

What is I-MOVE?

Influenza vaccine

- **Reformulated each year**
- **Recommended** in all Member States of the European Union / European Economic Area (EU/EEA) to
 - Groups at risk of complications
 - Certain professional categories

Until 2007: no routine evaluation of influenza vaccine effectiveness (IVE) in EU/EEA.

In 2007, ECDC developed a network composed of 18 European Public Health Institutes and EpiConcept, the coordinating hub, to **monitor seasonal and pandemic IVE in the EU/EEA: I-MOVE (Influenza Monitoring Vaccine Effectiveness in Europe)**

I-MOVE phases

Preparation phase 2007/8

- Literature review
- Surveys of EU MS
- Expert consultations

- Study designs identified
- Generic protocols developed available on ECDC website

Implementation phase 2008/9-2012/13: Multicentre case control (MCC), cohort using primary care databases and screening method studies

2008/9

- MCC in elderly (5 studies)
- 2 cohort studies
- 2 screening method studies

2009/10

- MCC all ages (7 studies)
- 4 cohort studies
- 3 screening method studies

2010/11

- MCC all ages (8 studies)
- 3 cohort studies
- 5 screening method studies

2011/12

- MCC all ages (8 studies)
- 3 cohort studies
- 5 screening method studies

2012/13

- MCC all ages (6 studies)
- 3 cohort studies
- 3 screening method studies

Public health institutes contributing to I-MOVE

Multicentre case control study

- Denmark (2008/9 only)
- France
- Hungary
- Germany (from 2012/13)
- Ireland
- Italy
- Poland
- Portugal
- Romania
- Spain

Cohort studies with nested case control

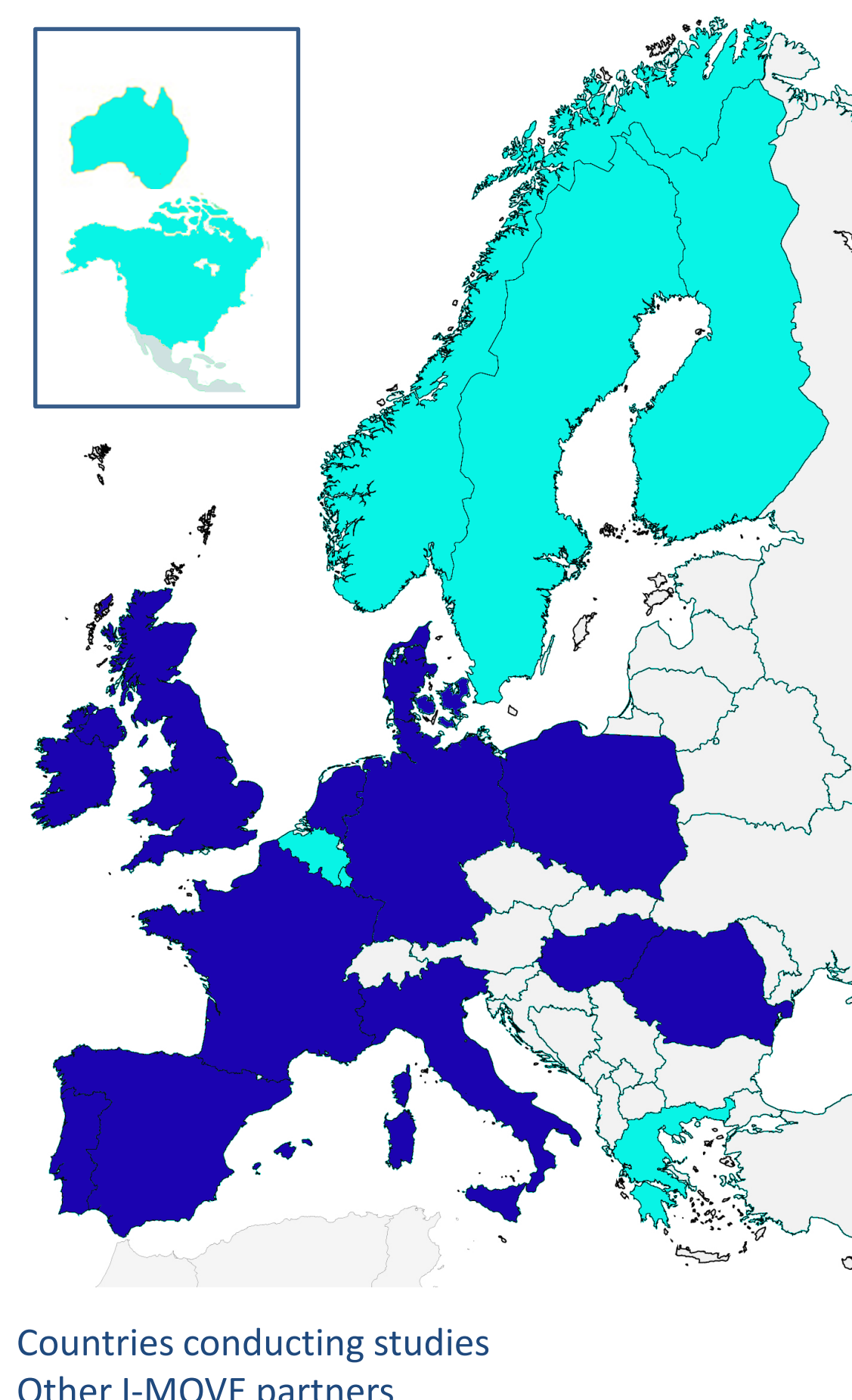
- England & Wales, UK
- Navarra, Spain
- Scotland, UK
- The Netherlands (2009/10 only)

Screening method studies

- England & Wales, UK
- Italy
- Portugal
- Scotland, UK
- Spain

Other partner institutes

- ECDC
- EpiConcept (coordination)
- Belgium
- Finland
- Greece
- The Netherlands
- Norway
- Sweden
- Australia
- USA
- Canada



Key methods

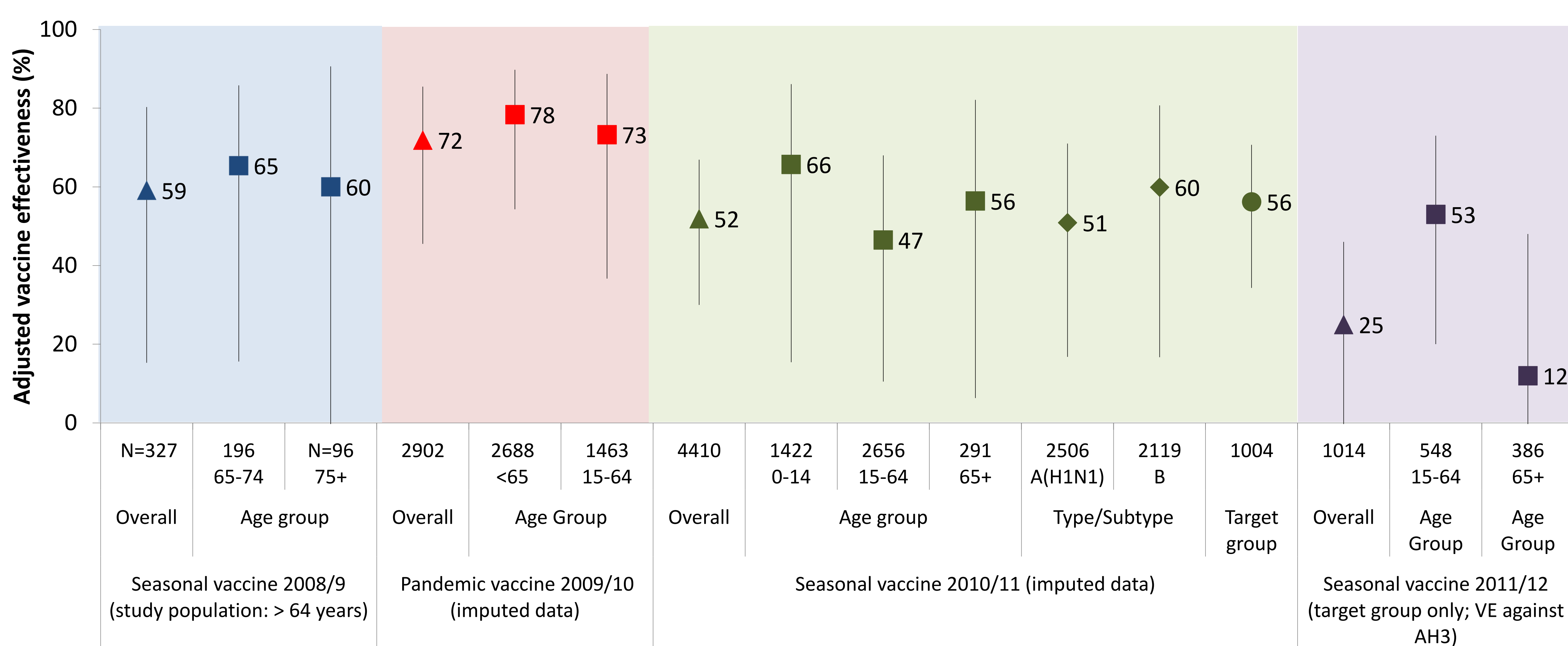
Multicentre case control studies

- Based on influenza sentinel networks at GP level
- Systematic selection of influenza-like illness (ILI) patients to be swabbed (all study sites since 2010-11)
- Cases: ILI patients positive for influenza
- Controls: ILI patients negative for influenza
- Common covariates to adjust for positive and negative confounding
- Logistic regression including all potential confounding factors

Cohort studies

- Large electronic GP databases
- All ages
- Outcomes: ILI, all respiratory illness, hospitalisations, mortality, lab-confirmed influenza
- Adjustment for positive and negative confounding
- Poisson/Time dependent regression; Cox regression (person-time analysis)

Adjusted influenza vaccine effectiveness estimates 2008/9-2011/12 (multicentre case control study)



2008/9: Adjusted for previous season influenza vaccination, at least one chronic disease, sex, at least one hospitalisation in previous 12 months, current smoker, age group, functional status

2009/10: Adjusted for 2008/9 seasonal and pandemic influenza vaccination, at least one chronic disease, sex, at least one hospitalisation for chronic disease in previous 12 months, current smoker, age group, practitioner visits in previous 12 months, week of symptom onset

2010/11: Adjusted for influenza vaccination in previous 2 seasons, at least one chronic disease, sex, at least one hospitalisation for chronic disease in previous 12 months, current smoker, age group, practitioner visits in previous 12 months, month of symptom onset

2011/12: Adjusted for at least one chronic disease, sex, at least one hospitalisation for chronic disease in previous 12 months, age group, practitioner visits in previous 12 months, month of symptom onset

Discussion

I-MOVE: a consolidated network for measuring IVE

- Estimates from **several countries, several designs**
- **Laboratory confirmed outcome**
- **Control for** positive / negative **confounders**
- **Early estimates** in seasons or pandemics
- Influenza VE **by age group, subtype, target group for vaccination**
- Contribution to **strengthen influenza surveillance in the EU**
 - Use of ILI EU case definition
 - Systematic sampling – based on existing sentinel networks

Excellent scientific exchanges

- Within Europe and with international experts (Canada, US, Australia)
- Annual scientific meeting
- Workshops

Communication

- 35 articles published
- I-MOVE results included in meta-analysis (*Lancet Infect Dis.* 2012 Jan;12(1))
- Since 2009/10, preliminary results communicated to EMA, WHO, ECDC
- Dedicated website: <https://sites.google.com/site/epiflu/Home>