Pandemic Influenza Preparedness Framework ("PIP Framework")
Advisory Group Annual Report to the Director-General
Under PIP Framework Section 7.2.5

2015 Annual Report
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## Acronyms and abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>AG</td>
<td>Advisory Group</td>
</tr>
<tr>
<td>AOW</td>
<td>area of work</td>
</tr>
<tr>
<td>CVV</td>
<td>candidate vaccine virus</td>
</tr>
<tr>
<td>CPA</td>
<td>critical path analysis</td>
</tr>
<tr>
<td>EQAP</td>
<td>External Quality Assessment Programme</td>
</tr>
<tr>
<td>GAP</td>
<td>Global Action Plan for Influenza Vaccines</td>
</tr>
<tr>
<td>GSD</td>
<td>genetic sequence data</td>
</tr>
<tr>
<td>GISRS</td>
<td>Global Influenza Surveillance and Response System</td>
</tr>
<tr>
<td>IVPP</td>
<td>influenza viruses with human pandemic potential</td>
</tr>
<tr>
<td>IVTM</td>
<td>Influenza Virus Traceability Mechanism</td>
</tr>
<tr>
<td>NIC</td>
<td>National Influenza Centre</td>
</tr>
<tr>
<td>PC</td>
<td>Partnership Contribution</td>
</tr>
<tr>
<td>PIP</td>
<td>pandemic influenza preparedness</td>
</tr>
<tr>
<td>PIPBM</td>
<td>pandemic influenza preparedness biological material</td>
</tr>
<tr>
<td>PCR</td>
<td>polymerase chain reaction</td>
</tr>
<tr>
<td>SMTA</td>
<td>Standard Material Transfer Agreement</td>
</tr>
<tr>
<td>TEWG</td>
<td>Technical Expert Working Group</td>
</tr>
<tr>
<td>TWG</td>
<td>Technical Working Group</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY


Virus sharing

Under the PIP Framework, Member States are expected to share PIP biological materials, which include influenza viruses with human pandemic potential, with the Global Influenza Surveillance and Response System (GISRS) -- WHO’s network of influenza laboratories. The number of National Influenza Centres in the network increased from 136 laboratories in 106 countries in 2011 to 143 laboratories in 113 countries; recent additions were the United Republic of Tanzania and Zambia. The Institute Pasteur in Cambodia was designated as the 13th laboratory in the network’s H5 Reference Laboratory.

Sharing of viruses is facilitated by the WHO Shipping Fund Project which supported 118 shipments of both seasonal viruses and influenza viruses with human pandemic potential from 83 laboratories in 74 countries, areas and territories to a GISRS Collaborating Centre or H5 Reference Laboratory. The AG notes that from 1 August 2014 through 31 July 2015, a total of 22 IVPP of human origin were recorded in the IVTM and that this represents a 71% decrease compared to the previous 12 months when 77 human IVPP were recorded. The AG notes that the decrease in the sharing of PIPBM seems to reflect different levels of understanding of the virus sharing expectations under Section 5.1.1 of the PIP Framework (sharing from “all cases”) and supports the Secretariat’s initiative to work with GISRS laboratories to clarify the expectation.

Benefit sharing

The two principal benefit sharing mechanisms of the Framework are the Standard Material Transfer Agreement 2 (SMTA 2) and the Partnership Contribution. The SMTA 2 is a legally binding contract between WHO and entities that receive PIP biological materials from GISRS, including manufacturers, as well as biotechnology firms, research institutions and academic institutions. During the Annual Report period, 25 new SMTAs 2 were concluded with research or academic institutions.

The Partnership Contribution is an annual payment to WHO -- currently set at USD 28 M per year -- from manufacturers that use GISRS. WHO received USD 26.9 M in 2014. Partnership Contribution resources have been distributed across 43 countries to strengthen capacities in laboratory and surveillance; burden of disease; regulatory capacity building; deployment; and risk communications. Since January 2013, the pace of implementation has increased and activities are beginning to show some results.

The Global Action Plan for Influenza Vaccines has catalysed an increase in the annual global vaccine production capacity of seasonal vaccine from 500 million doses in 2006 to 1503 million doses in 2013; it is anticipated to grow to at least 1700 million by 2016. This seasonal capacity translates to a potential pandemic vaccine capacity of at least 4509 million doses annually.

The AG recognizes the Secretariat’s efforts to successfully conclude SMTAs 2 continue to be challenged by lack of knowledge about the PIP Framework among smaller companies; uncertainty about their ability to provide real-time donations because of other advance purchase agreements, and instances where companies do not offer reasonable benefit sharing commitments. The AG notes the communications and outreach efforts that have been undertaken with a view to increasing knowledge
about the PIP Framework, and the plan to provide briefings about the WHO prequalification process requirement to interested companies.

Governance

The PIP Framework and its Annexes will be reviewed by 2016 with a view to proposing revisions reflecting developments, as appropriate, to the World Health Assembly in 2017 through the Executive Board. The Director-General will convene a Special Session of the PIP Advisory Group in October 2015 to receive the views of Member States, industry and other stakeholders on the 2016 Review.
1 INTRODUCTION

The Pandemic Influenza Preparedness (PIP) Framework was adopted in May 2011 by the Member States of the World Health Organization (WHO) to help protect people everywhere from the potential devastation of an influenza pandemic. It is premised on two objectives to be pursued on an equal footing:

- improved sharing of influenza viruses with the potential to cause a human pandemic through the WHO-coordinated network of public health laboratories called the “Global Influenza Surveillance and Response System” (GISRS); and

- more predictable, efficient, and equitable access to the benefits that result from the sharing of viruses, notably vaccines and antiviral medicines.

Implementation of the Framework is a shared responsibility between WHO, countries, industry, civil society and other stakeholders. Each year the PIP Advisory Group (AG) submits a report to the Director-General on its evaluation of the implementation of the Framework.1 With the exception of GISRS-related data, the 2015 Annual Report of the PIP Framework AG covers the 12-month period beginning 1 October 2014 through 30 September 2015. To allow for continuous reporting and time for tabulation and analysis, GISRS-related data cover the 12-month period 1 August 2014 through 31 July 2015.2 The Report is organized into three sections: virus sharing, benefit sharing and governance. It addresses the seven topic areas specified for AG review in the Framework;3 these topics are indexed in Annex 1 of the Report.

As described in detail in this report, there have been notable achievements and challenges over the course of the last 12 months including:

Achievements

- Two new National Influenza Centres (NICs) were designated in Africa in the United Republic of Tanzania (November 2014) and Zambia (in September 2015), bringing the total number of NICs to 143. Additionally, the NIC at the Institute Pasteur in Cambodia was designated as the 13th H5 Reference Laboratory.
- The WHO Shipping Fund Project supported 118 shipments from 83 laboratories in 74 countries, areas and territories to a GISRS Collaborating Centre or H5 Reference Laboratory.
- A total of 259 laboratory staff from 69 countries, areas and territories were trained in the proper handling and packaging of infectious substances for international shipment. Of these 205 (79%) passed the certification exam and received a certificate.
- Negotiations to conclude Standard Material Transfer Agreements 2 (SMTAs 2) resulted in 26 additional SMTAs 2 with research or academic institutions.
- The number of Contributors to the Partnership Contribution (PC) increased from 30 manufacturers in 2013 to 36 in 2014. In 2014 WHO received contributions of approximately USD 26.9 million.

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1 As provided under PIP Framework, Section 7.2.5 and Annex 3, Section 2.6.
2 GISRS data in the 2014 Annual Report covered the 12-month period 1 August 2013 through 31 July 2014.
3 The seven areas specified in PIP Framework, Section 7.2.5 and Annex 3, Section 2.6 are: necessary technical capacities of the WHO GISRS; operational functioning of WHO GISRS; WHO GISRS influenza pandemic preparedness priorities, guidelines and best practices (e.g. vaccine stockpiles, capacity building); increasing and enhancing surveillance for H5N1 and other influenza viruses with human pandemic potential; the Influenza Virus Traceability Mechanism (IVTM); the sharing of influenza viruses and access to vaccines and other benefits; and the use of financial and non-financial contributions.
• The first PC annual report4 was issued in April 2015. National capacity building across five Areas of Work (AOW)5 began in mid-2014, and is being steadily scaled-up. The Critical Path Analysis (CPA),6 published in January 2015, outlined the scope and scale of the programme and explained why the five AOW are the focus of support. Activity funds have been distributed to all five AOW and across 43 target countries.
• A Technical Working Group (TWG) on the sharing of influenza genetic sequence data was established in April 2015 to propose optimal characteristics of a genetic sequence data (GSD) sharing system which is best suited to meet the objectives of the Framework. This work continues what was begun in 2013 under the PIP Advisory Group Technical Expert Working Group (TEWG).7
• An increased range of communications and outreach materials were developed for industry, Member States, GISRS, and civil society organizations among others. These included a video on the PC; the PIP Information Portal; and a bi-monthly e-newsletter. In addition, the Secretariat held bi-monthly informal teleconferences with industry and civil society organizations.
• Six new members joined the AG to replace one-third of the existing AG members and a new Vice-Chair was elected.

Challenges
• Virus sharing: Compared to the previous 12 months, shipments of PIP biological materials (PIPBM), as recorded in the Influenza Virus Traceability Mechanism (IVTM), i.e. the electronic database established under the Framework, have decreased. The Secretariat is working with GISRS laboratories to clarify virus sharing expectations under the Framework.
• SMTA 2: The Secretariat’s efforts to successfully conclude SMTAs 2 continue to be challenged by lengthy negotiations; companies’ unfamiliarity with the PIP Framework; small- and medium-size companies’ lack of experience with prequalification, export licenses, and associated logistics; and in some cases, an unwillingness to contribute appropriately.
• Partnership Contribution collection: Compared to the previous 12 months, fewer companies are completing the questionnaire to identify PC Contributors, despite enhanced outreach efforts.
• Partnership Contribution implementation: In some instances, competing public health priorities, notably the ongoing Ebola virus disease outbreak in west Africa, have hampered PC-supported national capacity building.

2 VIRUS SHARING

2.1 Global Influenza Surveillance and Response System

The WHO GISRS, in collaboration with animal health partners, monitors and analyses a range of zoonotic and potential pandemic influenza viruses as they emerge, and develops laboratory tests,

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4 See Pandemic Influenza Pandemic Framework Partnership Contribution Annual Report 2014
5 The five AOWs are: laboratory and surveillance; burden of disease; regulatory capacity building; planning for deployment; and risk communications.
6 See Pandemic Influenza Preparedness (PIP) Framework Critical Path Analysis From Detection to Protection
reagents and candidate vaccine viruses. This essential work for global pandemic preparedness is underpinned by timely sharing of influenza viruses as well as relevant virological, clinical and epidemiological information.

Risk assessments for non-seasonal influenza viruses are posted on a monthly or as-needed-basis to provide information about emerging threats. The current global situation is characterized by a number of trends including: an increase in the variety of animal influenza viruses co-circulating and exchanging genetic material, giving rise to novel strains; continuing cases of human A(H7N9) infections in China; and a surge of human A(H5N1) cases in Egypt.

The ready availability of zoonotic candidate vaccine viruses can facilitate the rapid development of vaccines that would be needed during a pandemic as well as assist in the production of pilot lots of vaccines and the conduct of clinical trials. WHO held an informal consultation in June – July 2015 to develop a global strategy and operational mechanisms for influenza vaccine response at the start of a pandemic. The outset of a pandemic is a challenging time as seasonal influenza may be circulating in some parts of the world and/or manufacturers may be in the midst of the production cycle for seasonal vaccine.

Expanding the GISRS network to increase global coverage is vital. In October 2014 the Institute Pasteur in Cambodia was designated as the 13th laboratory in the H5 Reference Laboratory Network. This is a well-placed asset as A(H5N1) viruses continue to circulate in Cambodia. Two new NICs were designated in Africa in the United Republic of Tanzania (November 2014) and Zambia (in September 2015). Although the network of NICs has grown from 136 laboratories in 106 countries in 2011 to the current 143 laboratories in 113 countries, significant gaps remain, especially in Africa.

Expert working groups play a key role in improving GISRS’ technical capacity and operational functioning. The WHO Working Group on Real-Time Polymerase Chain Reaction (RT-PCR) for the Detection and Subtyping of Influenza Viruses met in June 2015 to advise WHO on the best use of PCR testing in GISRS, taking into account new developments in PCR technology. The Working Group also provided guidance for the WHO External Quality Assessment Programme (EQAP). An Expert Working Group on Surveillance of Antiviral Susceptibility for GISRS met in June 2015 to provide advice on surveillance strategies and practical approaches taking into account current gaps and needs in the network.

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15 See http://www.who.int/influenza/vaccines/virus/candidates_reagents/home/en/.
WHO provides logistical, technical and financial support to facilitate efficient and timely sharing of influenza viruses and specimens. From 1 August 2014 through 31 July 2015, the WHO Shipping Fund Project supported 118 shipments of both seasonal viruses and influenza viruses with human pandemic potential IVPP from 83 laboratories in 74 countries, areas and territories to a GISRS Collaborating Centre or H5 Reference Laboratory at a cost of USD 192,341. GISRS organized 11 training workshops in the proper handling and packaging of infectious substances for international shipment in four WHO regions for 259 laboratory staff from 69 countries, areas and territories during this same period; 205 of the participants passed the certification exam. A training course on infectious substances shipping comprised of eight modules and translated into three languages is now available online16 as is guidance on the transport of infectious substances in general17 and influenza viruses in particular.18

Epidemiological parameters are critical components of overall pandemic risk assessment. Beginning in late 2014, several countries pilot tested potential indicators of pandemic influenza severity based on information which is collected in routine influenza surveillance. The Expert Working Group on Pandemic Influenza Severity Assessment met in June 2015 to review the findings and refine approaches to set severity-related thresholds. At the time of a pandemic, reliable estimates of the burden of influenza disease during annual epidemics can provide a baseline from which countries can gauge a pandemic’s impact in vulnerable communities. To assist countries in measuring disease burden, WHO published *A manual for estimating disease burden associated with seasonal influenza*19 in July 2015. With support from a technical advisory group, work is ongoing in this area. A consultation held in December 2014 considered how estimates of disease burden and the associated mortality and economic burden can be improved. Planning and training to support pilot testing of a tool to estimate economic burden occurred in July 2015. Such tools could be used to estimate pandemic-associated disease and economic burden in countries with baseline burden data.

Further information about the technical capacities and operational functioning of the WHO GISRS are found in Annex 2.

### 2.2 Influenza Virus Traceability Mechanism

Transfers of PIPBM are monitored through the IVTM.20 From 1 August 2014 through 31 July 2015, 156 PIPBM were sent and recorded in the IVTM (Table 1); 92 went to 24 non-GISRS laboratories. This represents a 38% decrease compared to the previous 12 months when 252 shipments of PIPBM were sent and recorded in the IVTM.

During 1 August 2014 through 31 July 2015, a total of 22 IVPP of human origin were recorded in the IVTM (Table 2). This represents a 71% decrease compared to the previous 12 months when 77 human IVPP were recorded. Additional information is found in the tables below.

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16 See *Infectious substances shipping training - a course for shippers* [http://www.who.int/ihr/i_s_shipping_training/en/](http://www.who.int/ihr/i_s_shipping_training/en/).
18 See *Instructions for the classification of influenza viruses and candidate vaccine viruses (CVVs) for transport purposes, 1 December 2014* [http://www.who.int/influenza/gisrs_laboratory/logistic_activities/20141201_shipment_cvvs.pdf?ua=1](http://www.who.int/influenza/gisrs_laboratory/logistic_activities/20141201_shipment_cvvs.pdf?ua=1).
19 See [http://apps.who.int/iris/bitstream/10665/178801/1/9789241549301_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/178801/1/9789241549301_eng.pdf?ua=1).
The decrease in PIPBM shared seems to reflect different levels of understanding of the expectation regarding the sharing of PIPBM from “all cases” (Section 5.1.1 PIP Framework). The Secretariat is working with GISRS laboratories to clarify the expectation.

Table 1: PIPBM sharing, 1 Aug 2014 - 31 July 2015

<table>
<thead>
<tr>
<th>Influenza subtypes</th>
<th>From 4 CCs/ERLs to</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 different GISRS labs</td>
<td>24 different non-GISRS labs</td>
</tr>
<tr>
<td>A (H2N2)</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>A (H3N2)v</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>A (H5N1)</td>
<td>44</td>
<td>49</td>
</tr>
<tr>
<td>A (H7N1)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>A (H7N2)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>A (H7N3)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>A (H7N9)</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>A (H9N2)</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>A (H9Subtype not resolved)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>64</strong></td>
<td><strong>92</strong></td>
</tr>
</tbody>
</table>

Table 2: Number of new records of PIPBM recorded in the IVTM, 1 Aug 2014 - 31 July 2015

<table>
<thead>
<tr>
<th>Influenza subtypes</th>
<th>Materials</th>
<th>Human origin materials</th>
<th>Viruses</th>
<th>Viruses human origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (H5N1)</td>
<td>29</td>
<td>16</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>A (H7N3)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>A (H7N9)</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>A (H9N2)</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A (H9Subtype not resolved)</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>22</strong></td>
<td><strong>13</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

2.3 Genetic sequence data under the PIP Framework

Under the PIP Framework, GISRS laboratories are responsible for sequencing influenza viruses with pandemic potential and uploading those sequences to public-domain or public-access databases in a timely manner. While GSD is covered in the Framework, its handling remains unresolved. The Framework requested that the Director-General consult the AG on the best process for further discussion and resolution of issues relating to the handling of GSD from influenza viruses with human pandemic potential. A Technical Expert Working Group (TEWG), established in October 2013 to

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21 See, for example, sections 5.2 and Annexes 4 and 5.
provide background and technical information to the AG, submitted its final report in October 2014.\textsuperscript{22} Upon consideration of this report, as well as technical input from database representatives at its October 2014 meeting, the AG recommended that work to identify “…the optimal characteristics of a system for the handling of IVPP GSD under the Framework, including consideration of data sharing systems that are best suited to meet the objectives of the Framework …” should be undertaken.

In line with this advice from the AG, two approaches are currently being pursued: First, as part of this effort, in 2015, the Secretariat collaborated with the World Federation for Culture Collections and the World Data Center for Microorganisms and developed a prototype search engine that could be used to monitor the use of IVPP GSD in end-products. In 2015, the Secretariat developed a draft “options paper” for monitoring the use of IVPP GSD. This draft was shared with the AG as well as industry and other stakeholders in September 2015 in preparation for discussions during the October 2015 AG Meeting.

Second, the Secretariat undertook a review of systems currently in place for the sharing of IVPP GSD, including conducting a survey of data providers and users through a detailed questionnaire, to provide the AG a current understanding of how IVPP GSD is generated, shared and used. The AG then established a TWG was established in April 2015 to propose the optimal characteristics of a GSD-sharing system which is best suited to meet the objectives of the Framework. The TWG met for the first time by teleconference on 27 July and in Geneva on 29-30 September to develop a draft document for the PIP AG.

3 BENEFIT SHARING

3.1 Status of agreements entered into with industry

Discussions are on-going with five Japanese vaccine manufacturers and one company that received a grant under the Global Action Plan for Influenza Vaccines (GAP),\textsuperscript{23} as well as with 12 manufacturers of other products needed during a pandemic. The Secretariat is preparing to start negotiations with several other vaccine manufacturers in late 2015, including seven in China. It is expected that at least five agreements with manufacturers of vaccines and/or antivirals will be ready for signature by December 2016. Formal negotiations have started with two diagnostic companies and it is expected that six agreements with manufacturers of products other than vaccines or antivirals will be ready for signature by April 2016 with an additional six ready by December 2016. Since 1 October 2014 a total of 26 additional agreements with research or academic institutions have been signed;\textsuperscript{24} several of these entities have offered to provide benefits such as laboratory and surveillance capacity building. Work is under way to determine how to operationalize these offers.

The Secretariat’s efforts to successfully conclude SMTAs continue to be challenging. Negotiations have proven to be lengthy. Substantial time is spent providing information about the PIP Framework to smaller companies that are not familiar with it. Additionally, the Secretariat must engage in considerable discussion with many medium- and small-size companies that only produce for domestic markets and do not have experience with prequalification, export licenses and associated logistics before negotiations can advance. Prequalification represents a significant additional cost for such companies. Moreover, if companies have advance purchase agreements with host governments and other advance purchase holders, available real time production capacity will be limited during a pandemic, and governments may need to be consulted. Finally, there are instances where companies

\textsuperscript{22} See \url{http://www.who.int/influenza/pip/advisory_group/PIP_AG_Rev_Final_TEWG_Report_10_Oct_2014.pdf}.
\textsuperscript{23} See \url{http://www.who.int/influenza_vaccines_plan/en/}.
\textsuperscript{24} See \url{http://www.who.int/influenza/pip/benefit_sharing/smta2_signed/en/}.
do not offer reasonable benefit sharing commitments. The Secretariat has developed mitigation measures to address these challenges.

### 3.2 Partnership Contribution collection

A methodology and formula to calculate how much each Contributor should pay,25 as well as standard operating procedures for the PC26, were previously established. The PIP Secretariat issues an annual questionnaire to identify entities that should contribute to the total annual PC. Collection results for 2013-2015 are summarized in Table 3.

Since 2013 the PIP Secretariat has progressively identified more entities to contact each year. To facilitate accurate completion of the Questionnaire, the Secretariat has clarified the concept of “use of GISRS” and modified the format of the Questionnaire. Despite these efforts, fewer responses have been received in 2015. This is thought to be due in large part to ’Questionnaire fatigue’ and efforts to mitigate this issue are under consideration.

Experiences in collecting contributions have highlighted some challenges faced by companies, notably the ability to pay contributions in a single payment. Following guidance from the AG, the PIP Secretariat gave companies the option of paying in instalments, as necessary. To improve understanding of the PC collection process, the 2015 PC questionnaire was linked to a new explanatory video.27

<table>
<thead>
<tr>
<th>Questionnaire year</th>
<th>No. of entities contacted</th>
<th>No. of Questionnaire responses</th>
<th>No. of Contributors identified</th>
<th>No. of Contributors that paid</th>
<th>Amount received in USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>194</td>
<td>89</td>
<td>32</td>
<td>30</td>
<td>27,538,586 (as of 23 Sept 2015)</td>
</tr>
<tr>
<td>2014</td>
<td>250</td>
<td>102</td>
<td>43</td>
<td>36</td>
<td>26,933,271 (as of 23 Sept 2015)</td>
</tr>
<tr>
<td>2015</td>
<td>256</td>
<td>87</td>
<td>42</td>
<td>In progress</td>
<td>In progress</td>
</tr>
</tbody>
</table>

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3.3 Partnership Contribution implementation

Pandemic preparedness

The Ebola crisis in west Africa demonstrated the importance of preparedness as a precursor for effective outbreak response. Based on the Pandemic Influenza Preparedness Framework Partnership Contribution Implementation Plan 2013-2016, capacity gaps have been identified, implementation plans developed, and since mid-2014, national capacity building across the five AOW has begun and is being steadily scaled-up. The CPA, published in January 2015, outlined the scope and scale of the program and explained why the five AOW are the focus of support. The CPA also serves as a framework for the long term capacity building work required to build sustainable global pandemic preparedness.

The first PC annual report was issued in April 2015 and covered the period January through December 2014. Activity funds have been distributed to all five AOW (Table 4) and across 43 target countries. As part of the commitment to transparency, a web portal was established and is updated quarterly with financial and technical progress data. Key implementation achievements are summarized in Annex 3.

Table 4. Allocation of Partnership Contribution funds by area of work, as of 30 September 2015

<table>
<thead>
<tr>
<th>Area of work</th>
<th>Allocated (M USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory and surveillance</td>
<td>22.37</td>
</tr>
<tr>
<td>Burden of disease</td>
<td>0.83</td>
</tr>
<tr>
<td>Regulatory capacity building</td>
<td>1.99</td>
</tr>
<tr>
<td>Risk communication</td>
<td>3.96</td>
</tr>
<tr>
<td>Planning for deployment</td>
<td>1.54</td>
</tr>
</tbody>
</table>

PIP PC activities are beginning to improve pandemic preparedness. However, implementation challenges remain, in particular the continuing repercussions of the Ebola crisis in the African Region. In addition, in some Regions there are competing public health priorities that result in a lower priority for implementing PIP activities.

PIP is a cross-cutting programme with strong synergies with other public health programmes. Ensuring that PIP outcomes are timely, effective and sustainable will require consolidation of PIP activities with renewed efforts to align the PIP Framework with other relevant mechanisms including the International Health Regulations (2005), and the GAP initiative.

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28 The Framework specifies that PC resources are to be used for improving pandemic preparedness and response. In May 2012, the Executive Board, based on advice to the Director-General from the PIP AG, decided that for the period 2012-2016, 70% of PC resources should go to preparedness and 30% to response.
32 See https://extranet.who.int/pip-pc-implementation/.
Pandemic response

Response funds are expected to be used for vaccines, antivirals, diagnostics and other pandemic-related products. The AG, with input from industry and other stakeholders, developed *Guiding Principles for the Use of PIP Partnership Contribution Response Funds* in October 2014. The *Guiding Principles* were developed because during a pandemic there will be limited or no opportunities to convene the AG or hold interactions with industry and other stakeholders to discuss the use of response resources. The *Guiding Principles* provide the basis for the Director-General to decide on the use of the PC for response purposes without further advice from the AG, or interaction with industry and other stakeholders.

3.4 Global influenza vaccine production capacity

The GAP is a comprehensive strategy to reduce the anticipated shortage of vaccines in the case of an influenza pandemic. Since 2006, GAP has catalysed an increase in annual global vaccine production capacity of seasonal vaccine from 500 million doses in 2006 to 1503 million doses in 2013; it is anticipated to grow to at least 1700 million by 2016. This seasonal capacity translates to a potential pandemic vaccine capacity of at least 4509 million doses annually (assuming 15ug of antigen would be needed and that viral antigen is the limiting factor for vaccine production).

The number of developing countries with approved pandemic influenza vaccines has increased from zero in 2006 to seven in 2015. This newly established local capacity will facilitate timely access to vaccine in these and neighbouring countries in the event of a pandemic. Experience shows that maintaining a sustainable influenza vaccine manufacturing capacity requires coherence in national policies on health, regulatory oversight, and industrial, science and technology development.

The projected global vaccine production capacity would still fall short of needs during a pandemic, based on currently available vaccines. Dose-sparing technologies are becoming increasingly available and may significantly increase the number of pandemic vaccine doses available on a global scale. The emphasis is on accelerating research into more broadly protective vaccines.

The GAP initiative concludes in 2016 and it is anticipated that the 2016 Review of the PIP Framework will include implications related to closure of GAP.

3.5 Vaccine stockpiles

In November 2013, the Strategic Advisory Group of Experts (SAGE) on Immunization agreed that WHO should not create a stockpile of influenza A(H5N1) vaccine, but should ensure access to pandemic vaccines under the PIP Framework. This advice was based on the recognition that there is no significant change in A(H5N1) epidemiology; there is a substantial risk of poor antigenic/strain match between the actual pandemic virus and stockpiled A(H5N1) vaccine; and the value of a stockpiled vaccine for containment of a nascent pandemic remains doubtful.

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34 See [http://apps.who.int/iris/bitstream/10665/112307/1/9789241507011_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/112307/1/9789241507011_eng.pdf?ua=1).
4 GOVERNANCE

The PIP Framework and its Annexes will be reviewed by 2016 with a view to proposing revisions reflecting developments, as appropriate, to the World Health Assembly in 2017 through the Executive Board.\textsuperscript{36} In April 2015, the PIP AG discussed the 2016 Review and requested the benefit of the views of the Director-General on the process. The Director-General will hold a Special Session of the PIP AG on 13-14 October 2015 to receive the views of Member States, industry and other stakeholders on the 2016 Review. The AG will consolidate these views in a report to the Director-General who will submit the report for the consideration of the 138th Executive Board in January 2016.

In 2015, six new members joined the AG to replace one-third of the existing AG members, in accordance with AG Terms of Reference.\textsuperscript{37} Dr Frances McGrath (New Zealand) was selected as Vice-Chair as the previous Vice-Chair resigned.

The AG met in October 2014\textsuperscript{38} and April 2015.\textsuperscript{39} Consultations with industry and other stakeholders occurred at each meeting. Information Sessions for the Permanent Missions in Geneva, led by the AG Chair, were held following the AG meetings.

The Secretariat developed an increased range of communications and outreach materials for industry, Member States, GISRS, and civil society organizations among others. These included a video on the PC;\textsuperscript{40} the PIP Information Portal;\textsuperscript{41} and a bi-monthly e-newsletter.\textsuperscript{42} In addition, the Secretariat held bi-monthly informal teleconferences with industry and civil society organizations. At its April 2015 meeting, the AG recommended that the Secretariat diversify its involvement with media, especially at the regional level. It also recommended that the Secretariat prepare articles for publications and media outlets, to increase awareness and understanding of the PIP Framework.

\textsuperscript{36} As provided under PIP Framework, Section 7.4.2.
\textsuperscript{37} As provided under PIP Framework, Annex 3 Sections 3.2 and 3.3.
\textsuperscript{40} See https://www.youtube.com/watch?feature=player_embedded&v=7M031gg1AnQ.
\textsuperscript{41} See https://extranet.who.int/pip-pc-implementation/.
\textsuperscript{42} See http://www.who.int/influenza/pip/pip_newsletter/en/.
## Annex 1

### INDEX OF TOPICS COVERED IN THE 2015 ANNUAL REPORT

<table>
<thead>
<tr>
<th>Topic area for Annual Report</th>
<th>Location in report</th>
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</thead>
<tbody>
<tr>
<td>1. Necessary technical capacities of the WHO Global Influenza Surveillance and Response System (GISRS)</td>
<td>Section 2.1&lt;br&gt;Annex 2</td>
</tr>
<tr>
<td>2. Operational functioning of WHO GISRS</td>
<td>Section 2.1&lt;br&gt;Annex 2</td>
</tr>
<tr>
<td>3. WHO GISRS influenza pandemic preparedness priorities, guidelines and best practices (e.g. vaccine stockpiles, capacity building)</td>
<td>Section 2.1&lt;br&gt;Section 3.3&lt;br&gt;Section 3.4&lt;br&gt;Section 3.5</td>
</tr>
<tr>
<td>4. Increasing and enhancing surveillance for H5N1 and other influenza viruses with human pandemic potential</td>
<td>Section 2.1&lt;br&gt;Section 3.3</td>
</tr>
<tr>
<td>5. Influenza Virus Traceability Mechanism (IVTM)</td>
<td>Section 2.2</td>
</tr>
<tr>
<td>6. Sharing of influenza viruses and access to vaccines and other benefits</td>
<td>Section 2.1&lt;br&gt;Section 2.2&lt;br&gt;Section 3.1&lt;br&gt;Section 3.4</td>
</tr>
<tr>
<td>7. Use of financial and non-financial contributions</td>
<td>Section 3.2&lt;br&gt;Section 3.3</td>
</tr>
</tbody>
</table>

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1 See PIP Framework, Section 7.2.5 and Annex 3, Section 2 for the seven areas to be covered by the annual report.
## Annex 2

### TECHNICAL CAPACITIES AND OPERATIONAL FUNCTIONING OF THE WHO GLOBAL INFLUENZA SURVEILLANCE AND RESPONSE SYSTEM

Table 1. Distribution of reverse transcription polymerase chain reaction (RT-PCR) kits for diagnosis and surveillance of influenza viruses (seasonal and viruses with human pandemic potential), 1 August 2014 through 31 July 2015

<table>
<thead>
<tr>
<th>Virus type</th>
<th>No. of kits</th>
</tr>
</thead>
<tbody>
<tr>
<td>H5</td>
<td>57</td>
</tr>
<tr>
<td>H7</td>
<td>47</td>
</tr>
<tr>
<td>Other (seasonal)</td>
<td>336</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>440</strong></td>
</tr>
</tbody>
</table>

Table 2. Characterization of influenza viruses with human pandemic potential by WHO Collaborating Centres, 1 August 2014 through 31 July 2015

<table>
<thead>
<tr>
<th>Influenza virus</th>
<th>No. of viruses characterized</th>
<th>No. of countries providing viruses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza A(H5N1)</td>
<td>22</td>
<td>1 (Egypt)</td>
</tr>
<tr>
<td>Influenza A(H5N6)</td>
<td>2</td>
<td>1 (China)</td>
</tr>
<tr>
<td>Influenza A(H7N9)</td>
<td>92</td>
<td>2 (China, Canada)</td>
</tr>
<tr>
<td>Influenza A(H9N2)</td>
<td>5</td>
<td>2 (China, Bangladesh)</td>
</tr>
<tr>
<td>Influenza A(H1N1)v</td>
<td>3</td>
<td>1 (USA)</td>
</tr>
</tbody>
</table>

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2 During this time, the WHO Collaborating Centre (Atlanta) distributed 440 RT-PCR kits to 74 GISRS laboratories in 70 countries.
Table 3. Performance of participating laboratories in the annual external quality assessment of PCR testing, April-June 2014

<table>
<thead>
<tr>
<th>No. of correct results (10 samples tested)</th>
<th>No. (%) of laboratories (N= 156 participating laboratories)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 samples correct</td>
<td>94 (60.3)</td>
</tr>
<tr>
<td>9 samples correct</td>
<td>31 (19.9)</td>
</tr>
<tr>
<td>6-8 samples correct</td>
<td>21 (13.5)</td>
</tr>
<tr>
<td>&lt;6 samples correct</td>
<td>10 (6.4)</td>
</tr>
</tbody>
</table>

Note: The average correct rate for all samples and influenza A(H5) detection were 71% and 83% respectively, compared to 79% and 88% for previous years’ panels. The comparatively lower correct rates in the 2014 panel reflect the inclusion of some samples with lower virus titres.

Figure. Performance of laboratories participating in the WHO external quality assessment programme for detection of influenza A and B viruses, panels 1–13, 2007–2014

## Annex 3

### KEY ACHIEVEMENTS FROM PIP FRAMEWORK

#### PARTNERSHIP CONTRIBUTION IMPLEMENTATION

<table>
<thead>
<tr>
<th>Area of work</th>
<th>Programmatic results (January 2014- September 2015, for target countries)</th>
</tr>
</thead>
</table>
| **Laboratory & Surveillance**  
Target countries: 43  
*Improving national ability to detect, monitor and share novel influenza viruses* |  
- 9 countries (21%) have functioning event based surveillance.  
- 28 countries (65%) are reporting virological data to WHO global influenza database.  
- 9 countries (21%) are reporting epidemiological data to WHO global influenza database.  
- 24 countries (56%) are sharing virus samples with GISRS.  
- 27 countries have scored 100% proficiency in PCR testing of viral samples. |
| **Burden of Disease**  
Target countries: 19  
*Evaluating cost effective interventions for influenza at the national level* |  
- A standard tool provided by WHO to estimate economic burden and burden of disease is being tested at the country level.  
- 5 target countries completed national burden estimates and presented their work to national and/or international audiences.  
- 6 target countries are close to completing national burden estimates but have not formally presented their work. |
| **Regulatory capacity building**  
Target countries: 16  
*Building national regulatory capacity so that vaccines, tests and treatments for influenza can be deployed safely* |  
- 5 (31%) target countries were assessed for national regulatory capacity in the areas of regulatory systems, marketing authorization, and pharmacovigilance.  
- 13 out of 48 countries have accepted the WHO collaborative procedure for accelerated approval of influenza vaccines, antivirals and diagnostics. |
| **Planning for Deployment**  
Target countries: 16  
*Planning for efficient deployment of vital supplies for pandemic influenza* |  
- Deployment plans for 16 target country assessed for ability to respond quickly in the event of a pandemic.  
- Model agreement between WHO and recipients of pandemic products completed in April 2015.  
- Development of a simulation tool to identify deployment bottlenecks and to train for a cooperative response from all supply chain actors. |
| **Risk Communications**  
Target countries: 30  
*Building capacity to provide accurate public information during health emergencies* |  
- 27 national and sub-regional risk communications capacity building workshops- reaching 911 participants- were completed to prepare target countries for public health emergencies.  
- 6 risk communications training for journalists were completed in AFRO, EMRO, EURO, SEARO and WPRO.  
- 100% of requests for risk communications surge support responded to within 72 hours through the ECN network of 101 members. |

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1 This is part of broader support to countries to agree to a common way of enabling the use of vital supplies by their populations during a pandemic.

2 Started in March 2013.

3 Training builds capacity in journalists to report accurately on health emergencies and pandemics.