

Influenza A(H1N1) virus resistance to oseltamivir - Last quarter 2007 to 21 February 2008

The detection of an increased number of A(H1N1) viruses with resistance to oseltamivir was initially reported to WHO from Norway on 25th January (see WHO website:

http://www.who.int/csr/disease/influenza/oseltamivir_faqs/en/index.html). Before recent detection of a high prevalence of oseltamivir resistance in influenza A (H1N1) viruses with a specific neuraminidase mutation (H274Y) in Norway, such resistance was rarely observed in community isolates. During the previous northern hemisphere winter season (2006/07), surveillance through GISN laboratories found no oseltamivir - resistant H1N1 viruses in isolates from Japan and Europe, and less than 1% prevalence in H1N1 isolates from the USA.

In addition to Norway, several other countries in Europe and North America have found an elevated prevalence of oseltamivir-resistant viruses this season (Table). However, insufficient data are available at present to determine the full geographic scope, origins, or patterns of transmission of these oseltamivir resistant H1N1 viruses.

WHO is collecting global data about this phenomenon from multiple laboratories participating in GISN. Data for European countries participating in EISS were provided by the EISS and VirGil project. WHO would like to thank all countries, virologists, clinicians and others for contributing data.

This summary table will be updated regularly as new data and reports become available.

Oseltamivir resistance results were obtained with using phenotypic and/or genotypic analysis.

WHO region	Location	Isolates tested	Resistant Oseltamivir
AMRO	Canada	128	8 (6%)
	El Salvador	1	0
	Honduras	2	0
	United States of America	356	29 (8%)
	Mexico	6	0
AMRO Total		493	37 (8%)
EURO	Austria	41	3 (7%)
	Denmark	46	2 (4%)
	Finland	11	3 (27%)
	France	207	80 (39%)
	Germany	224	20 (9%)
	Greece	30	2 (7%)
	Hungary	5	0
	Italy	61	0
	Latvia	5	0
	Netherlands	43	9 (21%)
	Norway	95	63 (66%)
	Portugal	6	2 (33%)
	Slovakia	5	0
	Slovenia	1	0
	Spain	52	0
	Sweden	13	1 (8%)
	Switzerland	30	4 (13%)
	United Kingdom	275	26 (9%)
	Russian Federation	1	0
	Belgium	3	1 (33%)
Czech Republic	7	0	
Luxembourg	154	39 (25%)	
Ireland	29	3 (10%)	
EURO Total		1344	258 (19%)

WPRO	Australia	66	2* (3%)
	China HongKong	116	11 (9%)
	Japan	100	5 (5%)
	New Zealand	88	0
	Guam	16	0
	Mongolia	4	0
	Republic of Korea	42	0
	Malaysia	9	0
	Philippines	37	0
	Singapore	5	0
WPRO Total		483	18 (4%)
SEARO	Thailand	10	0
SEARO Total		10	0
AFRO	Algeria	2	0
	Senegal	16	0
AFRO Total		18	0
Grand Total		2348	313 (13%)

*probably imported cases

Abbreviations: EISS - European Influenza Surveillance Scheme; GISN - Global Influenza Surveillance Network. VirGil - a European Network of Excellence aimed at combating viral resistance to treatments