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Evaluation of seasonal influenza vaccination policies and coverage in the WHO European Region

Results from the 2008/2009 and
2009/2010 influenza seasons
Based on a joint VENICE–ECDC–WHO
survey





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KEYWORDS

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Abbreviations

ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EMA	European Medicines Agency
EU	European Union
GPs	General practitioners
HCWs	Health care workers
VENICE	Vaccine European New Integrated Collaboration Effort
CINECA	Consortium of University, Bologna, Italy
WHO	World Health Organization

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ISO 3166-1 Country codes

AL	Albania
AD	Andorra
AM	Armenia
AT	Austria
AZ	Azerbaijan
BY	Belarus
BE	Belgium
BA	Bosnia and Herzegovina
BG	Bulgaria
HR	Croatia
CY	Cyprus
CZ	Czech Republic
DK	Denmark
ENG	England (data were provided for England only, not the United Kingdom of Great Britain and Northern Ireland)
EE	Estonia
FI	Finland
FR	France
GE	Georgia
DE	Germany
GR	Greece
HU	Hungary
IS	Iceland
IE	Ireland
IT	Italy
IL	Israel
KZ	Kazakhstan
KG	Kyrgyzstan
LV	Latvia
LT	Lithuania
LU	Luxembourg

MT	Malta
ME	Montenegro
NL	The Netherlands
NO	Norway
PL	Poland
PT	Portugal
MD	Republic of Moldova
RO	Romania
RU	Russian Federation
RS	Serbia
SK	Slovakia
SI	Slovenia
ES	Spain
SE	Sweden
CH	Switzerland
TJ	Tajikistan
TR	Turkey
UZ	Uzbekistan

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Summary

In 2003, the World Health Assembly adopted Resolution WHA 56.19 urging Member States to increase influenza vaccination coverage of all people at high risk and to attain coverage of 75% among the elderly by 2010. This ambition was reaffirmed by a European Parliament resolution in 2005 calling for Member States to increase influenza vaccination in accordance with WHO recommendations.

To assess progress towards this goal, the World Health Organization (WHO) Regional Office for Europe in partnership with the VENICE Collaboration and the European Centre for Disease Prevention and Control (ECDC) conducted a comprehensive survey on seasonal influenza vaccine policies and vaccination uptake (2008/2009 and 2009/2010 seasons), among all 53 Member States of the Region. The results of this survey are intended to provide a baseline from which to measure future improvements in seasonal influenza vaccine uptake in the WHO European Region.

Forty-seven countries (89%) responded to the survey. Of these, 37 countries (79%) had influenza vaccine recommendations for the elderly: 23 recommended vaccination for persons aged ≥ 65 years; 8 recommended vaccination for those aged ≥ 60 years; 2 recommended vaccination for those aged ≥ 55 years; and 3 for those aged ≥ 50 years. In 1 country vaccination was recommended for persons aged ≥ 64 years. Eight countries recommended vaccination for all adults without specific reference to elderly populations. Two countries did not have recommendations for adults of any age. Of the 37 countries that recommended vaccination of the elderly, 29 (78%) had mechanisms in place to monitor uptake for this specific population group.

Eighteen countries (38%) recommended vaccination for children: 9 of these for all children ≥ 6 months–<18 years; the remaining 9 countries had recommendations for children of different age groups.

Among the 47 responding countries, 41 (87%) recommended influenza vaccination for all or some health care workers (HCWs). Only half of the countries where vaccine was recommended for HCWs had a mechanism to monitor uptake in this target group. Other occupational groups recommended for vaccination included persons working in essential and military services (n=19) and persons working in the poultry industry (n=22).

In the majority of the 45 countries recommending vaccination for persons with underlying medical conditions, individuals with chronic pulmonary (n=45), cardiovascular (n=44), immunologic and renal (n=41) diseases, haematological or metabolic disorders (n=43) were recommended for influenza vaccination. In 36 (77%) countries, individuals with HIV/AIDS were also recommended for vaccination. A lower number of countries (n=27; 57%) recommended vaccination of individuals suffering from hepatic diseases and for those with long-term aspirin use (children <18 years old). Two countries did not have recommendations on seasonal influenza vaccination for persons with medical risk conditions.

Twenty-nine (62%) countries recommended vaccination of pregnant women. One country did not recommend vaccination of pregnant women, while the remaining countries did not have any recommendations. One country did not respond to this question. Only 6 countries reported that they had a mechanism in place to monitor vaccination coverage among pregnant women, however, none of these reported coverage data.

Vaccination coverage varied greatly across target groups and countries, and was low overall (with the exception of a few countries) in the Region. Vaccination coverage for elderly populations for the seasons 2008/2009 and 2009/2010 ranged from 0.2% to 83%. Only 1 country met the global target of 75% coverage of the elderly by 2010. The coverage among HCWs was known in 15 countries, ranging from 12% to 98%. The coverage for clinical risk groups was reported for 10 countries, ranging from 25% to 72%. No countries were able to provide vaccination coverage for pregnant women. The coverage for residents of long-term care facilities was available in 4 countries only, ranging from 83% to 94%.

This survey highlights large variations in national policies for seasonal influenza vaccination and coverage among the Member States of the WHO European Region. In addition to low vaccine uptake among the elderly in a number of countries, few countries have systems in place to monitor vaccine uptake in main target groups including health care workers, persons with underlying conditions, residents of long-term care facilities and pregnant women. Finally, in a number of countries, the supply of influenza vaccines is limited.

It is important that steps are taken to identify barriers to, and enablers for, influenza vaccination among the elderly and other priority groups, and appropriate action is taken. Similarly, monitoring of seasonal vaccination uptake is essential for assessing the impact, performance and cost benefits of the immunization programme and should be implemented where possible.

Background

Influenza is a vaccine-preventable disease and annual vaccination is the most effective means to prevent the disease. Influenza infection can cause a wide range of symptoms from mild to serious complicated illness including severe viral pneumonia with multi-organ failure, exacerbation of underlying medical conditions, and invasive bacterial co-infection.

While vaccination can benefit all age groups, it is especially important for people at higher risk of serious complications including the elderly, pregnant women, very young children, and persons with certain medical conditions (e.g. chronic respiratory, cardiac, renal, liver, or haematological diseases, and compromised immune status). Specific population groups may be targeted for vaccination depending on the objectives of the national vaccination programme, documented vaccine effectiveness, access to vaccine and the capacity to implement vaccination campaigns in the targeted groups.

WHO recommends that the following priority groups are vaccinated annually against seasonal influenza:¹

- pregnant women;
- elderly persons over a nationally defined age limit, irrespective of other risk factors;
- individuals >6 months with underlying health conditions;
- children aged 6–59 months;
- health care workers including those who work in homes that care for older persons or persons with disabilities.

¹ Vaccines against influenza WHO position paper – November 2012, Weekly epidemiological record. 23 November 2012, 87th (www.who.int/wer/2012/wer8747.pdf, accessed 6 January 2014)

In 2003, the World Health Assembly adopted Resolution WHA 56.19 urging Member States to increase influenza vaccination coverage of all people at high risk and to attain coverage of 75% among the elderly by 2010.² This ambition was reaffirmed by a European Parliament resolution in 2005³ calling for Member States to increase influenza vaccination in accordance with WHO recommendations.

To assess progress towards this goal, the World Health Organization Regional Office for Europe in partnership with the VENICE⁴ Collaboration and ECDC conducted a survey (2011), covering the 2008/2009 and 2009/2010 influenza seasons, among all 53 Member States in the WHO European Region.⁵ The survey also aimed to describe seasonal influenza immunization policies in general and to obtain vaccination coverage data for the 2008/2009 and 2009/2010 influenza seasons in all 53 Member States of the WHO European Region. The data collected in this survey will provide a baseline from which to measure future progress in vaccination coverage and changes in influenza vaccination policies. Data on seasonal influenza vaccination policies and recommendations presented in this report concern the 2009/2010 season only, while coverage data is presented for both seasons surveyed.

Objectives

The main objectives of this survey were to describe seasonal influenza immunization policies, identify country-specific recommendations for different risk groups, obtain vaccination coverage data by target group in the 2008/2009 and 2009/2010 influenza seasons, and to define data sources that would allow for enhanced monitoring of seasonal influenza vaccine coverage in the WHO European Region.

Methodology

A standardized questionnaire was developed by VENICE using close-ended questions predominantly. Information was sought on population groups recommended for influenza vaccination (e.g. age, occupation, medical risk group), whether countries had mechanisms in place to monitor influenza vaccine uptake and whether uptake was monitored, which methods were used to monitor uptake, vaccination coverage results by population groups, payment and administration costs for influenza vaccines, health care settings where vaccine is typically administered, methodology used to promote influenza vaccines and how this activity was supported, and finally, information was sought on planned policy or operational changes over the next couple of years.

The electronic questionnaire was developed and integrated on the VENICE web site in 2011 by CINECA,⁶ and made available (in English and Russian) to all participating countries. A detailed description of the survey has been published elsewhere.⁷ The questionnaire was completed by experts (see page 5 and 6) in each country and submitted online or as a hard copy. The data for EU/EEA countries has been analysed and published separately.^{8,9}

² Prevention and control of influenza pandemics and annual epidemics, Resolution of the 56th World Health Assembly, WHA 56.19, 2003. http://apps.who.int/gb/archive/pdf_files/WHA56/ea56r19.pdf (accessed 6 January 2014).

³ European Commission. Proposal for a Council recommendation on seasonal influenza vaccination (13-7-2009) http://ec.europa.eu/health/ph_threats/com/Influenza/docs/seasonflu_rec2009_en.pdf (accessed 6 January 2014).

⁴ The Vaccine European New Integrated Collaboration Effort (VENICE) project is funded by EC-DG SANCO. It involves all 27 European Union (EU) member states and Iceland and Norway. <http://venice.cineca.org/> (accessed 6 January 2014).

⁵ Since 2007, the VENICE Collaboration and ECDC have conducted regular surveys on seasonal influenza vaccination policies in the 27 EU Member States and Iceland and Norway. This report presents the first comprehensive survey on seasonal influenza vaccination policies and coverage in the entire WHO European Region.

⁶ CINECA (consortium of universities in Italy) 2011, <http://www.cineca.it/en/index.htm> (accessed 6 January 2014).

⁷ Final report. Seasonal influenza vaccination survey in EU/EEA, influenza season 2009/2010, Appendix 1, p. 38

[venice.cineca.org/Final_Seasonal_Influenza_Vaccination_Survey_2010.pdf](http://www.cineca.org/Final_Seasonal_Influenza_Vaccination_Survey_2010.pdf) (accessed 6 January 2014).

⁸ J Mereckiene et al: Differences in national influenza vaccination policies across the European Union, Norway and Iceland 2008-2009. *Eurosurveillance*, 15 (44), 2010 (<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19700>)

⁹ Seasonal influenza vaccination survey in EU/EEA (season 2009/2010) [venice.cineca.org/Final_Seasonal_Influenza_Vaccination_Survey_2010.pdf](http://www.cineca.org/Final_Seasonal_Influenza_Vaccination_Survey_2010.pdf) (accessed 6 January 2014).

This report presents data from the entire WHO European Region on vaccine recommendations and vaccination coverage only. Data were analysed using Excel 2007 (Microsoft, Redmond, WA, USA).

Results

Response

The response to the survey was 89% (47/53). Monaco, San Marino, the former Yugoslav Republic of Macedonia, Turkmenistan and Ukraine did not respond. The United Kingdom provided vaccination coverage data for England only.

Unless otherwise indicated the results presented below refer to the 47 countries that completed the survey. Detailed results on vaccination recommendations by country can be found in the Annex.

Official policy on seasonal influenza

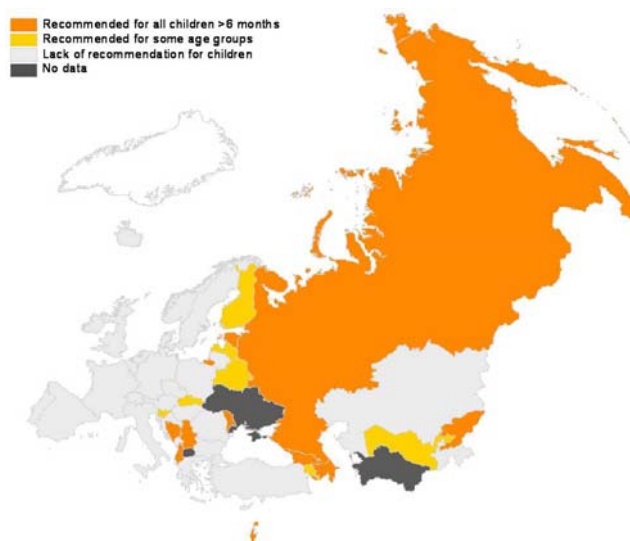
All countries except four (AM, AZ, EE, TJ) reported that they had an official published policy on seasonal influenza vaccination.

Groups recommended for seasonal influenza vaccination

Children

Eighteen countries recommended seasonal influenza vaccination for children without any clinical risk condition: 9 of them (AL, AZ, BA, GE, EE, KG, MD, RU, RS) recommended influenza vaccination for all children aged > 6 months–<18 years; while the other 9 countries recommended vaccination for children of different age groups: >6 months–2 years (SI); >6 months–3 years (FI, LV); >6 months–4 years (MT); >6 months–5 years (IL); >6 months–12 years (SK); >6 months–13 years (UZ); >6 months–15 years (BY); 7–16 years (AM). The remaining 29 countries (AD, AT, BE, BG, HR, CY, CZ, DK, FR, DE, GR, HU, IS, IE, IT, KZ, LT, LU, ME, NL, NO, PL, PT, RO, ES, SE, CH, TJ, TR) did not have recommendations for vaccination of healthy children. Detailed information on influenza vaccine recommendations for children by country is presented in Fig. 1 and Table 1 in the Annex.

Fig. 1. Seasonal influenza vaccination recommendation for children in the WHO European Region (2009/2010 season, n=47).



Elderly and non-elderly adults

Seasonal influenza vaccination for elderly populations was recommended by 37 (79 %) countries (regardless of underlying medical conditions/chronic diseases). However, the age groups recommended for vaccination varied across countries. BE, IE and IL recommended vaccination for persons ≥ 50 years; MT and PL for persons ≥ 55 years; AT, DE, GR, HU, IS, NL, RU and SK for persons ≥ 60 years; and SI for persons ≥ 64 years. The remaining 23 countries had recommendations for vaccinating persons aged ≥ 65 years (AD, BY, BA, BG, HR, CY, CZ, DK, EE, FI, FR, IT, LV, LT, LU, ME, NO, PT, RO, ES, SE, CH, TR). Nine countries (AL, AZ, EE, GE, KZ, KG, MD, RS, UZ) recommended vaccination for all adults. With the exception of EE, these countries did not have a specific recommendation for vaccination of the elderly. Two countries (AM, TJ) did not have recommendations on influenza vaccination for adults (any age group).

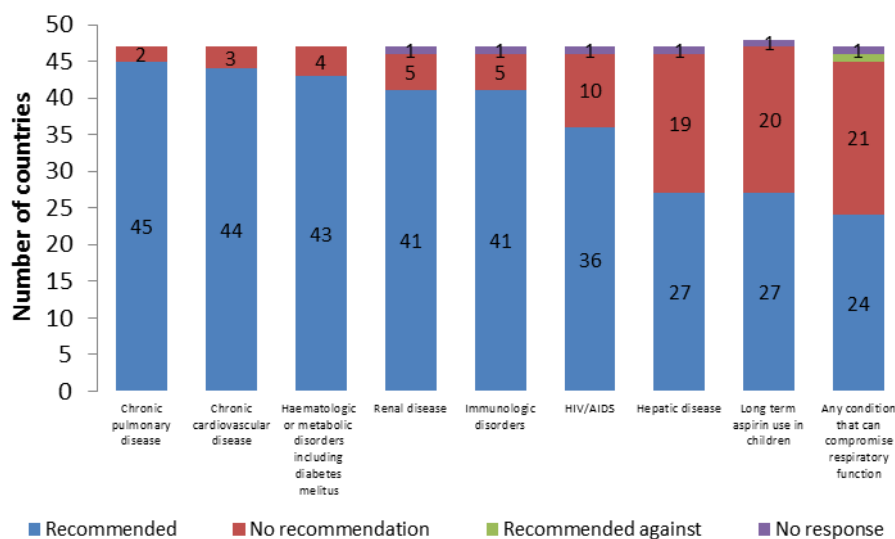
Fig. 2. Seasonal influenza vaccination recommendation for adults, including the elderly in the WHO European Region (2009/2010 influenza season, n=47).



Clinical risk groups

Most countries (n=45) reported that seasonal influenza vaccination was recommended for individuals with chronic medical conditions. Only 2 countries (AM, TJ) did not have recommendations for vaccinating any medical risk group. Among countries with recommendations for individuals with chronic medical conditions, all countries recommended vaccination of persons with chronic pulmonary (n=45), cardiovascular (n=44) and renal (n=41) diseases, haematological or metabolic (n=43) or immunologic disorders (n=41). Thirty-six countries recommended vaccination of individuals with HIV/AIDS. Furthermore, 27 countries recommended vaccination of individuals suffering from hepatic diseases (Fig. 3 and Table 2 in the Annex).

Fig. 3. Medical conditions for which seasonal influenza vaccine was recommended in the WHO European Region (2009/2010 influenza season, n=47).



Pregnant women

Of 47 countries, 29 (62%) (AL, AD, AZ, BY, BE, CY, HR, DK, EE, DE, GE, GR, HU, IS, IE, IL, IT, KG, LT, LU, PT, MD, RU, RS, SI, ES, SE, CH, UZ) indicated that influenza vaccination was recommended for pregnant women. Among these, 10 countries recommended vaccination for all pregnant women (AD, BY, GE, HU, IS, IL, LT, PT, ES, SE) and 19 countries recommended it for some pregnant women (AL, AZ, BE, HR, CY, DK, EE, DE, GR, IE, IT, KG, LU, MD, RU, RS, SI, CH, UZ) with an additional clinical risk indication (n=5) or during a certain trimester (n=13). One country (RU) reported that vaccination is recommended for pregnant women on a case-by-case basis. A total of 16 countries (AM, AT, BA, BG, CZ, FI, FR, LV, MT, NL, NO, PL, RO, SK, TJ, TR) did not have recommendations for seasonal influenza vaccination for pregnant women and 1 country (KZ) did not recommend vaccination of pregnant women. One country did not respond to this question (ME). Detailed information is presented in Fig. 4 and Table 2a in the Annex.

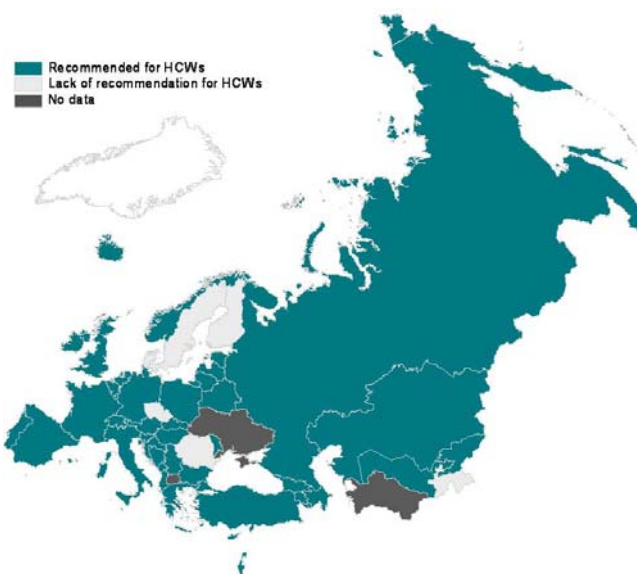
Fig. 4. Seasonal influenza vaccination recommendation for pregnant women in the WHO European Region (2009/2010 influenza season, n=47).



Health care workers (HCWs)

Most countries (n=41) reported that influenza immunization was recommended for all or some HCWs (AL, AD, AM, AT, AZ, BY, BE, BA, BG, HR, CY, EE, FR, GE, DE, GR, HU, IS, IE, IL, IT, KZ, KG, LV, LT, LU, MT, MD, ME, NL, NO, PL, PT, RU, RS, SK, SI, ES, CH, TR, UZ). Six countries indicated that no seasonal influenza vaccine recommendations existed for this population group (CZ, DK, FI, RO, SE, TJ). More detailed information regarding recommendations for influenza vaccination in HCWs is presented in Fig. 5 and Table 3 in the Annex.

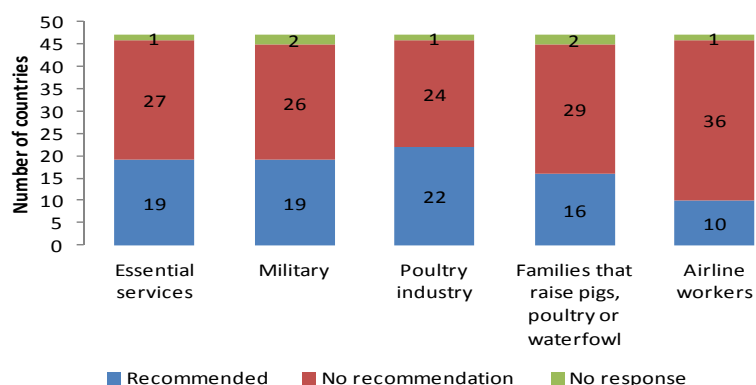
Fig. 5. Seasonal influenza vaccination recommendation for health care workers in the WHO European Region (2009/2010 season, n=47).



Occupational groups (non health care)

Influenza vaccination was recommended for essential and military services in 19 countries; for poultry industry workers in 22 countries; and for families that raise pigs, poultry or waterfowl in 16 countries. Sixteen countries did not have recommendations for any of these occupational groups (detailed information by country is presented in Fig. 6 and Table 4 in the Annex).

Fig. 6. Seasonal influenza vaccination recommendation for occupational settings in the WHO European Region (2009/2010 season, n=47).



Residents of long-stay care facilities

Forty (85%) countries (AD, AM, AT, BY, BE, BA, BG, HR, CY, CZ, DK, EE, FR, GE, DE, GR, HU, IS, IE, IL, IT, KZ, KG, LT, LU, MT, ME, NL, NO, PT, MD, RO, RU, RS, SK, SI, ES, CH, TR, UZ) reported that influenza vaccine was recommended for residents of long-term stay care facilities (Fig. 7).

Fig. 7. Seasonal influenza vaccination recommendation for residents of long-term care facilities (LTCF) in the WHO European Region in the 2009/2010 season, n=47).



Monitoring vaccination coverage

Of 41 countries that responded to this question (AM, AZ, GE, MD, TJ, TR did not respond) the ability to monitor influenza vaccination coverage varied. Seven countries (BY, EE, DE, HU, IL, IT, SK) reported that they had mechanisms in place to monitor coverage for all population groups for whom vaccine was recommended; 29 countries (AL, AD, BA, CY, DK, FI, FR, HR, IS, IE, KZ, KG, LV, LT, LU, MT, ME, NL, NO, PL, PT, RO, RU, RS, SI, ES, SE, CH, UZ) monitored coverage for some groups targeted for vaccination and 5 countries (AT, BE, BG, GR, CZ) had no mechanisms in place to monitor vaccination coverage for any population groups.

Children

In the 18 countries that recommended influenza vaccine for children, 11 indicated that they monitor uptake: AL, AM, BY, EE, FI, IL, LV, RU, SI, RS, SK. Seven of these countries (BY, EE, FI, LV, IL, SK, SI) provided vaccine uptake data. AL, RU, RS indicated that they monitor uptake among children, but did not provide coverage data. In addition FR, IT, PL and PT, which did not have recommendations to vaccinate children, were able to provide uptake data for children (Table 1 below).

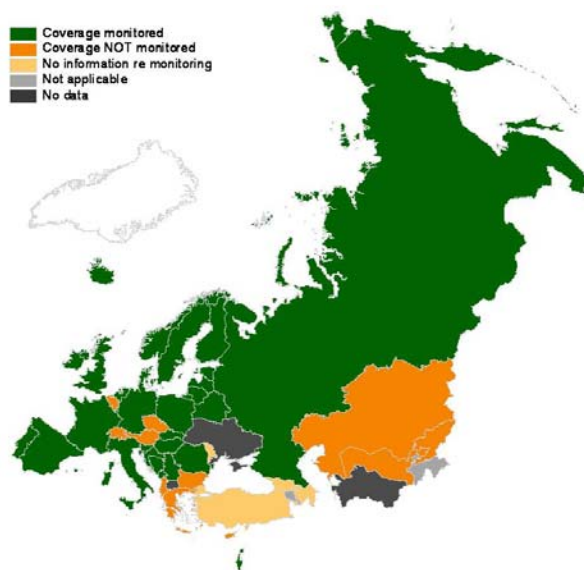
Elderly

Among the 37 countries that recommended seasonal influenza vaccine for elderly populations, 29 (78%) had mechanisms to monitor vaccination coverage in this specific population group (AD, BY, BA, HR, DK, EE, FI, FR, DE, HU, IS, IE, IL, IT, LV, LT, LU, MT, ME, NL, NO, PL, PT, RO, RU, ES, SI, SE, SK); 7 (AT, BE, BG, CY, CZ, GR, CH) did not have mechanisms to monitor uptake in elderly; and 1 (TR) did not respond to this question.

Non-elderly adults

Among the 8 countries that recommended vaccination of all adults, only 1 (RS) reported having a mechanism for monitoring uptake among those aged ≥ 65 . Four countries (AL, KZ, KG, UZ,) did not have mechanisms to monitor vaccination coverage in adults and 3 countries did not specify if they had a mechanism to monitor uptake in the adult population (AZ, GE, MD) (Fig. 8).

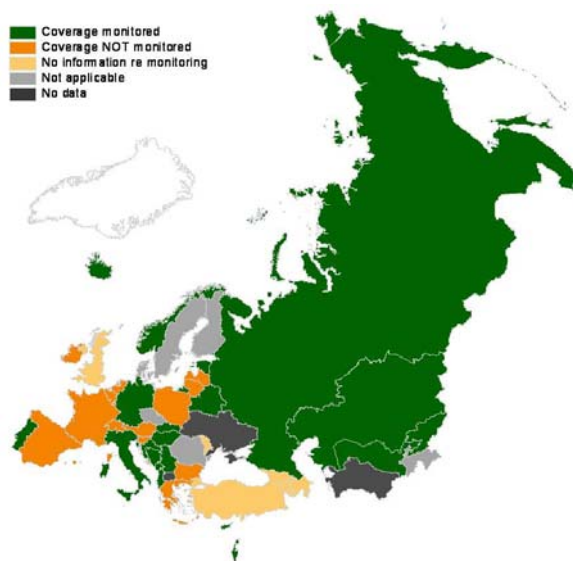
Fig. 8. Monitoring seasonal influenza vaccination coverage in the elderly and adults in the WHO European Region (2009/2010, n=47).



Health care workers

Of 41 countries that recommended seasonal influenza vaccine for HCWs, 21 countries reported that they had mechanisms to monitor uptake in this target group (AL, BY, BA, HR, CY, EE, DE, HU, IS, IL, IT, MT, ME, NO, PT, SK, KZ, KG, RU, RS, UZ,). The remaining 20 countries that recommended vaccination for HCWs did not have mechanisms to monitor uptake among this group (AD, AT, BE, BG, FR, GR, IE, LV, LT, LU, NL, PL, SI, ES, CH). AM, AZ, GE, MD, TR (n=5) did not respond to this question (Fig. 9).

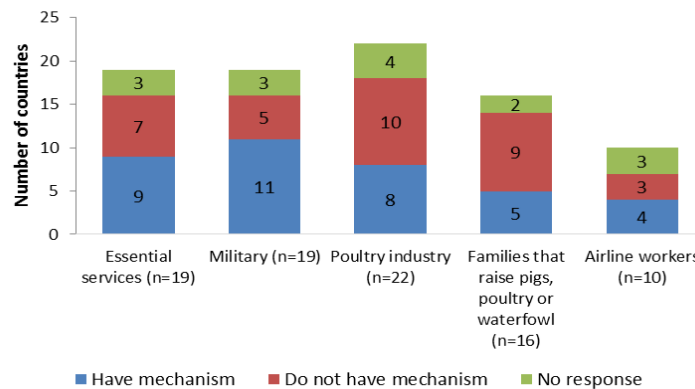
Fig. 9. Monitoring seasonal influenza vaccination coverage among HCWs in the WHO European Region (2009/2010 influenza season, n=47).



Essential services personnel

Among the 19 countries that recommended seasonal influenza vaccination of persons working in essential services (n=19) and the military (n=19), 9 and 11 countries respectively did have mechanisms to monitor vaccine uptake among these two groups. Eight countries (of 22 that recommended vaccination for staff working in the poultry industry) reported that they had mechanisms to monitor uptake for this specific population group. Four countries (of 10 that recommended vaccination for airline workers) had mechanisms to monitor uptake for this group (Fig. 10).

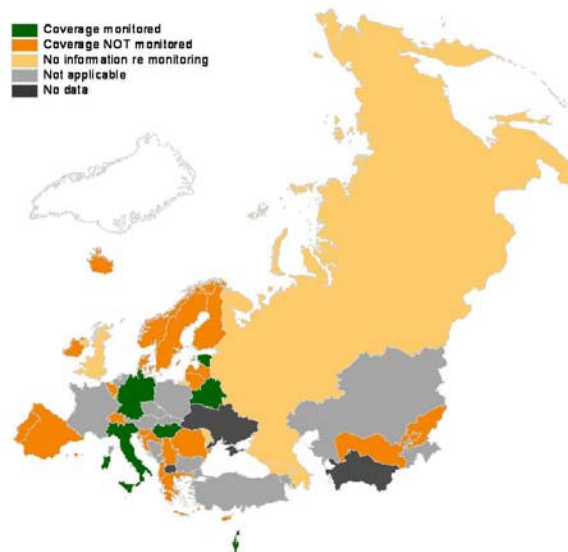
Fig. 10. Monitoring seasonal influenza vaccination coverage in occupational settings in the WHO European Region (2009/2010 influenza season, n=47).



Pregnant women

Of 29 countries that recommended vaccination for pregnant women, only 6 (21%) countries (BY, EE, DE, HU, IL, IT) had mechanisms in place to monitor vaccination coverage. Four countries did not respond to this question (AZ, GE, MD, RU). Nineteen countries did not have any mechanism to monitor uptake among pregnant women: AL, AD, BE, CY, DK, GR, HR, IS, IE, KG, LT, LU, PT, RS, SI, ES, SE, CH, UZ (Fig. 11).

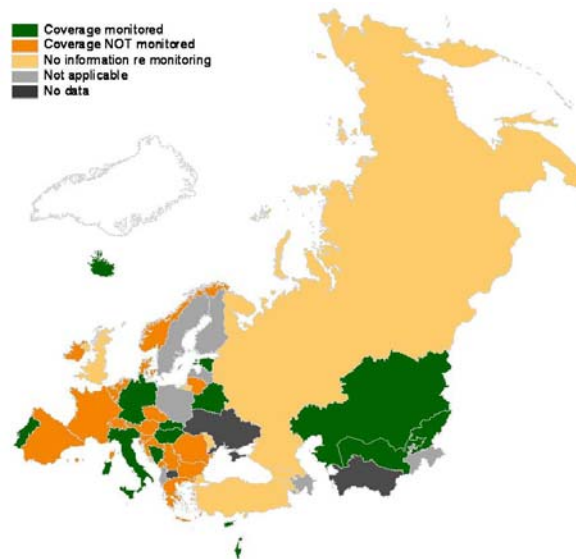
Fig. 11. Monitoring seasonal influenza vaccination coverage among pregnant women in the WHO European Region (2009/2010 influenza season, n=47).



Residents of long-term care facilities

Of 40 countries that recommended vaccination for residents of long-term care facilities, 16 (AD, BA, BY, CY, EE, DE, HU, IS, IL, IT, KZ, KG, MT, PT, UZ, SK) had mechanisms to monitor uptake among this specific population group and 19 (AT, BE, BG, GR, HR, CZ, DK, FR, IE, LT, LU, ME, NL, NO, RO, RS, SI, ES, CH) did not. Five countries did not respond to this question (AM, GE, MD, RU, TR).

Fig. 12. Monitoring seasonal influenza vaccination coverage in residents of long-stay care facilities in WHO European Region (2009/2010 influenza season, n=47).



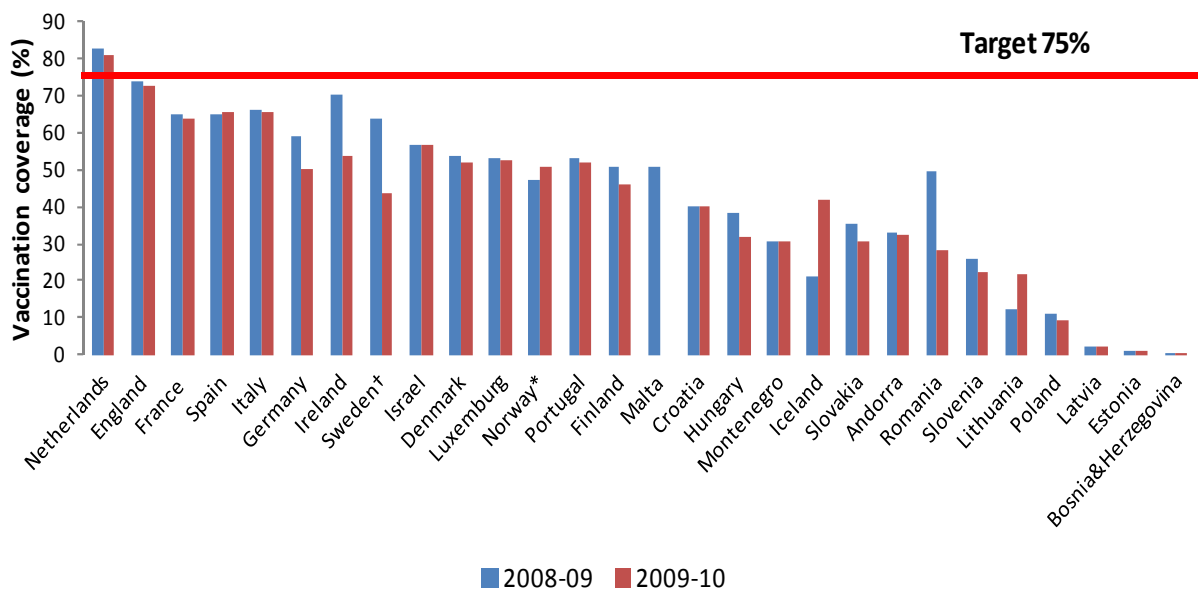
Vaccination coverage in the 2008/2009 and 2009/2010 influenza seasons

Overall 29 countries provided vaccination coverage rates for elderly populations (29 for the season 2008/2009 and 27 for 2009/2010). Of 29 countries that did have a mechanism to monitor vaccination coverage, 27 (AD, BA, HR, DK, EE, FI, FR, DE, HU, IS, IE, IL, IT, LV, LT, LU, MT, ME, NL, NO, PL, PT, RO, SK, SI, ES, SE) reported uptake. ENG did not respond to the survey, but did provide uptake for the elderly. Two countries (RU, BY) reported that they had mechanisms to monitor uptake, but were not able to provide vaccination coverage for elderly populations.

Vaccination coverage for elderly populations ranged from 0.3% in BA to 83% in NL in 2008/2009 and from 0.2% in BA to 81% in NL in 2009/2010. Only 1 country (NL) reached the 2010 target of vaccinating 75% of the elderly, and 1 country (ENG) almost achieved this target. A number of countries achieved considerable coverage (50%–70%) among the elderly (DK, FR, DE, IE, IL, IT, LU, MT, NO, PT, ES, SE) in both influenza seasons. In 8 countries (AD, HR, HU, ME, IS, RO, SK, SI) uptake varied from 20% to 40%, whereas 5 countries reported coverage of less than 10% (BA, EE, LV, LT, PL) in 2008/2009 and 2009/2010 (Fig. 13).

The lower uptake of seasonal influenza vaccine in 2009/2010 among the elderly in a number of countries compared with 2008/2009 was anticipated as most countries were recommending using the monovalent A(H1N1) vaccine during the 2009 pandemic. It is, however, unlikely that a much higher number of countries would have reached the 2010 goal of vaccination 75% of the elderly if there had not been a pandemic.

Fig. 13. Reported seasonal influenza vaccination coverage among the elderly in the 2008/2009 and 2009/2010 influenza seasons in the WHO European Region (n=28).



† Sweden: reports were received for only about 60% of the population for the 2009/2010 influenza season.

*Norway: coverage results calculated for adults aged ≥ 65 and clinical risk groups together.

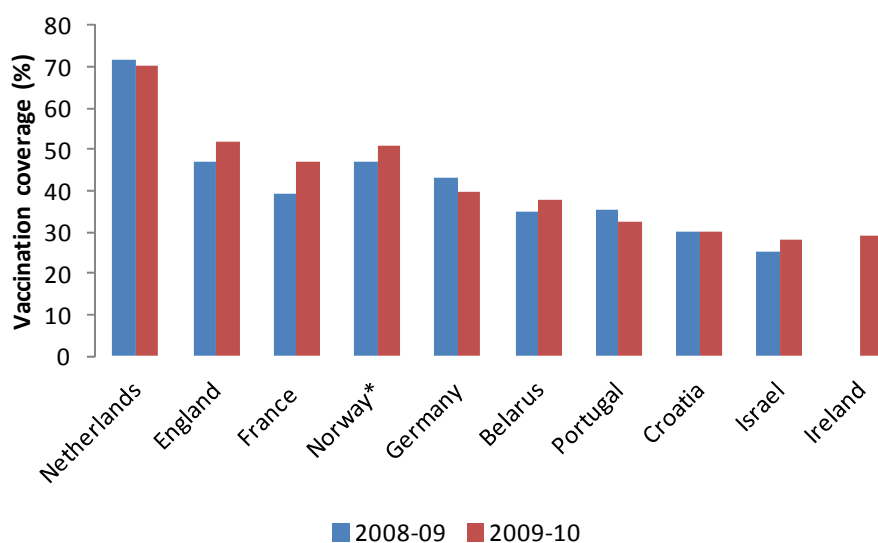
Overall 11 countries reported vaccination coverage data for a variety of age groups of children calculated by administrative or survey methods for one or both influenza seasons. In 7 of these countries (BY, EE, FI, IL, LV, SK, SI) seasonal influenza vaccine was recommended for children. Four countries (FR, IT, PL and PT) did not recommend influenza vaccine for children, however, were able to provide uptake (Table 1).

Table 1. Reported seasonal influenza vaccination coverage rates among children in the 2008/2009 and 2009/2010 influenza seasons in the WHO European Region.

Country/ Method for coverage calculation	Vaccination coverage (%) by influenza season	
	2008-09	2009-10
Age groups		
Administrative method		
≥6 months-<2 years		
Israel	11.1	17.8
Latvia	0.3	0.1
≥6 months – <3 years		
Finland	-	32
≥6 months -<5 years		
Estonia	1	1
Poland	2	1
Italy	-	6.1
Slovenia	0.7	0.8
24 months-5 years		
Israel	9.3	9.3
≥6 months -14 years		
Belarus	15	-
≥6 months -15 years		
Slovakia	8.6	7.5
≥6 months - 17 years		
Belarus	-	21
5-14 years		
Estonia	2	1
Italy	-	5.1
Poland	2.9	1.7
6 - 16 years		
Armenia	96	-
5-18 years		
Slovenia	1.1	1.2
Survey method		
≥6 months-4 years		
France	-	9.9
5-14 years		
France	-	6.5
≥6 months-15 years		
Portugal	-	13

Overall 10 countries were able to report uptake in clinical risk groups (9 countries in 2008/2009 and 10 countries in 2009/2010), although vaccination recommendations existed for different medical risk groups in most countries (45/47). The range in uptake varied from 25% in IL to 72% in NL in 2008/2009 and from 28% in IL to 70% in NL in 2009/2010. There was a slight increase in uptake between the two seasons in BY, ENG, FR, IL and NO; while in DE, NL and PT recorded a slight decrease in uptake.

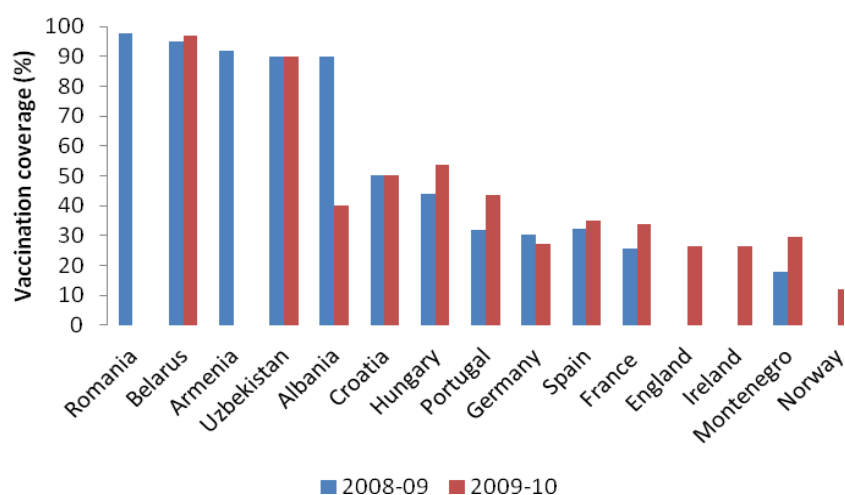
Fig. 14. Reported seasonal influenza vaccination coverage rates in risk groups in the 2008/2009 and 2009/2010 influenza seasons in the WHO European Region. Seasonal influenza vaccination survey, 2011 (n=10).



*Norway: coverage results calculated for adults aged ≥ 65 and clinical risk groups together

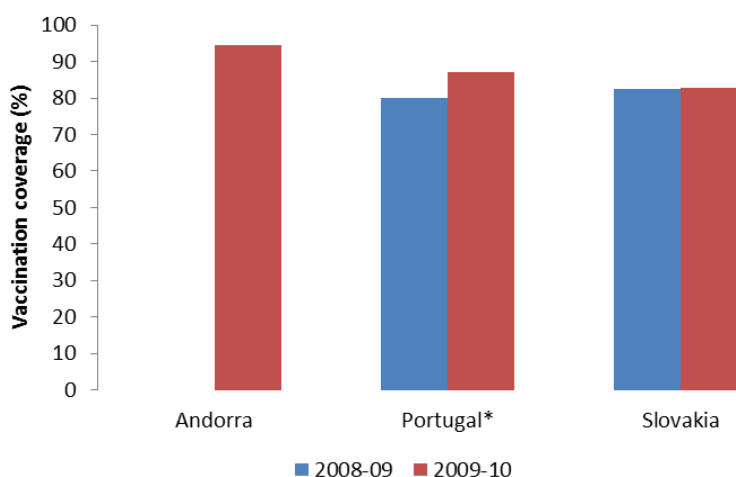
Overall, 15 countries were able to report vaccination coverage among HCWs for one or both influenza seasons (12 countries in 2008/2009 and 13 in 2009/2010). Forty-one countries recommended vaccination for HCWs and 21 reported that they had mechanisms in place to monitor uptake. The range in uptake varied from 18% in ME to 98% in RO in 2008/2009, and 12% in NO to 97% in BY in 2009/2010. The highest uptake, around 90%, was reported by AL, AM, BY, RO and UZ (2008/2009). In the remaining 10 countries uptake was less than 55%.

Fig. 15. Reported seasonal influenza vaccination coverage rates among HCWs in the 2008/2009 and 2009/2010 influenza seasons in the WHO European Region. Seasonal influenza vaccination survey, 2011 (n=15).



Of 40 countries that recommended vaccination for residents in long-stay care facilities, 16 had mechanisms to monitor uptake, of which only 3 provided vaccination coverage data in one or both seasons. High uptake was achieved in all 3 countries (range 80% to 94%) in both seasons (Fig. 16).

Fig. 16. Reported seasonal influenza vaccination coverage rates in residents of long-stay care facilities in the 2008/2009 and 2009/2010 influenza seasons in the WHO European Region. Seasonal influenza vaccination survey, 2011 (n=3).



*Data were not reported from one region.

Conclusions

Official policy for seasonal influenza vaccination

- Four countries did not have an official written seasonal influenza policy at the time of this survey.

Recommendations for influenza vaccination

- The results of the survey demonstrate that recommendations and implementation of seasonal influenza vaccination programmes in Member States of the WHO European Region broadly followed both WHO and EU recommendations.
- Recommendations for seasonal influenza vaccination exist in most countries of the WHO European Region for the elderly population, those with a medical risk condition, those living in long-term care facilities and health care workers. More than half of the countries also had recommendations for vaccination of pregnant women.

Monitoring vaccination coverage

- The only population group targeted for seasonal influenza vaccine and for which vaccination coverage is known in most countries is the elderly. With the exception of seven countries, all countries that specified that they have a mechanism to monitor uptake for this specific group provided vaccination coverage data.
- In contrast, most countries do not monitor vaccination coverage for persons with medical risk conditions, residents of long-stay care facilities, pregnant women and HCWs. Two thirds of countries that specified that they had mechanisms to monitor uptake for HCWs reported vaccination coverage for this group in the survey. Approximately half of the countries that

reported that they had mechanisms to monitor uptake for medical risk groups reported uptake. Among the 29 countries that recommended vaccine for pregnant women, 6 indicated that they had mechanisms to monitor uptake; however none of these countries reported coverage data.

- These findings confirm that there is a large gap between recommendations and implementation (vaccination uptake), but also between recommendations and availability of mechanisms to monitor uptake.
- The lack of efficient vaccination coverage assessment in target groups prevents accurate monitoring of interventions and evaluation of the effectiveness of seasonal influenza vaccination programmes.

Vaccination coverage

- Vaccination coverage rates vary widely across groups targeted by vaccination and across countries.
- Although the vast majority recommend vaccination of the elderly population, vaccination coverage for this group is low in many countries. The vaccination coverage target of 75% in the elderly population by 2010 was achieved only by the Netherlands.
- Vaccination coverage for persons with underlying medical conditions was available for only one fourth of the countries. Vaccination coverage in this group was considerably lower in comparison to the vaccination coverage among the elderly in most countries that provided this data, except in the Netherlands, where uptake was high.
- Vaccination coverage among HCWs was available from approximately half of the surveyed countries. Coverage varied greatly between countries with a few countries reporting very high uptake. In the remaining countries, vaccination coverage was lower for HCWs than for other targeted population groups.
- Among residents of long-term care facilities, vaccination coverage was very high in those countries that were able to provide data for this specific population group; however uptake was known in only three countries.
- Although vaccination was recommended for pregnant women in half of the surveyed countries, vaccination coverage rates for this group were not reported by any country.
- The results of this survey show that achieving high vaccination coverage rates for those who are at risk of developing severe complications due to influenza infection remains a serious public health challenge.

Recommendations

- Countries that do not have an official written seasonal influenza vaccination policy are encouraged to adopt such a document and identify key target groups for vaccination according to national capacities and priorities.

- In order to enable assessment of the performance of the national influenza vaccination programme, countries should strive to strengthen influenza vaccination coverage monitoring systems for target groups for whom vaccination is most commonly recommended (elderly, persons with medical risk conditions, pregnant women and HCWs). Data on uptake should be collected on an annual basis at the end of the influenza season.
- This survey shows that vaccination coverage rates need to be improved among all targeted groups: the elderly, those with medical risk conditions and health care workers.
- WHO advises countries to encourage health care workers to proactively recommend seasonal influenza vaccination to persons identified as key target groups by the national vaccination programme; to implement communication campaigns on influenza and influenza vaccines specifically for these population groups; and to support vaccination by increasing access.
- Judging by the results of this survey, more work is needed to explore how recommendations (at both national and international levels) can be effectively translated into higher vaccination coverage. This may also require research to identify the reasons for non-vaccination in countries with low vaccination coverage rates and drivers for vaccination in countries that have already achieved targets of 75%.
- To enable comparison of vaccination coverage rates at European level, annual population-based surveys conducted using the same or similar methodologies may be useful.
- Surveys on seasonal influenza vaccination policies and coverage should be conducted annually. The standardized information provided by such surveys would enable WHO and EU bodies to assess progress towards achieving implementation of internationally accepted recommendations and goals on seasonal influenza vaccination.

Annex: Seasonal influenza vaccination recommendations by country

Table 1. Age groups recommended for seasonal influenza vaccination (without risk indications) in the WHO European Region by country in the 2009/2010 influenza season. Seasonal influenza vaccination survey, 2011 (n=47).

Age groups	Countries
Children	
No recommendation for children of any age	AD, AT, BE, BG, CY, CZ, DK, HR, FR, DE, GR, HU, IS, IE, IT, KZ, LT, LU, ME, NL, NO, PL, PT, RO, ES, SE, CH, TJ, TR
Recommended for all children > 6 months – <18 years	AL, AZ, BA, EE, GE, KG, MD, RU, RS
Recommended for some age groups:	AM, BY, FI, IL, LV, MT, SK, SI, UZ
>6 months– 2 years	SI
>6 months– 3 years	FI, LV
>6 months– 4 years	MT
> 6– 59 months (5 years)	IL
>6 months– 12 years	SK
> 6 months– 13years	UZ
> 6 months– 15years	BY
7-16 years	AM
Adults	
No recommendation for adults of any age	AM, TJ
Recommended for all adults >18 years	AL, AZ, EE, GE, KZ, KG, MD, RS, UZ
Recommended for some age groups:	AD, AT, BY, BE, BA, BG, FR, HR, CY, CZ, DK, EE, FI, DE, GR, HU, IS, IE, IL, IT, LV, LT, LU, MT, ME, NL, NO, PL, PT, RO, RU, SI, SK, ES, SE, CH, TR,
> 50 years	BE, IE, IL

>55 years	MT,PL
> 60 years	AT, DE, GR, HU, IS, NL, RU, SK
>64 years	SI
> 65 years	AD, BY, BA, BG, HR, CY, CZ, DK, EE, FI, FR, IT, LV, LT, LU, ME, NO, PT, RO, ES, SE, CH, TR
Recommended to all ages	
> 6months	AL, AZ, EE, GE, KG, MD, RS
No recommendation for any age	
	TJ

Table 2. Medical risk groups recommended for seasonal influenza vaccination in the WHO European Region by country in 2009/2010 influenza season. Seasonal influenza vaccination survey, 2011 (n=47)

Medical risk groups	Countries	
	Recommended	No recommendation
Chronic pulmonary (including asthma) disease	AL, AD, AT, AZ, BY, BE, BA, BG, HR, CY, CZ, DK, EE, FI, FR, GE, DE, GR, HU, IS, IE, IL, IT, KZ, KG, LV, LT, LU, MT, NL, NO, PL, PT, ME, MD, RO, RU, RS, SK, SI, ES, SE, CH, TR, UZ	
Cardiovascular (except hypertension) disease	AL, AD, AT, BE, BG, CY, CZ, BY, BA, HR, DK, EE, FI, FR, GE, DE, GR, HU, IS, IE, IL, IT, KZ, KG, LV, LT, LU, MT, ME, NL, NO, PL, PT, MD, RO, RU, RS, SK, SI, ES, SE, CH, TR, UZ	AZ
Renal disease*	AL,AD, AT, BY, BE, BA, BG, HR, CY, CZ, DK, EE, FI, FR, GE, DE, GR, HU, IS, IE, IT, IL, LV, LT, LU, MT, ME, NL,NO,PL,PT, MD, RO, RU, RS, SK, SI, ES, SE, CH, UZ	AZ,KZ,KG
Hepatic disease*	AL, AT, BY,BA, BE, BG, HR, CY, DK, EE, FI, DE, IS, IE, IL, MT, ME, PT, MD, RO, RU, SK, SI, ES, SE, CH, UZ	AD, AZ, CZ, FR, GE,KZ, KG, RS, GR, HU, IT, LV, LT, LU, NL, NO, PL

Haematological or metabolic disorders (including diabetes mellitus)	AL, AD, AT, BY, BE, BA, BG, HR, CY, CZ, DK, EE, FI, FR, GE, DE, GR, HU, IS, IE, IL, IT, KG, LV, LT, LU, MT, ME, NL, NO, PL, PT, MD, RO, RU, RS, SK, SI, ES, SE, CH, TR, UZ	AZ, KZ
Immunologic disorders other than HIV/AIDS*	AL, AD, AT, BY, BE, BA, BG, HR, CY, CZ, DK, EE, FI, FR, GE, DE, GR, HU, IS, IE, IL, IT, LV, LT, LU, MT, ME, NL, NO, PL, PT, MD, RO, RU, RS, SK, SI, ES, SE, CH, UZ	AZ, KZ, KG
HIV/AIDS*	AL, AD, BY, BE, BA, BG, HR, CY, CZ, DK, EE, FI, FR, DE, GR, HU, IS, IE, IL, IT, LV, LT, LU, MT, ME, MD, NL, NO, PL, PT, RO, RU, RS, ES, CH, UZ,	AT, AZ, GE, KZ, KG, SK, SI, SE
Long-term aspirin use (in children up to 18 years old)	AL, AD, BY, BE, EE, FR, HR, CY, FI, GE, GR, HU, IS, IE, IL, IT, LV, LT, LU, ME, NL, PT, MD, RO, SI, ES, TR	AT, AZ, BA, BG, CZ, DK, DE, KZ, KG, MT, NO, PL, RU, RS, SK, SE, CH, UZ
Any condition affecting respiratory function*†	AL, BA, BE, HR, CY, DK, EE, FI, DE, GR, IS, IE, IL, IT, LU, MT, ME, NL, PT, SK, SI, ES, SE, CH	AD, AT, AZ, BY, BG, CZ, FR, GE, HU, KZ, KG, LV, LT, NO, PL, MD, RU, RS, RO
No recommendation for any medical risk groups	AM, TJ	

*TR no response.

†UZ no response.

Table 2a. Pregnant women recommended seasonal influenza vaccine in the WHO European Region by country in 2009/2010 influenza season. Seasonal influenza vaccination survey, 2011. (n=47)

Recommendation	Countries	Total
Recommended for all	AD, BY, GE, HU, IS, IL, LT, PT, ES, SE	10
No recommendation	AM, AT, BA, BG, CZ, FI, FR, LV, MT, NL*, NO, PL, RO, SK, TJ, TR	16
Not recommended	KZ	1
No response	ME	1

Recommended for some:	AL, AZ, BE, HR, CY, DK, EE, DE, GR, IE, IT, KG, LU, MD, RU, RS, SI, CH, UZ	19
2nd and 3rd trimester	BE, CY, EE, GR, IT, LU, MD, RS, CH†, UZ	10
1st trimester	AZ	1
2nd trimester	AL	1
3rd trimester	KG	1
Only at risk	HR, DK, DE, IE, SI	5
Decided on a case-by-case basis by medical doctor	RU	1

*NL: Recommended in case of medical indication

† CH: Recommended for all pregnant women with pre-existing medical risk conditions (any trimester), and additionally since autumn 2009 for all healthy women from the 4th month of pregnancy to 2 weeks after delivery.

Table 3. HCWs recommended seasonal influenza vaccine in the WHO European Region by country in 2009/2010 influenza season. Seasonal influenza vaccination survey, 2011 (n=47)

Setting	Recommended	No recommendation
Hospital staff	AL, AD, AM, AT, AZ, BY, BE, BA, BG, HR, CY, DE, EE, FR, GE, GR, HU, IS, IE, IL, IT, KZ, KG, LV, LT, LU, MT, ME, NL, NO, PL, PT, MD, RU, RS, SK, SI, ES, CH, TR, UZ	CZ, DK, FI, RO, SE
Out-patient clinic staff	AL, AD, AM, AT, AZ, BA, BE, BY, BG, HR, CY, EE, FR, GE, DE, GR, HU, IS, IE, IL, IT, KZ, KG, LV, LT, LU, MT, ME, MD, NO, PL, PT, RU, RS, SK, SI, ES, CH, TR, UZ	CZ, DK, FI, NL, RO, SE
Laboratory staff	AL,AZ,BY,BA,HR,IL,KG,ME,MD,RU,RS,TR,UZ,AT,BG,CY,EE,FR,DE,GR,HU,IS,IE,LT,LU,MT,NL,PL,PT,SI,ES	AD, AM, BE, CZ, DK, FI, GE, IT, KZ, LV, NO, RO, SK, SE, CH
Staff at long-term care facilities	AL, AD, AM, AT, BY, BE, BA, BG, CY,CZ, HR EE, FR, GE, DE, GR, HU, IS, IE, IL, IT, KZ, KG, LT, LU, MT, ME, MD, NL, NO, PL, PT, RU, RS, SK, SI, ES, CH, TR, UZ	AZ, DK, FI, LV, RO, SE

None	TJ
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Additionally: FR, IE, IL, ME recommended vaccination of all HCWs; AL recommended vaccination of staff working in the public health sector; KG recommended vaccination of ambulance service staff; RU recommended vaccination for medical students; CH recommended vaccination for professional and non-professional staff performing home care visits and medical/nursing home visits; AT recommended vaccination of health care professionals working with risk groups; IT recommended vaccination of general practitioners; ES recommended vaccination for persons who perform home care visits of people in risk groups.

Table 4. Other occupational settings recommended for seasonal influenza vaccination by country in 2009/2010 influenza season. Seasonal influenza vaccination survey, 2011 (n=47)

	Recommended	No recommendation
Essential services*	AL, AD, AZ, BY, BA, BG, EE, IL, IT, KG, HU, LU, MT, PL, MD, RU, RS, ES, UZ,	BE, CY, FR, GE, DE, GR, IS, IE, SI, SK, CH
Military*†	AL, AZ, BY, BA, BG, EE, DE, GR, HU, IL, KG, LU, MT, MD, RU, RS, SK, ES, UZ	AD, BE, CY, FR, GE, IS, IE, CH, PL, SI
Poultry industry*	AL, AZ, BY, BE, BA, CY, GE, DE, GR, HU, IS, IE, IL, IT, KG, MT, MD, RU, SI, ES, CH, UZ	AD, BG, EE, FR, LU, PL, RS, SK
Families that raise pigs, poultry or waterfowl*‡	AL, GE, IL, KG, MD, CH, UZ, BE, CY, DE, HU, IS, IE, IT, SI, ES	AD, AZ, BY, BA, RS, BG, EE, FR, GR, LU, MT, PL, SK
Airline workers*	AL, AZ, BY, BA, IL, MD, RU, UZ, FR, PL	AD, GE, KG, RS, CH, BE, BG, CY, EE, DE, GR, HU, IS, IE, IT, LU, MT, SK, SI, ES
None	TJ, TR, KZ, HR, AM, AT, CZ, DK, FI, LV, LT, NL, NO, PT, RO, SE	

*ME no response. †IT no response. ‡RU no response.

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