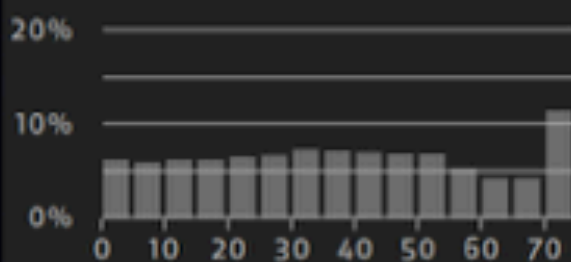
Hospital beds: 73 (per 10,000)

Physicians: 34 (per 10,000)

NEW (per 1000): 5.614

CUM NEW (per 1000): 37.565

Age structure



GLEAMviz.org



NEW INDIVIDUALS 10

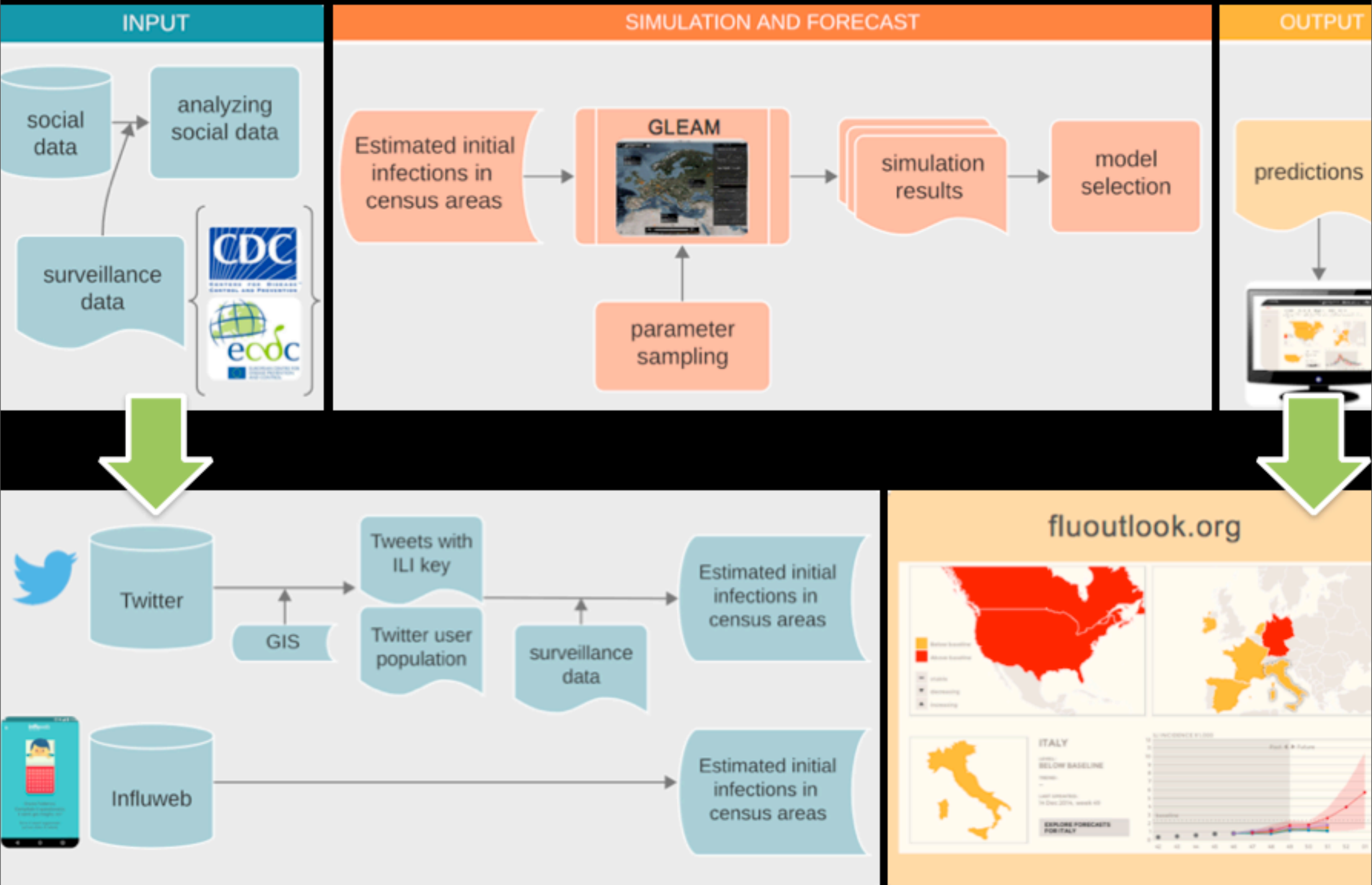
100

1000

10000

DAY 251
16/11/2015

FluOutlook architecture



ITALY, 2014-49



Forecast Map

Flu Forecasts

About

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FLU FORECASTS

Country:

ITALY

Season:

2014-2015

Surveillance data:

☒ ECDC

Forecasting model:

☒ AR

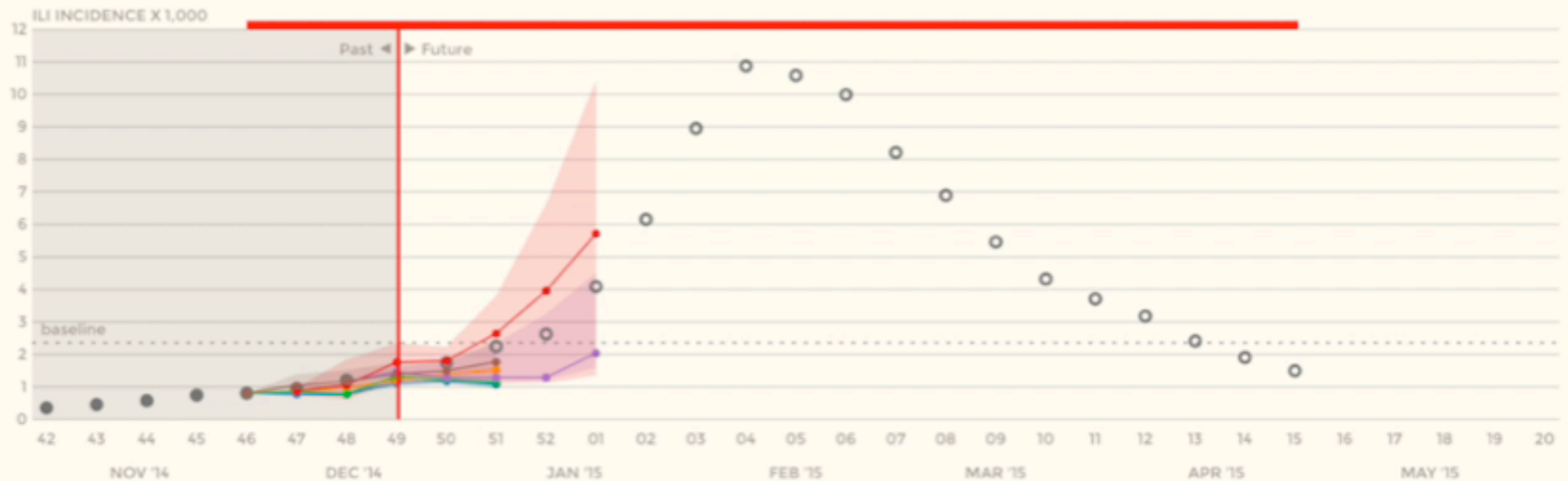
☒ ARIMA

☒ ARMA

☒ GLEAM (Influenzanet)

☒ GLEAM (Twitter)

☒ SARIMA



	ARIMA	ARMA	GLEAM (INFLUENZANET)	GLEAM (TWITTER)	SARIMA	AR
PEAK WEEK RANGE	—	—	52 - 12	01 - 08	—	—
PEAK INCIDENCE RANGE	—	—	1.96 - 14.56	3.35 - 14.95	—	—

fluoutlook.org

FLUOUTLOOK
EPIDEMIC FORECASTING OBSERVATORY



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FLU FORECASTS

Country:

ITALY

Season:

2014-2015

Surveillance data:

☒ ECDC

Forecasting model:

☐ AR

☒ ARIMA

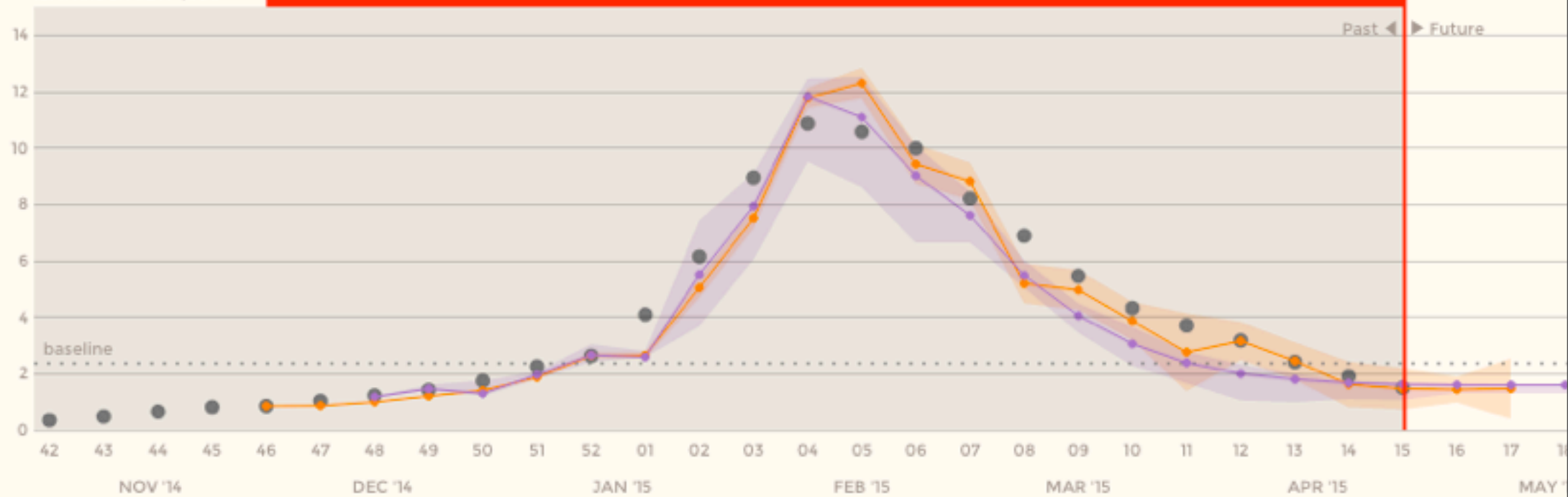
☐ ARMA

☒ GLEAM (Influenzanet)

☐ GLEAM (Twitter)

☐ SAR

ILI INCIDENCE X 1,000



	ARIMA	GLEAM (INFLUENZANET)
PEAK WEEK RANGE	—	05 - 05
PEAK INCIDENCE RANGE	—	11.10 - 11.41

Note: Weeks are numbered according to the ISO-8601 calendar used in Europe. Data from US and Canada are shifted to this standard

Share

Since 2012, Influwed is part of the integrated surveillance activity carried out by the ISS and reported each week during the influenza season on the Flunews bulletin



GOING GLOBAL: IWOPS



A world map with a blue gradient background. The continents are outlined in a darker blue. The Influenzanet logo, consisting of a red stylized 'i' and the word 'Influenzanet' in white, is centered over the Atlantic Ocean.

 Influenzanet

GOING GLOBAL: IWOPS





GOING GLOBAL: IWOPS





GOING GLOBAL: IWOPS



KEY REFS 2009-2014

- Cantarelli P et al The representativeness of a European multi-center network for influenza-like-illness participatory surveillance (accepted on BMC Public Health)
- Adler AJ, Eames KT, Funk S, Edmunds WJ. Incidence and risk factors for influenza-like-illness in the UK: online surveillance using Flusurvey.BMC Infect Dis. 2014 May 1;14(1):232.
- Bajardi P et al. Determinants of follow-up participation in the internet- based European Influenza surveillance platform Influenzanet. J Med Internet Res. 2014 Mar 10;16(3):e78
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- Edmunds WJ & Funk S. Using the internet to estimate influenza vaccine effectiveness. Expert Rev Vaccines. 2012 Sep;11(9):1027-9.
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influenzaneu.eu

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Gabriela Gomes (PT)

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Hanna Merk (SE)

Charlotte Kelso (DK)

Jim Duggan (IE)



Thank you!

daniela.paolotti@isi.it, @danielapaolotti



Daniela Paolotti

**Focus sulla sorveglianza integrata e la prevenzione
dell'influenza in Italia**

15 Maggio, 2015, Istituto Superiore di Sanità, Roma

