



Evaluation of the EuroFlu Bulletin

Report Summary

Address requests about publications of the WHO Regional Office for Europe to:

Publications

WHO Regional Office for Europe

Scherfigsvej 8

DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office web site (<http://www.euro.who.int/pubrequest>).

© **World Health Organization 2010**

All rights reserved. The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. The views expressed by authors, editors, or expert groups do not necessarily represent the decisions or the stated policy of the World Health Organization.

CONTENTS

Contributors	2
Summary and key findings	2
Introduction	3
Results 4	
EuroFlu Bulletin Survey	4
Reporting frequency by Member States to EuroFlu	7
EuroFlu website hits	8
Conclusions	10

Contributors

WHO regional Office for Europe

Dr. Caroline Sarah Brown

Dr. Dmitriy Pereyaslov

Dr. Eleni Antoniadou

Dr. Tamara Meerhoff (as temporary adviser to WHO)

MD. Liana Martirosyan (as temporary adviser to WHO)

Summary

During February and March 2010, the WHO Regional Office for Europe (WHO/Europe) carried out a survey among users of the EuroFlu Bulletin, reviewed reporting frequency by Member States of the WHO European Region during the past year, and assessed the frequency of use indicated by the EuroFlu website traffic (i.e. website "hits" or visits). Overall, the results of this evaluation confirm the status of the EuroFlu Bulletin as a key WHO/Europe publication and endorse the use of the EuroFlu platform as an important tool to improve influenza surveillance in the Region.

Introduction

The WHO Regional Office for Europe (WHO/Europe) has published the regional EuroFlu Bulletin¹ on a weekly basis since February 2009². The Bulletin has, therefore, covered the entire course of pandemic (H1N1) 2009, thus far. The regional surveillance encompassed in the Bulletin aims to help reduce influenza morbidity and mortality in the European Region by collecting and exchanging timely information about influenza. Additionally, the surveillance contributes to the annual determination of vaccine content, provides relevant information to health professionals and the general public, and contributes to the response to pandemic (H1N1) 2009, on both a regional and country level. Member States enter data to EuroFlu either directly or through Tessy³ (EU and EEA Member States). In addition to contributing to the regional EuroFlu Bulletin, these data are also provided to WHO headquarters and incorporated into the global weekly pandemic surveillance updates⁴.

The EuroFlu Bulletin is available in both English and Russian and can be accessed at www.euroflu.org. In addition to being publicly available on the EuroFlu website, member countries automatically receive the weekly update on the influenza situation as soon as it becomes available. Interested individuals can also sign up to receive the EuroFlu Bulletin email notification, which provides an email with the Bulletin title and link as soon as it is published. Figure 1 presents an example of a map illustrating influenza activity, published in the EuroFlu Bulletin for week 45/2009. In addition to maps, the Bulletin provides a summary text of the situation in the European Region for that week, which includes a virological update, as well as a table that provides country-specific data and charts/graphs.

By February 2010, after nearly a year of weekly publication, the EuroFlu Bulletin had established itself as a key WHO/Europe publication. All Member States of the Region with influenza surveillance systems in place at the start of the pandemic had reported data regularly since February 2009 and throughout the course of the pandemic, including the normal inter-season period (weeks 20-40/2009). This helped make the Bulletin the most frequent and detailed regional situation analysis published by WHO/Europe since the emergence of the pandemic.

At the one-year mark of the EuroFlu Bulletin, WHO/Europe undertook the task of performing an evaluation among EuroFlu Bulletin users, in order to determine its effectiveness. This evaluation took the form of two questionnaires, designed to collect information on use of the Bulletin, gauge the level of satisfaction among users, and gather suggestions for areas where the Bulletin can be enhanced. The overarching goal of the evaluation was to determine ways to improve the Bulletin's content and to increase use. The evaluation will also help WHO/Europe understand how it can best maintain the input of high quality data to EuroFlu by the Member States.

In addition to the survey, two other tools were used to evaluate the EuroFlu bulletin: the frequency of reporting by Member States and the number of website hits for the EuroFlu website.

The first portion of this report presents the results of the survey distributed to users, the second part covers the analysis of reporting frequency by the Member States, and the third part presents an analysis of the website traffic.

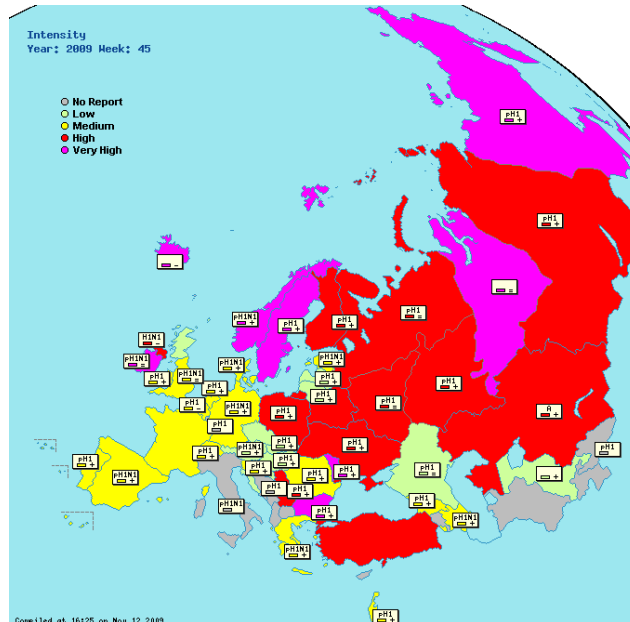
¹ WHO European Influenza Surveillance Portal (EuroFlu) [web site]. WHO Regional Office for Europe, (<http://www.euroflu.org/index.php>).

² From February to June, 2009, the Regional bulletin was published jointly with ECDC.

³ European Influenza Surveillance Network (EISN) [web site]. European Centre for Disease Prevention and Control (ECDC), (<http://www.ecdc.europa.eu/en/activities/surveillance/EISN/Pages/home.aspx>).

⁴ Pandemic (H1N1) 2009 - update 85, WHO Global Alert and Response Programme (GAR) [web site]. Geneva, World Health Organization (http://www.who.int/csr/don/2010_01_29/en/index.html)

Figure 1. The intensity of influenza activity and dominant type of virus as published in the Weekly Electronic Bulletin of week 45/2009.



A = Dominant virus A
H1N1 = Dominant virus A(H1N1)
H3N2 = Dominant virus A(H3N2)
H1N2 = Dominant virus A(H1N2)
B = Dominant virus B
A & B = Dominant virus A & B

= : stable clinical activity
+ : increasing clinical activity
- : decreasing clinical activity

Low = no influenza activity or influenza at baseline levels
Medium = usual levels of influenza activity
High = higher than usual levels of influenza activity
Very high = particularly severe levels of influenza activity

No activity = no laboratory-confirmed case(s) of influenza, or evidence of increased or unusual respiratory disease activity.
Sporadic = isolated cases of laboratory confirmed influenza infection
Localized = limited to one administrative unit of the country (or reporting site) only.
Regional = appearing in multiple but <50% of the administrative units of the country (or reporting sites).
Widespread = appearing in ≥50% of the administrative units of the country (or reporting sites).

Section I: EuroFlu Bulletin Survey

A total of 1471 individuals receive the Bulletin information each week. These include the Member States' influenza national focal points (NFP), who have been responsible for providing data, individuals who have subscribed to receive the EuroFlu bulletin alert email, and the influenza section of the Health Security Committee (HSC) of the European Commission.

WHO/Europe conducted the survey portion of the evaluation process in two steps. Initially, an email sent to all users explained the evaluation plan and its objective, then asked recipients to complete a short online survey (Part 1) to determine their profile. Part 1 also asked respondents whether they would be willing to complete a second survey (Part 2) on the perceived quality of the EuroFlu bulletin. This first email, sent between 23 February and 2 March, contacted a total of 1281 EuroFlu Bulletin users, of which 116 persons (9%) from 42 countries responded (105 English readers and 11 Russian readers). The majority of respondents (86%) came from the WHO European Region⁵, with additional respondents from several other regions of the world (Brazil, Canada, China, Taiwan, USA). These 116 individuals made up the group of respondents for Part 1 of the survey.

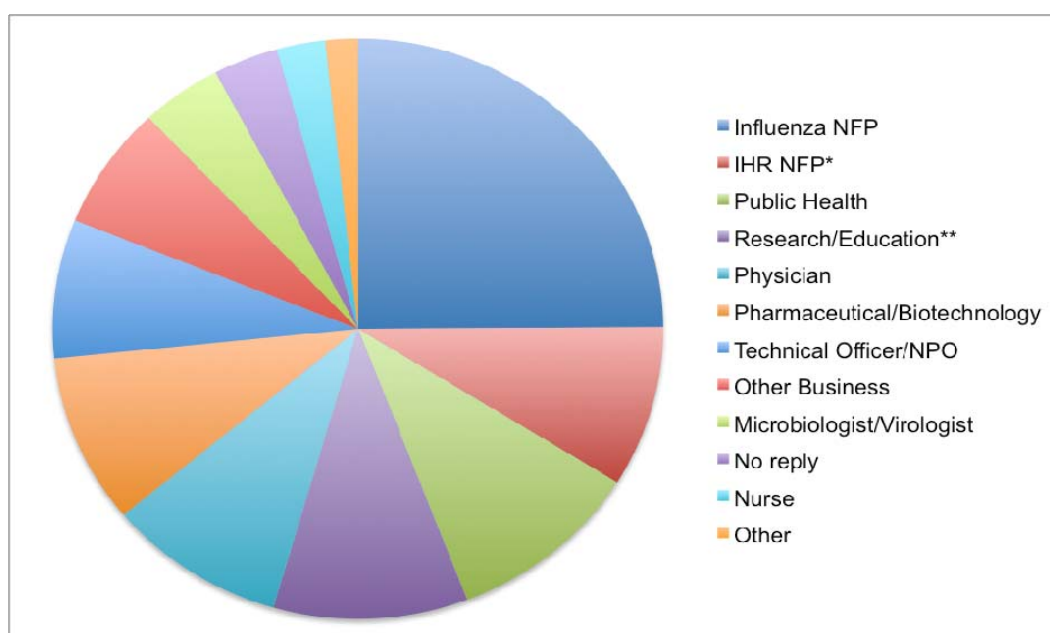
⁵ Member States of the WHO Regional Office for Europe [web site] last updated 24 March 2010. Copenhagen, WHO Regional Office for Europe. (<http://www.euro.who.int/AboutWHO/About/MH>)

PART 1: Thirty-nine respondents (34%) were identified as National Focal points (NFP), including both NFP for influenza surveillance and for the IHR⁶. Other users identified their employment as being with public health institutes, within research and education settings, as physicians and within the pharmaceutical/biotechnology industries (Figure 2).

The majority of respondents (53%) have read the Bulletin for more than one year, with 85% reading the English version, 7% reading in Russian, and 7% reading both the English and Russian text. Sixty-four percent of respondents read the Bulletin every week, 22% read it twice a month, and 13% read it once a month less.

Out of these 116 responses, a total of 73 individuals (63%) indicated they were willing to participate in the second, more detailed part of the Bulletin evaluation survey and provided their email address for this purpose.

Figure 2. Pie chart presenting the occupational sector of the respondents (n=116)



* The IHR NFP may also be a focal point for influenza surveillance

** Research/Education includes education, university, scientist, student and researcher

PART 2: The second survey contacted a total of 68 individuals, of which 30 (28 English and 2 Russian readers) responded. The profile of the respondents for Part 2 of the survey was similar to that of the Part 1 respondents. The Part 2 respondents were, however, more frequent readers of the Bulletin (86% were weekly readers in Part 2 versus 64% in Part 1) and were more apt to have been reading the Bulletin for more than a year (72% in Part 2 versus 53% in Part 1). While the proportion of persons designated as national focal points was slightly lower for Part 2 of the survey (28% versus 34%), the proportion of the students/researchers was higher (14% versus 6%). The majority of respondents (93%) indicated that they use the Bulletin to learn about the situation in countries other than their own within the European Region.

Out of those respondents who read the Bulletin less than once a month, 57% cited their lack of regular use as a result of being too busy with other things. Others reported that they would be more frequent readers if the Bulletin contained more information on vaccines (14%) and on severe diseases (29%).

⁶ International Health Regulations (2005) <http://www.who.int/ihr/9789241596664/en/index.html>

Bulletin use and overall satisfaction

Part 2 of the survey asked users to indicate which parts of the Bulletin they used. Most respondents use all portions of the Bulletin, with 93% reporting use of the map, 80% reporting use of the text, and 80% reporting use of the country data table. The pie charts received less frequent use, with only 45% of respondents indicating regular use.

Opinion of maps: Ninety percent of respondents indicated they were very satisfied or satisfied with the Bulletin maps, in general. In particular, respondents were satisfied with the maps of intensity and geographic spread, while only 74% were satisfied with the impact maps. According to the survey, Bulletin users felt that the data was insufficient for these particular maps, that criteria may differ among countries and may depend on the capacity of medical services in specific countries. Very few respondents felt that the Bulletin contains too many maps and most found the quantity of maps very useful.

Suggestions for maps:

"Need for increased precision and rethinking of definitions for the impact indicator"

"Prefer the geographical spread as the preselected indicator"

Opinion of written content of the Bulletin: Nearly all respondents (>90%) were very satisfied or satisfied with the readability and clarity of the text.

Suggestions for text:

"Simplify the message and add more visual information, e.g. in the form of a table"

"Add links to sites on the influenza situation in the world and also to the animal field of influenza"

"Provide more information on the details of antigenic and genetic characterizations of the circulating strains"

Opinion of table: More than 90% of respondents felt very satisfied or satisfied with the presentation of the Bulletin table, graphs and pie charts. The respondents were also generally satisfied (87-90%) with the virological data presentation and the antigenic and genetic strain characterization.

Suggestions for table:

"The presence of more non-sentinel data would be appreciated, e.g. for the number of swabs, percentage positive and dominant type"

"Present age distribution of laboratory confirmed cases, as well, rather than ILI/ARI"

"Add phylogenetic trees with the circulating strains and graphs showing the antigenic evolution of the circulating strains"

"It would be better to have the antigenic and genetic pie charts in one screen"

Overall opinion of the Bulletin: Fifty-seven percent of respondents indicated they were satisfied with the Bulletin, as it is, and that it does not need to be further developed. Forty-seven percent indicated that they would like more information included on influenza vaccines, 33% would like to have more information on other respiratory viruses (RSV, hMPV, parainfluenza, adenovirus, bocavirus, rhinovirus and possibly legionella and atypical bacteria) included, and 30% would like the Bulletin to include more information on severe disease.

Additional comments:

" Include movie or time series maps to demonstrate the geographic spread over time"

"Weekly intensity monitoring is very important and it would be fantastic if the data would be shown in current week, not past"

" Keep up the good work"

" I think the Bulletin is timely and appropriate"

Respondents reported using the Bulletin for different purposes. These ranged from using the Bulletin as a weekly report to help plan vaccination, for diagnostic and medicine sales purposes, to help make predictions and alerts for hospitals, and for communication with stakeholders, including input to national bulletins.

Thirty-seven percent of respondents indicated that they use other Bulletins (EISN Bulletin⁷, HPA Bulletin⁸, Robert Koch Institute Bulletin⁹, Finnish Bulletin¹⁰ and FluNet¹¹) to obtain information in the WHO European region. The EuroFlu Bulletin was the one most often used by 50% of respondents, while 20% used another Bulletin

more frequently. According to survey results, the strengths of the EuroFlu Bulletin were its inclusion of information for the whole European Region and the detailed information it offers on epidemiology and virology.

Suggestions for improvement

In response to the suggestions from survey respondents, WHO/Europe will consider:

- implementing ILI/ARI as a percentage of encounters, as opposed to per 100 000, during the upcoming 2010/2011 season and applying this percentage to the small number of countries that report encounters;
- planning a survey of surveillance systems and criteria for reporting on indicators, which will improve understanding of the health services within the countries and will allow normalization of data and comparisons between countries;
- adding links to other bulletins providing information on the influenza situation in the world, as well as links to animal sites;
- reviewing the virological update section, with a view to simplifying the message, e.g. through using graphs or a table; and
- introducing new information to be reported, which will be discussed through face-to-face meetings/training where possible.

Section II: Reporting frequency by Member States to EuroFlu

WHO/Europe conducted an evaluation of reporting frequency by EuroFlu members to the web-based system in order to determine whether countries managed to report data during the pandemic and how newly reporting countries performed.

WHO/Europe investigated the reporting frequency by country for: 1) qualitative data (geographic spread, intensity and impact; 2) quantitative data (ILI or ARI rate); and 3) virological data between 1 February 2009 and 20 April 2010, covering 63 weeks. The overall completeness of reporting was good. The reporting frequency for the qualitative data per week was calculated and the overall median of completeness of reporting was 78%, while for the quantitative reporting it was 70%. For the virological reporting the median was slightly higher at 81%. The high frequency of reporting even during the pandemic shows the resilience of the network.

⁷ <http://www.ecdc.europa.eu/en/activities/surveillance>

⁸ <http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1240732817665?p=1240732817665>

⁹ http://www.rki.de/DE/Content/Infect/EpidBull/epid_bull_node.html

¹⁰ <http://www.virology.utu.fi/mpt/viikko/index>

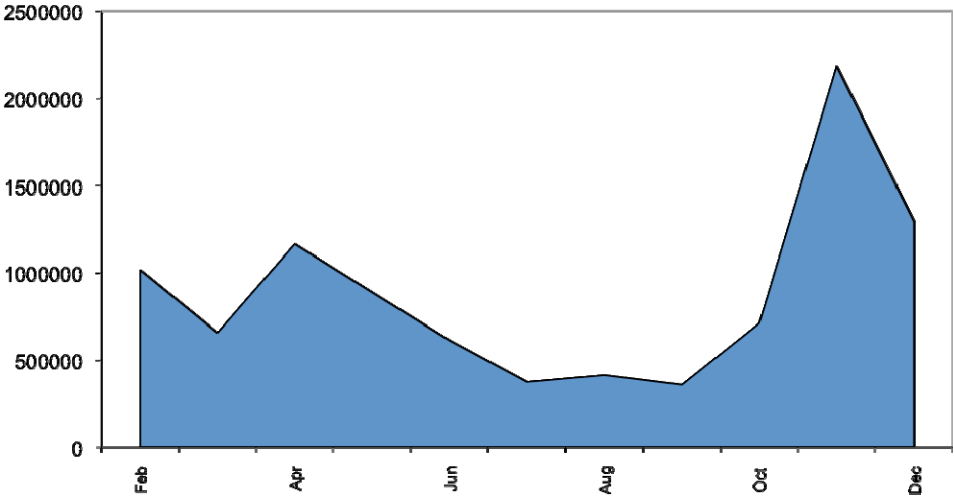
¹¹ <http://gamapserver.who.int/GlobalAtlas/home.asp>

The majority of the 24 total non-EU countries only began data reporting to EuroFlu as of February 2009. Of the new reporting countries, six have reported data over 70% of the weeks. Some countries started to report later in the season, and this may have resulted in less complete reporting. However, the reporting of any data is encouraged and highly valuable in the pandemic situation.

Section III: EuroFlu website traffic

The number of website hits on the EuroFlu site provides an indicator of the use of the website and Bulletin. Daily and monthly website hits were monitored automatically by the EuroFlu server. WHO/Europe reviewed the monthly website traffic for the time period from February 2009 to December 2009. The monthly hits over this period showed a peak at the end of April 2009 and beginning of May 2009, with more than 1 million hits in that month. The website received more than 2 million visits during the epidemic in November 2009 (Figure 3).

Figure 3. Monthly website hits in the period Feb 2009-Dec 2009



In order to determine whether there were more website hits in the year with the pandemic virus circulating WHO/Europe compared these numbers to four previous seasons (Table 1).

Table 1. Total number of hits during the season and inter season periods (2005-2010)

Season*	Total N hits	Inter Season**	Total N hits
2005-06	6 222 696	2006	811 219
2006-07	4 740 607	2007	1 002 753
2007-08	5 957 862	2008	1 280 262
2008-09	7 695 553	2009	1 758 153
2009-10	5 883 749	2010	-

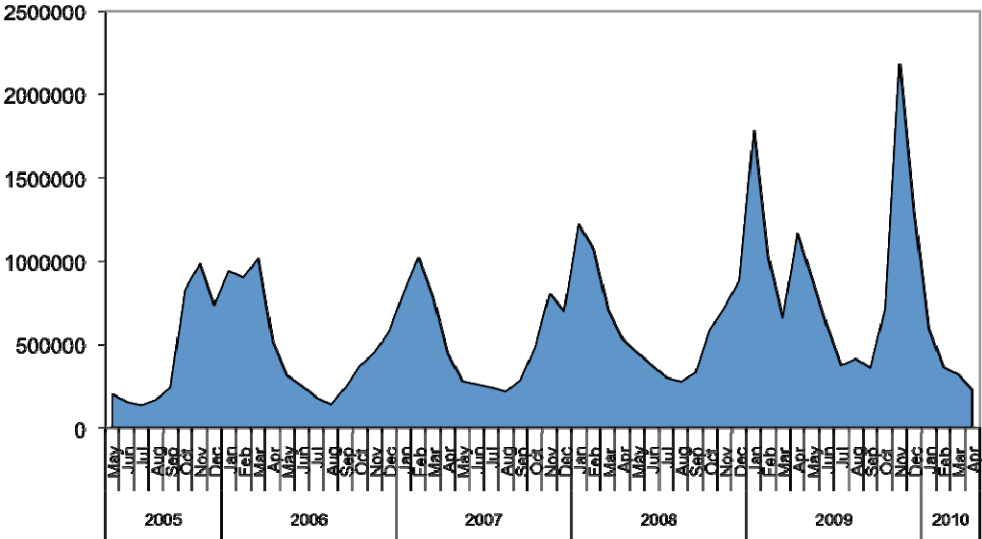
* Number of hits in the period 1 October - 31 May

** Number of hits in the period 1 June - 31 September

The total number of monthly hits during the 2009-10 winter season was lower than during the 2008-09 season. However, the website traffic during the height of the pandemic peak does exceed the previous seasons (Figure 4). The overall lower number of hits may be explained by the early start of the epidemic for some countries over the preceding summer period. This is also reflected in the large number of hits in the inter-season period of 2009, where more than 1,7 million hits were recorded. This was considerably more traffic than recorded in other inter-season periods. Furthermore, influenza activity peaked very early this year and for many countries the period of high activity was relatively short.

The number of hits presented the same pattern as the influenza activity. The graphs presenting daily hits showed a sharp increase in hits by the end of April, when there was a great deal of attention to the recent detections of pandemic influenza virus. The data on web traffic shows that the largest number of monthly hits since 2005 was in November and December 2009, when most countries experienced their influenza peak and most pandemic (H1N1) 2009 viruses were reported. Overall, an increasing trend in the number of hits is observed for the last five years for both the inter-season and season periods (Figure 4). This indicates an increase in use of the website over the past years.

Figure 4. Monthly hits from 1 May 2005- 20 April 2010



Conclusions

The evaluation of the EuroFlu Weekly Bulletin provided valuable information on the use of the Bulletin and the satisfaction level of users. The two-part survey among users allowed WHO/Europe to determine that, overall, users of the EuroFlu Bulletin feel satisfied with the Bulletin in its current form and have found many uses for it. But these surveys also provided valuable feedback and suggestions that will help WHO/Europe to improve the Bulletin going forward.

By reviewing the frequency of reporting by Member States, WHO/Europe was able to determine that EuroFlu members generally reported weekly data on a frequent basis; half of the countries have reported data for approximately 70% of the weeks. The high frequency of reporting even during the pandemic confirms the resilience of the EuroFlu network. For the coming season, WHO/Europe aims to further improve reporting and to help Member States further develop and improve surveillance.

Analysis of the EuroFlu website traffic indicates frequent use of the website, in particular when the first detections of the new influenza H1N1 virus were reported and during the peak of the H1N1 pandemic in November 2009.

Overall, the results of this evaluation confirm the status of the EuroFlu Bulletin as a key WHO/Europe publication and endorse the use of the EuroFlu platform as an important tool to report and improve influenza surveillance in the Region.