Surveillance in Europe – Experience and Lessons from the Pandemic in Europe

Prof Angus Nicoll CBE European Centre for Disease Prevention and Control

Ministry of Health, China - International Scientific Symposium on Influenza A(H1N1) Pandemic Preparedness and Response August 21st 2009, Beijing, China

Working Arm in Arm with WHO and the European Commission on Pandemic Preparedness since 2005

Plan of Talk

- *It could be a lot worse*
- Epidemiological findings to date in Europe
- How surveillance had to adapt
- Importance of a rolling forward looking risk assessment
- Containment vs. Mitigation – a mention
- Schools – a mention
- Importance of the health care sector
- Preparing for a tough autumn and winter
- Preparing for the vaccine – a mention

http://ecdc.europa.eu/en/healthtopics/Pages/Influenza_A(H1N1)_Outbreak.aspx

The situation could be a lot worse (Situation circa summer 2009)

- A pandemic strain emerging in the Americas.
- Immediate virus sharing so rapid diagnostic and vaccines.
- Pandemic (H1N1) currently not that pathogenic.
- Some seeming residual immunity in a major large risk group (older people).
- No known pathogenicity markers.
- Initially susceptible to oseltamivir.
- Good data and information coming out of North America.
- Arriving in Europe in the summer.
- Mild presentation in most.

A pandemic emerging in less prepared countries

Delayed virus sharing

Based on a more pathogenic strain, e.g. A(H5N1)

No residual immunity

Heightened pathogenicity

Inbuilt antiviral resistance

Minimal data until transmission reached Europe

Arriving in the late autumn or winter

Severe presentation immediately

Contrast with what might have happened — and might still happen!

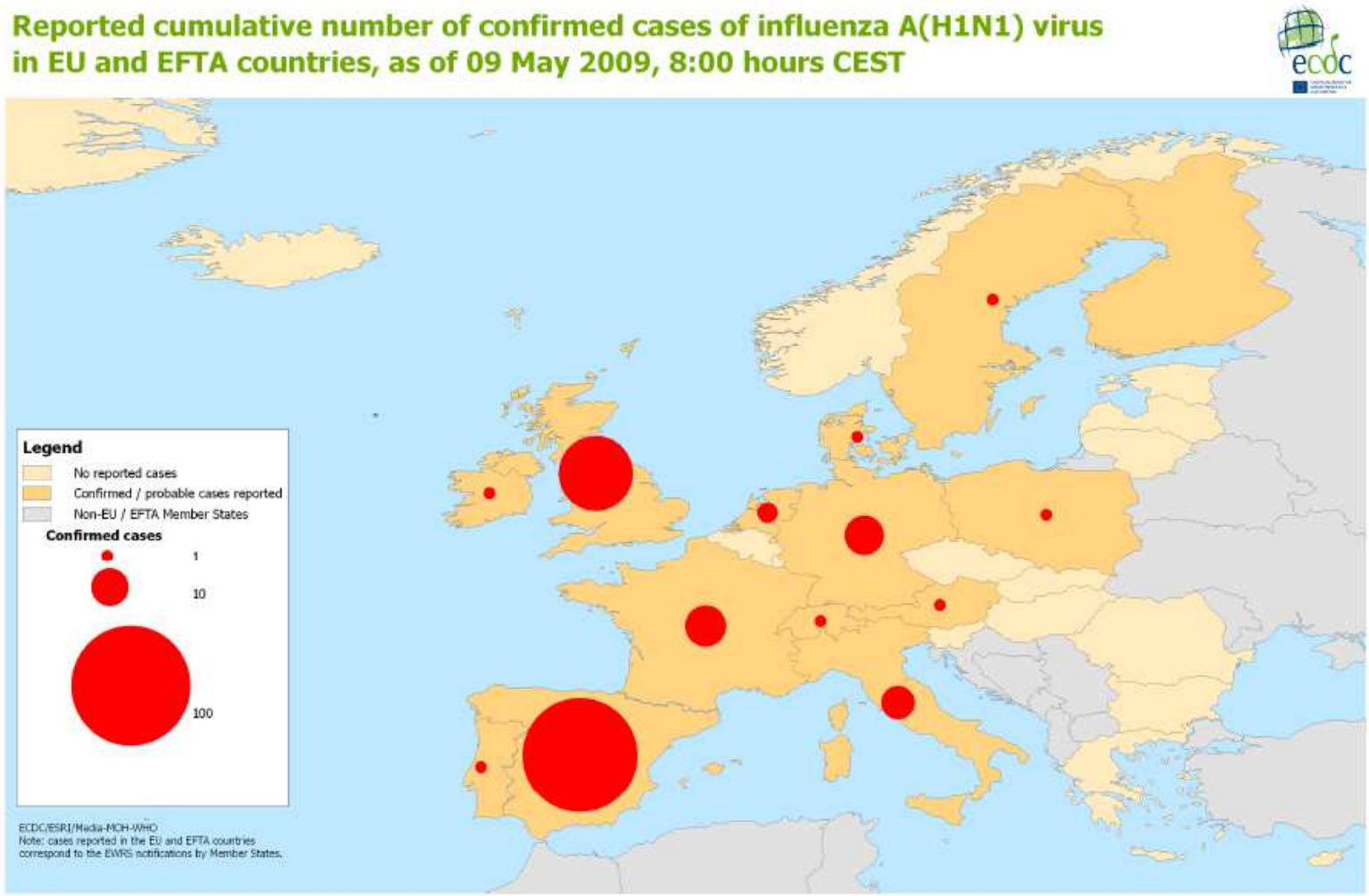
The story from surveillance so far for Europe

Remember this is happening in the late spring and summer when influenza does not transmit well

- Initial imported cases from the Americas
- Then transmission in all European countries
- But very heterogeneous distribution across and within countries
- Schools were important for detecting transmission through outbreaks
- Most people experience only a mild disease
- Mostly young cases cf. seasonal influenza
- But cases going to and staying in hospital are older
- Cases getting very sick and dying mostly have underlying disease
- Minimal antiviral resistance so far despite a lot of use
- The worst is yet to come for Europe

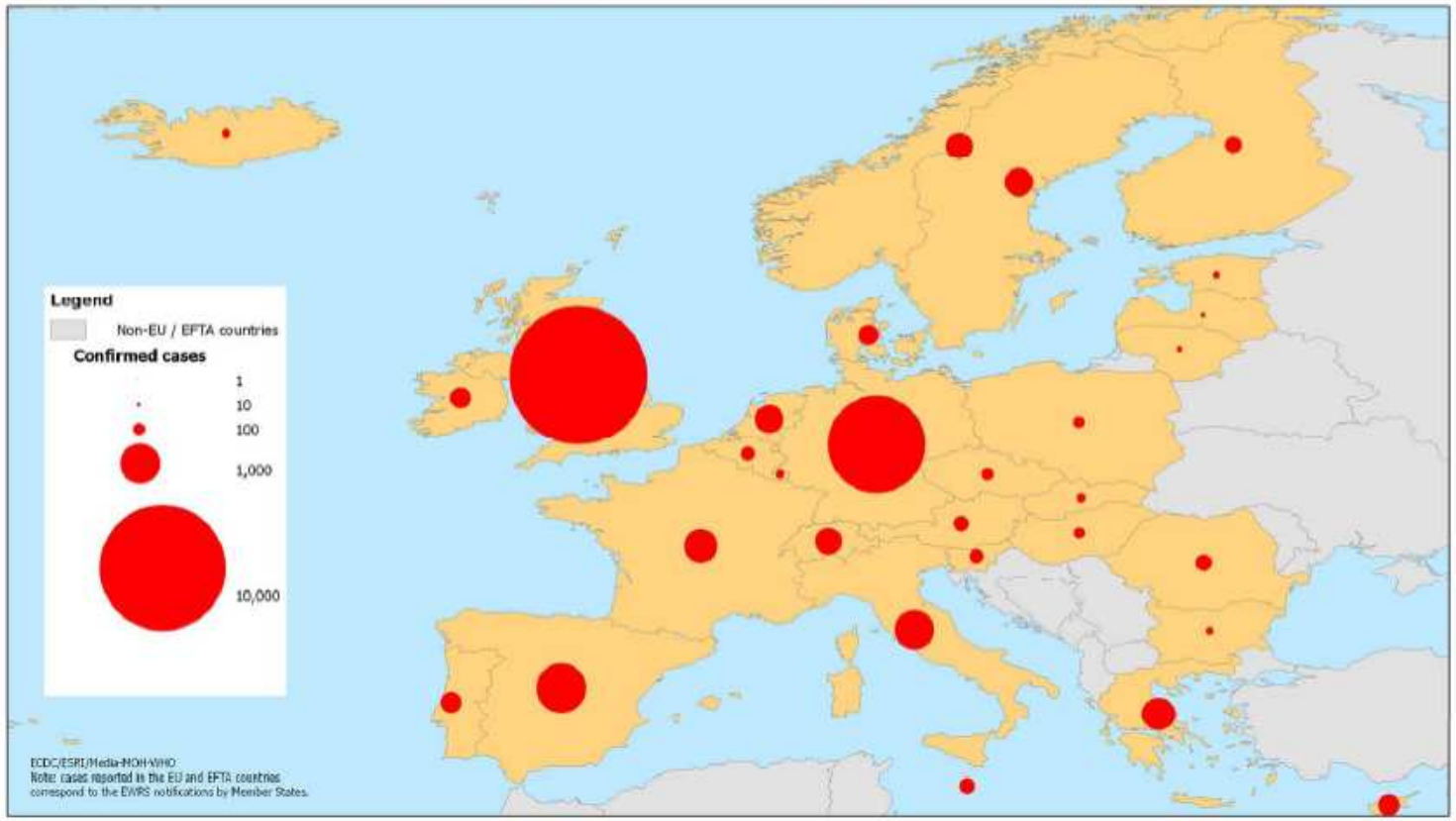
Some Surveillance Outputs – which illustrate some errors and improvements that are needed

When we were counting cases – probably a mistake but unavoidable – early May



By Late July ---

Reported cumulative number of confirmed cases of influenza A(H1N1)v in EU and EFTA countries, as of 31 July 2009, 16:00 hours CEST



In August a switch to deaths – but will underestimate the attributable excess deaths?

Reported cumulative number of confirmed fatal cases of influenza A(H1N1)v in EU and EFTA countries, as of 18 August 2009, 16:00 hours CEST

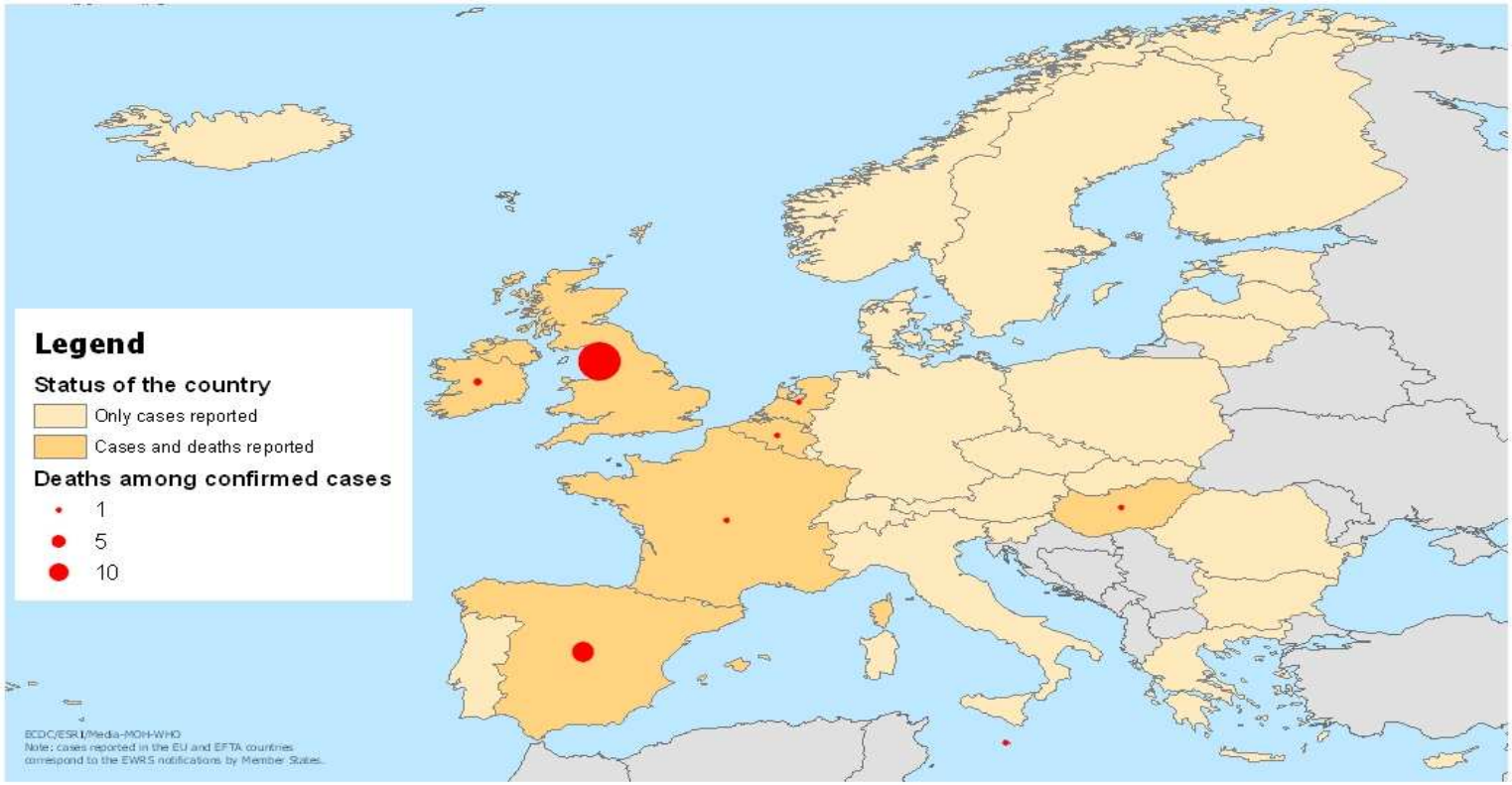
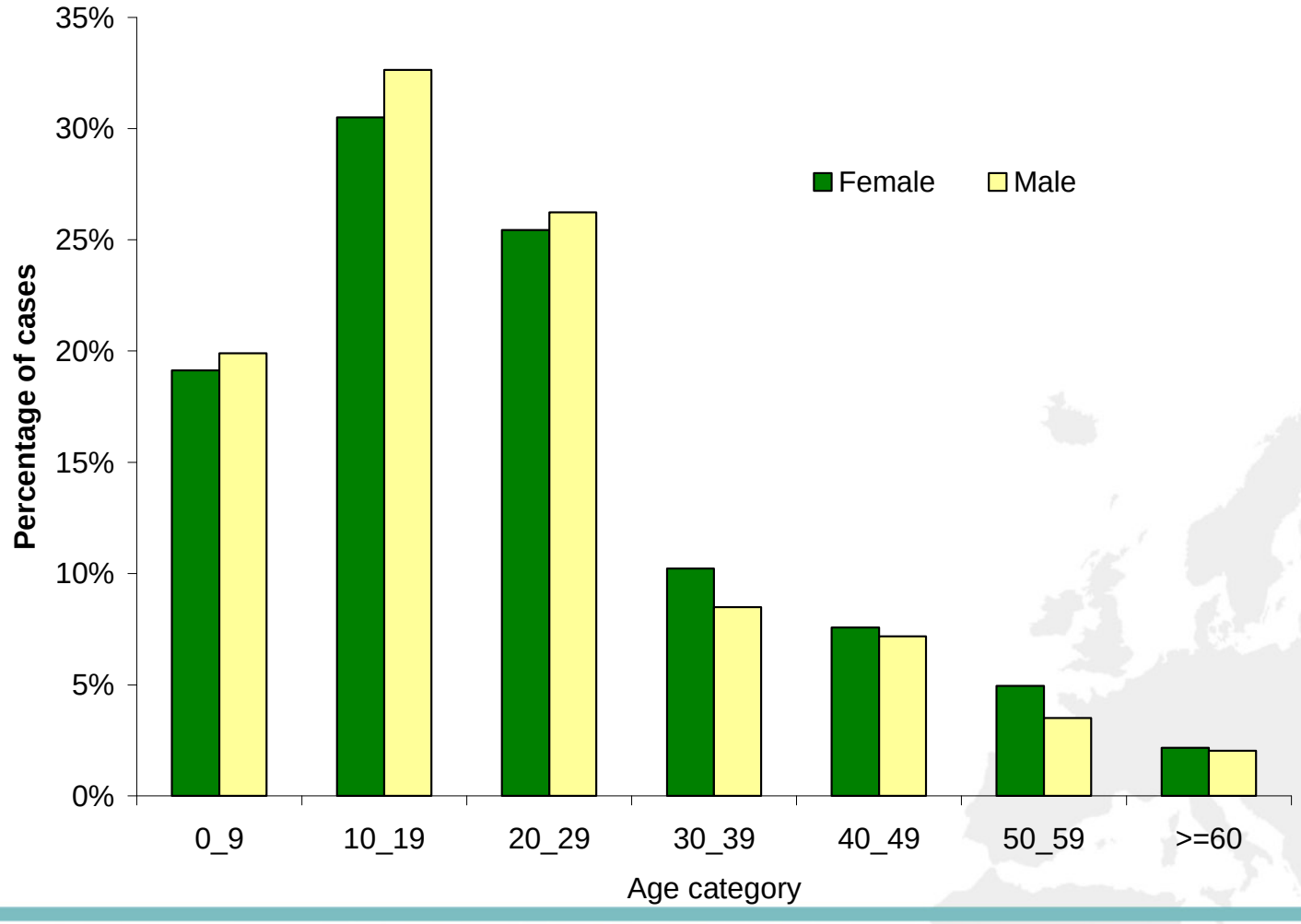


Table 1: Reported new confirmed cases and cumulative number of influenza A(H1N1)v and cumulative deaths among confirmed cases by country as of 19 August 2009, 16:00 hours (CEST) in the EU and EFTA countries

Country	Confirmed cases reported in the last 24h	Cumulative number of confirmed cases	Deaths among confirmed cases[a]
Austria	-	222	-
Belgium	-	126	1
Bulgaria	6	57	-
Cyprus	-	297	-
Czech Republic	-	209	-
Denmark	-	444	-
Estonia	1	57	-
Finland	4	204	-
France [b]	-	1125	1
Germany	337	12830	-
Greece	-	1424	-
Hungary	2	145	1
Iceland	-	135	-
Ireland	-	574	2
Italy	-	1238	-
Latvia	-	23	-
Liechtenstein	-	5	-
Lithuania	-	40	-
Luxemburg	-	118	-
Malta	-	231	1
Netherlands [c]	-	1473	1
Norway	-	868	-
Poland	2	152	-
Portugal	257	1634	-
Romania	7	269	-
Slovakia	1	99	-
Slovenia	1	203	-
Spain	-	1538	12
Sweden	70	672	-
Switzerland	41	841	-
United Kingdom [d]	-	12903	44
Total	**729**	**40156**	**63**

Note: cases reported in the EU and EFTA countries correspond to the EWRS notifications by Member States or Ministry of Health websites. *Countries shaded with gray are not recommending laboratory tests for all suspect cases, therefore comparisons in time or between these countries should not be made at present.*

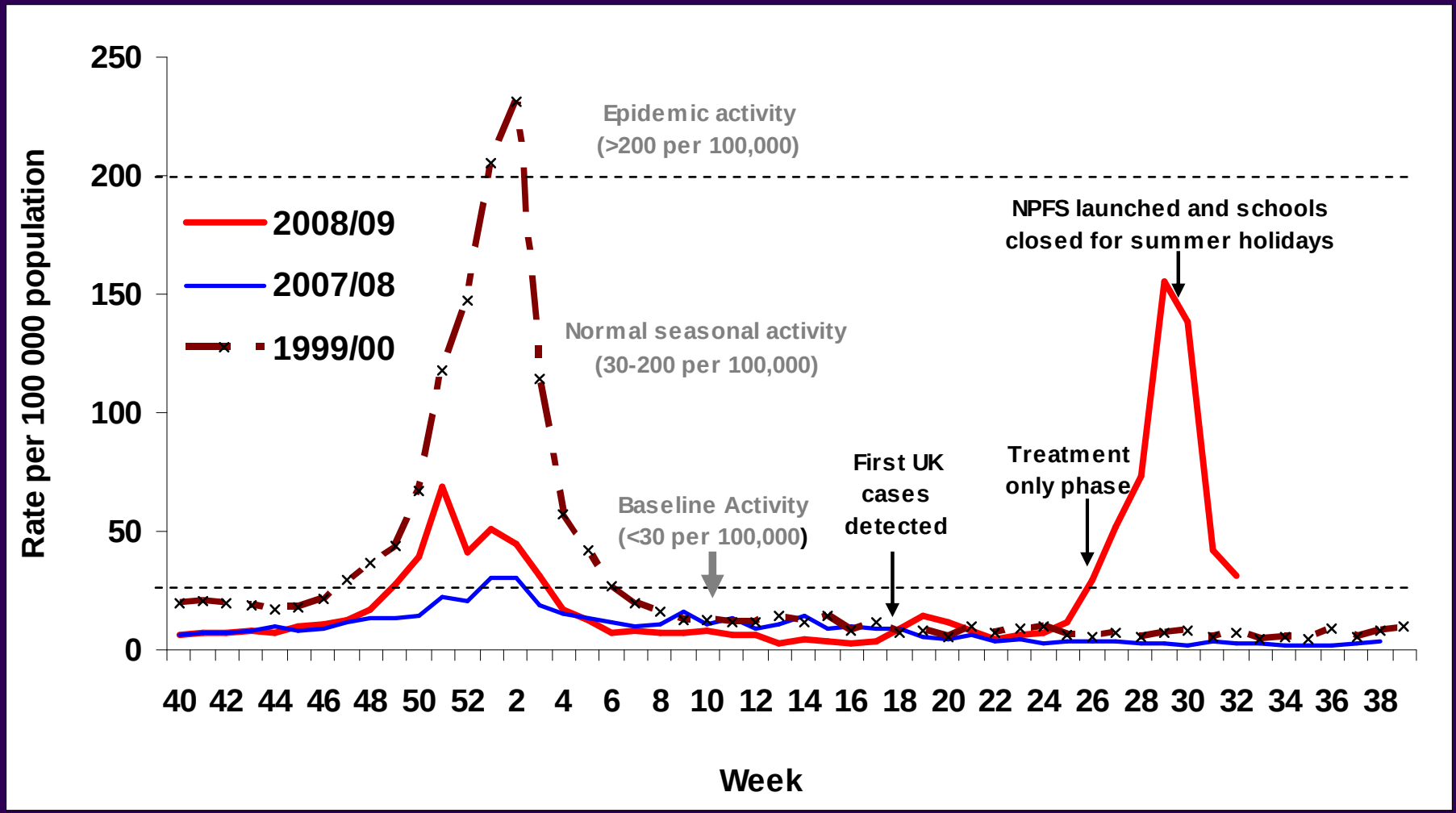
Age distribution of A(H1N1)v cases by gender (n=8541), 28 EU/EEA countries, 19 April- 3 August 2009



Data from the most affected country in Europe – UK

– thanks to the Department of Health, the Health Protection Agency, the NHS and the devolved Administrations

RCGP (England and Wales) ILI consultation rate per 100,000 2008/09 and recent seasons.



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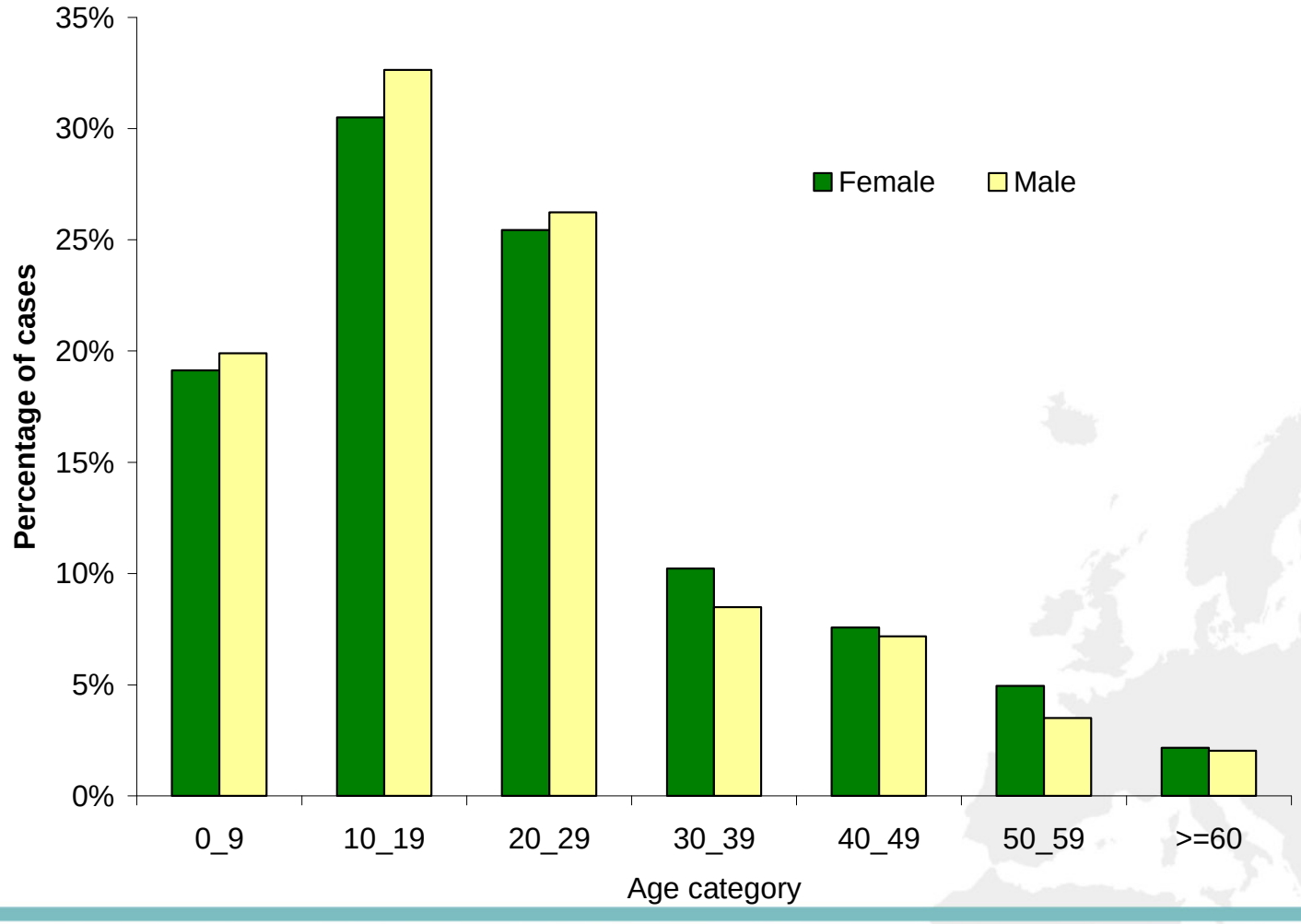


Switching to more conventional influenza surveillance and building on what we have in Europe

Surveillance Planning Meeting with WHO and input from other experienced countries – July 14-15th

http://ecdc.europa.eu/en/publications/Publications/0908_MER_Surveillance_and_Studies_in_a_Pandemic_Meeting_Report.pdf

Building on existing surveillance and studies

In all countries:

Relying on sentinel surveillance

Relying on virological surveillance

Case reporting of severe cases and deaths (SARI)

In some countries:

Hospital surveillance and monitoring Important

Monitoring mortality in real time

Special studies

linking modelling, surveillance and decision making

Preparing for estimating effectiveness of vaccines

Preparing for surveillance for adverse effects of vaccine & antivirals

http://ecdc.europa.eu/en/publications/Publications/0908_MER_Surveillance_and_Studies_in_a_Pandemic_Meeting_Report.pdf

Preparing Europe for the Autumn and Winter

A Rolling Risk Assessment

http://ecdc.europa.eu/en/healthtopics/Documents/0907_Influenza_AH1N1_Risk_Assessment.pdf

Leading to Revised Planning projections

http://ecdc.europa.eu/en/healthtopics/Documents/0908_InfluenzaA_H1N1_Planning_Assumptions_for_the_First_Wave_of_Pandemic_A(H1N1)_2009_in_Europe.pdf

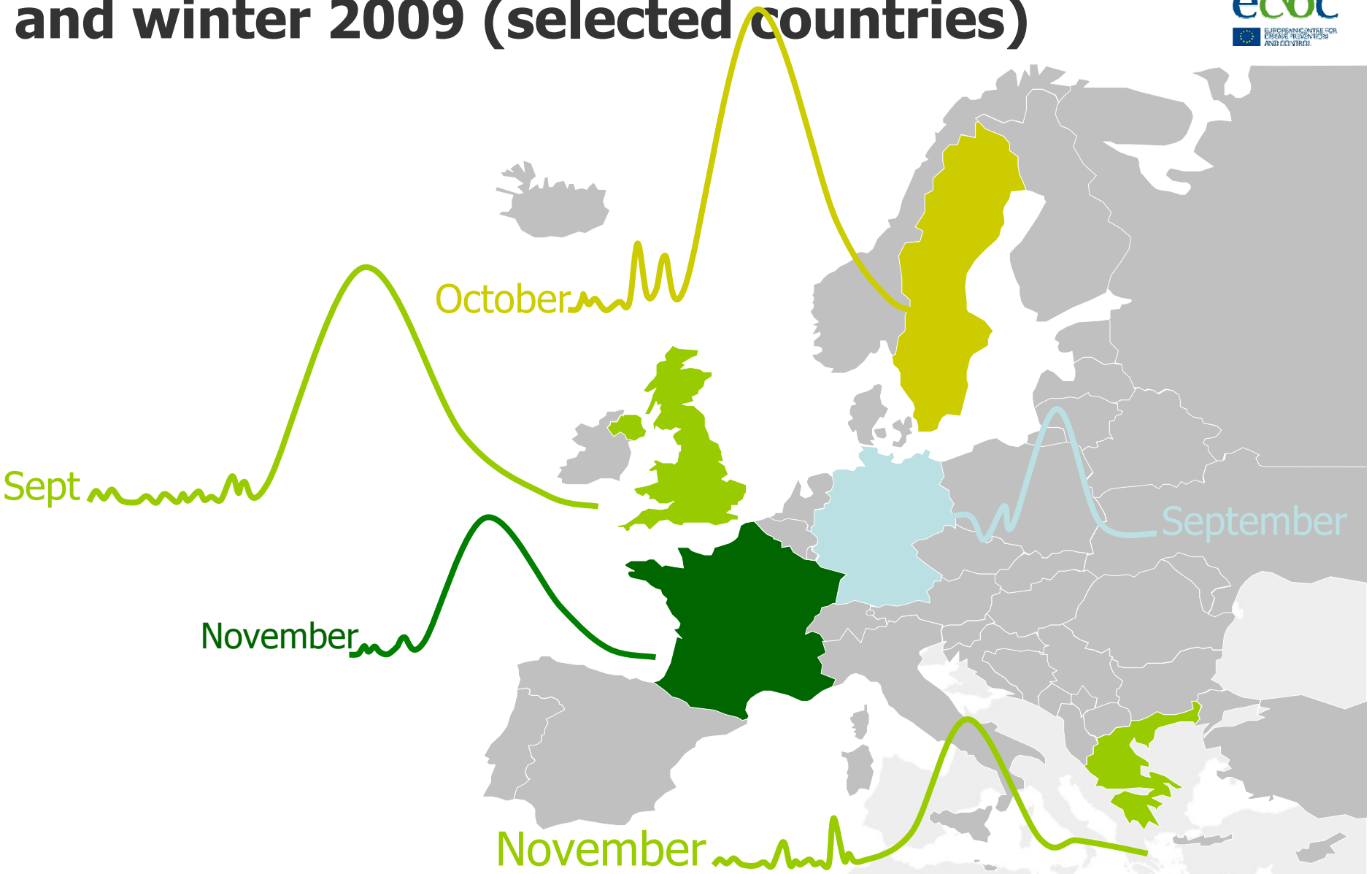
Some revised planning assumptions for the pandemic – first wave A(H1N1) 2009

These represent a reasonable worst case from the most affected country (the United Kingdom) with data available as of July 2009 They should not be used for predictions

Source: UK http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_102892

Clinical attack rate	30%
Peak clinical attack rate	6.5% (local planning assumptions 4.5% to 8%) per week
Complication rate	15% of clinical cases
Hospitalisation rate	2% of clinical cases
Case fatality rate	0.1% to 0.2% (cannot exclude up to 0.35%) of clinical cases
Peak Absence Rate	12% of workforce

One possible European scenario — autumn and winter 2009 (selected countries)



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Policy dilemma – mitigating vs. attempting delaying (containing) pandemics?

Arguments for just mitigating and **not** attempting delaying or containment:

- Containment specifically **not** recommended by WHO in Phases 5 & 6.
- Was not attempted by the United States for this virus.
- Delaying or containment cannot be demonstrated to have worked
- **Very labour-intensive — major opportunity costs**.
- Will miss detecting sporadic transmissions.
- Overwhelming numbers as other countries 'light up'.
- **When you change tactic, major communication challenge with stopping prophylaxis**
- **Proactive school closures rarely feasible and operationally impossible in Europe with this pandemic virus**

http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19279

Cauchemez S et al .(2009) Closing schools during an influenza pandemic: A review. Lancet Infectious Diseases Vol. 9 No. 8 pp 473-481 http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(09)70176-8/abstract

Conclusions

- **Five years preparation have paid off**
- **But need to operationalise and adapt the plans for this specific pandemic**
- **Surveillance has had to be adjusted**
- **Built around a regularly updated risk assessment**
- **Planning projections has to be adjusted**
- **Personal interventions - are justified**
- **Societal Public Health Interventions – mostly not justified**
- **Containment vs. Mitigation - Don't try to contain**
- **Beware of stating numbers – numbers of deaths are difficult**
- **The health care sector is the vulnerable point**

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Acknowledgements

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