

### Influenza A(H1N1) virus resistance to oseltamivir - Last quarter 2007 to 7 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](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 elevated prevalences 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 in the table below were provided by the EISS and ViRgil project.

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	Country, area or territory	No. of H1N1 isolates tested	No.(%) of isolates resistant to oseltamivir
AFRO	Algeria	2	0
	Senegal	16	0
<b>AFRO</b>		<b>18</b>	<b>0</b>
AMRO	Canada	128	8 (6%)
	El Salvador	1	0
	Honduras	2	0
	Mexico	6	0
	United States of America	179	15 (8%)
<b>AMRO Total</b>		<b>316</b>	<b>23 (7%)</b>
EURO	Austria	20	0
	Czech Republic	8	0
	Denmark	10	1 (10%)
	Finland	11	3 (27%)
	France	208	81 (40%)
	Germany	82	7 (9%)
	Greece	18	2 (11%)
	Hungary	5	0
	Italy	45	0
	Latvia	5	0
	Netherlands	16	1 (6%)
	Norway	66	42 (64%)
	Portugal	6	2 (33%)
	Slovakia	5	0
	Slovenia	1	0
	Spain	51	0
	Sweden	13	1 (8%)
	Switzerland	10	0
	United Kingdom	181	12 (7%)
<b>EURO Total</b>		<b>761</b>	<b>152 (20%)</b>
SEARO	Thailand	8	0
<b>SEARO Total</b>		<b>8</b>	<b>0</b>
WPRO	Australia	36	2* (6%)
	China, Hong Kong SAR	67	5 (7%)
	Japan	71	0
	Republic of Korea	27	0
	Mongolia	4	0
	New Zealand	88	0
<b>WPRO Total</b>		<b>293</b>	<b>7 (4%)</b>
<b>Grand Total</b>		<b>1396</b>	<b>89 (6%)</b>

\*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