Pandemic Influenza Preparedness Framework

Partnership Contribution

IMPLEMENTATION OF PREPAREDNESS ACTIVITIES

ANNUAL REPORT 2016

REVISED FEBRUARY 2018

World Health Organization

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This revised version addresses the recommendations of the PIP PC 2017 external audit.

See the External Audit Report: *www.who.int/influenza/pip/pip_audit_report.pdf?ua=1*

See the WHO Management Response Letter: *www.who.int/influenza/pip/mgt_letter.pdf?ua=1*

World Health Organization

WHO/WHE/IHM/PIP/2017.01 Rev.1

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CONTENTS

ACRONYMS & ABBREVIATIONS

AFRO	WHO Regional Office for Africa
AG	PIP Advisory Group
AMRH	African Medicines Regulatory Harmonisation
AMRO	WHO Regional Office for the Americas (also known as PAHO, Pan-American Health Organization)
EBS	Event-based surveillance
EMRO	WHO Regional Office for the Eastern Mediterranean
EQA	External Quality Assessment
EQAP	WHO's External Quality Assessment Programme
EURO	WHO Regional Office for Europe
EWARS	Early Warning Alert and Response System
FAO	Food and Agriculture Organization
GIP	WHO's Global Influenza Programme
GISRS	Global Influenza Surveillance and Response System
HAI	Human-Animal Interface
HLIP	High-Level Implementation Plan
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IHR	International Health Regulations
ILI	Influenza-like illness
ISST	Infectious Substances Shipping Training
IVTM	Influenza Virus Traceability Mechanism
MARD	Ministry of Agriculture and Rural Development
MOH	Ministry of Health
NIC	National Influenza Centre
NRA	National Regulatory Authority
NRL	National Serology Reference Laboratory in Australia
NVDP	National vaccine deployment plan
OIE	World Organization for Animal Health
PAHO	Pan-American Health Organization (also known as AMRO, WHO Regional Office for the Americas)
PIP	Pandemic Influenza Preparedness Framework
PC	Partnership Contribution
PQ	Prequalification
RRT	Rapid Response Team
RSV	Respiratory syncytial virus
SARI	Severe acute respiratory infection
SEARO	WHO Regional Office for South-East Asia
WPRO	WHO Regional Office for the Western Pacific

OVERVIEW

A world better prepared

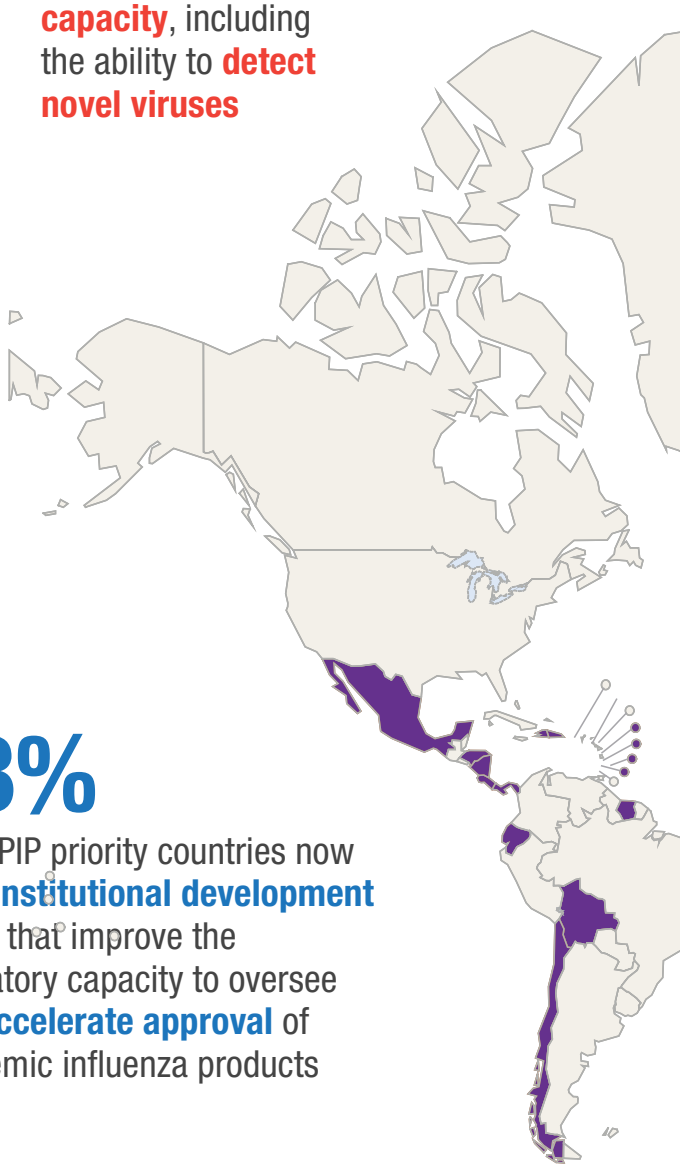
There is no telling where or when the next pandemic influenza virus will emerge, nor how severe the resulting pandemic will be. It could compromise the health of millions of people and disrupt societies and economies across the world. That makes it vital for the global health community to develop and strengthen capacities to identify new influenza viruses as soon as they emerge, quickly assess their pandemic potential, and enable a timely and effective response.

Helping countries to strengthen their preparedness for the next pandemic is the subject of the WHO's Pandemic Influenza Preparedness (PIP) Framework. Adopted in 2011, the Framework aims to improve global detection, surveillance, and sharing of influenza viruses with pandemic potential, and to increase the availability of, and access to, vaccines and other important pandemic response products during influenza pandemics. The Framework includes a benefit-sharing mechanism called the Partnership Contribution (PC) that supports activities to build or strengthen preparedness capacities in developing countries.

The PC is collected as an annual cash contribution from influenza vaccine, diagnostic and pharmaceutical manufacturers that use the WHO Global Influenza Surveillance and Response System (GISRS). A total of US$ 43.8 million was spent on preparedness in 2014-16, including US$ 17.1 million in 2016*. For more details, see **Annex 1:** Finances. These funds have been used to support activities across five different areas of work, each of which includes targets designed to measure annual improvement in global preparedness for pandemic influenza. In all five areas, progress towards those targets is on track (see **Figure 1**).

79%

of 43 PIP priority countries have improved their **L&S capacity**, including the ability to **detect novel viruses**



88%

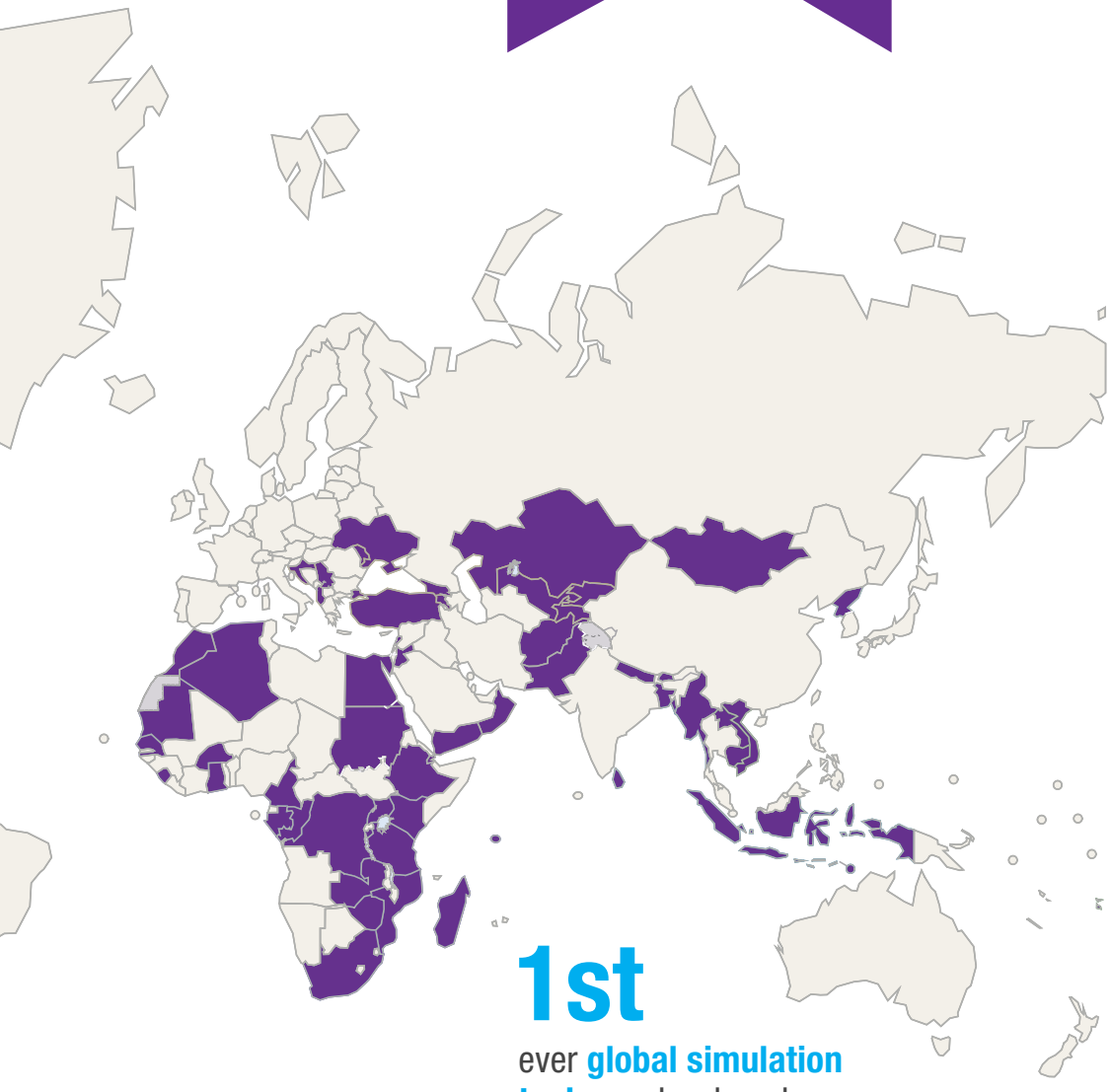
of 16 PIP priority countries now have **institutional development plans** that improve the regulatory capacity to oversee and **accelerate approval** of pandemic influenza products

* All financials presented in this report are as of 31 December 2016, which is the end of the first year of the biennial cycle (2016-17). The figures on pages 4-5 are inclusive of Programme Support Costs (PSC). Net of PSC these figures are, respectively, US$ 38,754,110 and US$15,098,843 (see **Annex 1**). Throughout the rest of the report, expenditures reported are net of PSC.

US$43.8 million

74%

of 19 PIP priority countries, across all regions, now have **disease burden estimates**



80%

of 30 targeted PIP priority countries received direct support to establish **risk communications**, and **161 trainings** were completed through an online platform

1st

ever **global simulation tool** was developed for pandemic influenza vaccine deployment

Figure 1: Since its inception, the PIP Framework has strengthened global pandemic influenza preparedness in five areas of work

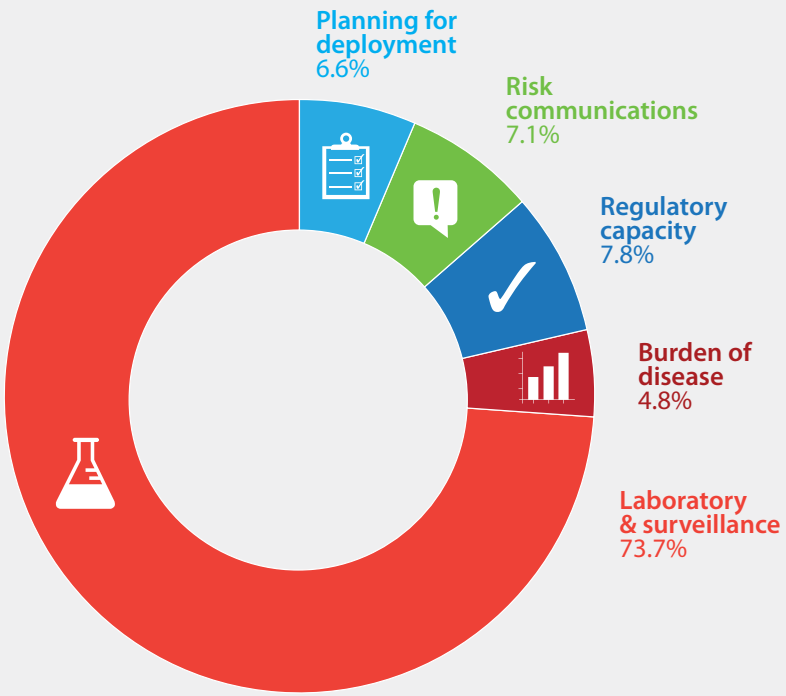
INTRODUCTION

A global initiative to help the world prepare for the next influenza pandemic

In 2011, WHO Member States adopted the Pandemic Influenza Preparedness (PIP) Framework to improve global pandemic influenza preparedness and response. The Framework has two pillars: promoting timely sharing of influenza viruses with human pandemic potential through the WHO-coordinated network of public health laboratories called the Global Influenza Surveillance and Response System (GISRS), and increasing the equity of access to benefits arising from such sharing.

The Partnership Contribution (PC) is a benefit-sharing mechanism that supports preparedness capacity-building in developing countries. Paid by influenza vaccine, diagnostic and pharmaceutical manufacturers that use GISRS, the PC is used in many ways to strengthen pandemic preparedness capacities in five different areas of work that were identified as critical to strengthening global pandemic preparedness. The five areas of work are shown in **Figure 2**. For more information on each of these areas of work, including a full list of targets, outcomes, outputs, indicators and activities, see the *Partnership Contribution Implementation Plan 2013–2016*. [1]

Figure 2:
PC's five areas of work and the proportion of expenditures in 2016.



Progress against the implementation plan is reported each year, through the PC Annual Reports. This year's achievements are highlighted in the pages that follow. For more information on past PC achievements see *PIP PC Annual Report 2014* [2] and *PIP PC Annual Report 2015* [3]. Information on each area of work, including indicator status and expenditure data can be found on the *PC Implementation Portal* [4].

[1] Partnership Contribution Implementation Plan 2013–2016. Geneva: World Health Organization; 2013 (*www.who.int/influenza/pip/pip_pcimpplan_update_31jan2015.pdf*, accessed 28 June 2017)

[2] PIP PC Annual Report 2014. Geneva: World Health Organization; 2015 (*http://apps.who.int/iris/bitstream/10665/161369/1/WHO_HSE_PED_GIP_PIP_2015.2_eng.pdf?ua=1&ua=1*, accessed 28 June 2017)

[3] PIP PC Annual Report 2015. Geneva: World Health Organization; 2016 (*http://apps.who.int/iris/bitstream/10665/246229/1/WHO-OHE-PED-2016.01-eng.pdf?ua=1*, accessed 28 June 2017)

[4] PIP PC Implementation Portal (*https://extranet.who.int/pip-pc-implementation*, accessed 28 June 2017)

UNDER THE SPOTLIGHT: the PIP review

It has been six years since the PIP Framework was adopted by the World Health Assembly. In late 2015, an independent group of experts was convened to review the Framework's work so far and assess the extent to which it has improved global preparedness. The review group analysed implementation of the Framework and its achievements, including the PC. It examined outputs, methods and interactions with other programmes and partners. It also consulted widely with diverse stakeholders, including representatives from WHO Member States, the PIP Advisory Group (AG), GISRS, notably WHO Collaborating Centres[5], industry, civil society, genetic sequence databases and initiatives, and WHO staff.

In its final report, the review group said the PC has fostered "sustained and meaningful capacity building in PIP priority countries in each of the five areas of work". That is not to say there are no challenges.

As such, the review group made a few key recommendations related to PC implementation:

1. PC implementation measures should be better communicated in regular Advisory Group reports and post-meeting briefings to highlight reports (Rec #2b)
2. Give the PIP Advisory Group regular financial reports to ensure financial accountability (Rec #26)
3. Communication and transparency should be enhanced around issues such as selection of countries for PC funds (Rec #2c)
4. Consider including process measures for PC implementation (Rec #25)
5. Consider lessons learned from GAP (Rec #34)
6. Activity under the PIP Framework should be undertaken with the provisions of the *International Health Regulations (2005)* in mind, and capacity building efforts aligned (Rec #35)

For more information, see: *Review of the Pandemic Influenza Preparedness Framework*[6].

[5] See *www.who.int/influenza/gisrs_laboratory/collaborating_centres/en* for more information.

[6] Review of the Pandemic Influenza Preparedness Framework. Geneva: World Health Organization; 2016 (*http://apps.who.int/gb/ebwha/pdf_files/EB140/B140_16-en.pdf?ua=1*, accessed 30 June 2017).

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Laboratory & surveillance

Improving abilities to detect, monitor and share novel influenza viruses

Being prepared for an influenza pandemic requires effective surveillance. To achieve that, a country must be able to detect influenza viruses, monitor their epidemiology and assess their risks. The ability to share influenza viruses and information underpins both detection and monitoring efforts, and is key to recognising global patterns of influenza, understanding the pandemic risk of different viruses, and choosing appropriate viruses for vaccine production.

The PC helps 43 PIP priority countries strengthen their preparedness capacity in all three areas, with PC funds being used to strengthen GISRS laboratory and surveillance systems by helping to:

- equip and support laboratories towards quality assured detection of influenza viruses, including those with pandemic potential;
- train healthcare workers so that they can recognise and report unusual influenza events;
- establish sentinel surveillance systems that can collect, analyse and report data on influenza-like illnesses (ILI) and severe acute respiratory infections (SARI);
- develop systems for sharing influenza viruses at regional and global scales, including staff certified to handle and ship infectious substances; and
- develop data management and health information systems that can share in-country data with regional or global platforms to support timely risk assessment.

Progress is measured across three outputs and seven indicators; most of these are on track to be achieved by 2017 (see **Figure 6**).

Figure 3: 43 PIP priority countries for laboratory and surveillance work

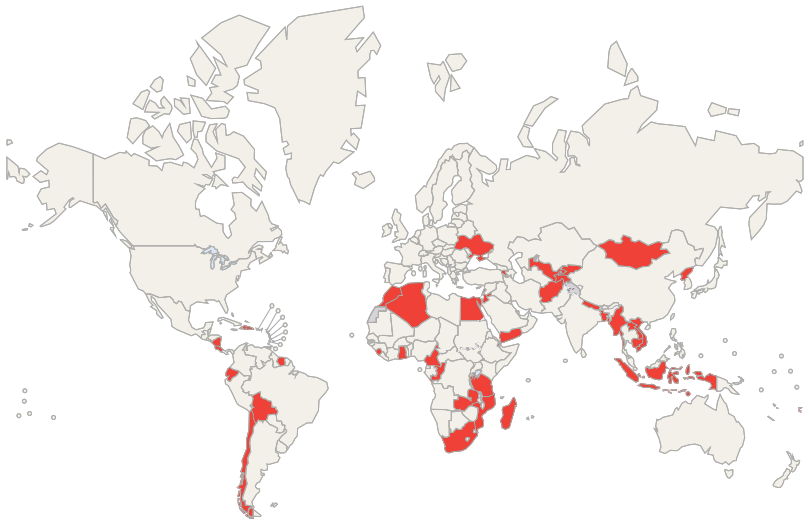
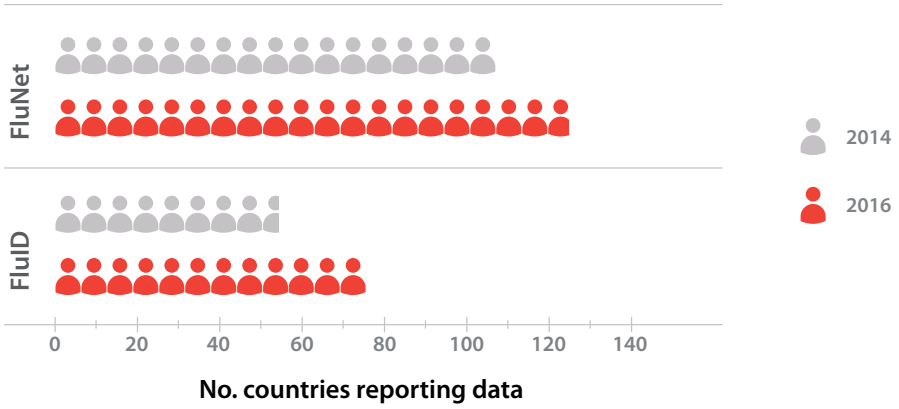
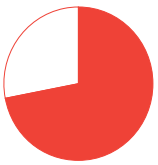


Figure 5: Growth in the number of countries reporting epidemiological data through FluID, and virological data through FluNet, between 2014 and 2016





31 countries (72%) increased their detection capacity in 2016

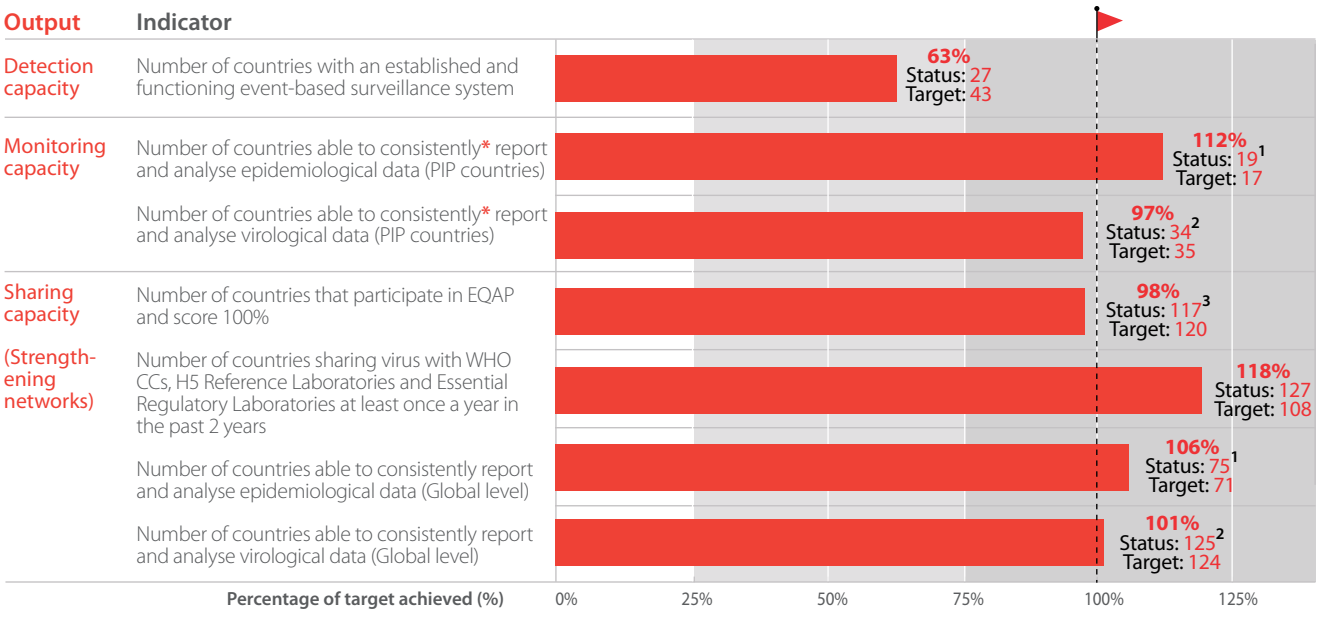
25 countries (58%) increased their monitoring capacity in 2016

26 countries (60%) increased their sharing capacity in 2016

Figure 4: Increase in detection, monitoring and sharing capacity amongst PIP priority countries since 2015

Figure 6: Laboratory and surveillance indicators: 2016 status and 2017 targets

OUTCOME: Capacity to detect and monitor influenza epidemics is strengthened in developing countries that have weak or no capacity



* Consistently means that country reports most of the weeks during influenza season(s)
[1] Data source: http://www.who.int/influenza/surveillance_monitoring/fluid/en
[2] Data source: Global Influenza Surveillance and Response System, http://www.who.int/flunet
[3] Data source: External Quality Assessment Project (EQAP) panel 15, 2016

Triple training win in Viet Nam

From Bangladeshi technicians reporting epidemiological data to FluID for the first time to Armenian specialists shipping virus specimens with more confidence, participants of PC-funded training across the world are putting their new skills to use. There is little doubt that by investing in training, PIP PC funds are helping to improve national capacities to detect, monitor and share novel influenza viruses.

In Viet Nam, PC-supported training in 2016 has given the country a triple win in laboratory and surveillance:

1. Staff at Viet Nam's two National Influenza Centres (NICs)[7] were trained by the National Serology Reference Laboratory in Australia (NRL), one of WHO's Collaborating Centres, in bioinformatics. As a result, both centres can analyse virus sequencing data with more confidence.

2. These same staff received follow-up training in External Quality Assessment (EQA), which led to their contributing to the development of national EQA programmes – including influenza EQA – for public health laboratories across the country.

3. Two three-day training courses – this time in clinical management – were given to 79 doctors and nurses from local hospitals in eleven central and west highland provinces where there is a high risk of avian influenza. These health workers care for patients in remote areas, with little opportunity to update their medical expertise and capacity. Now, thanks to PIP-funded training, new knowledge and skills are being put to use in managing SARI cases in the field. The training has also laid the foundations for knowledge exchange by giving rise to a network of peers in SARI clinical management that can share expertise and experiences.

[7] Viet Nam has two National Influenza Centres: the National Institute of Hygiene and Epidemiology (NIHE) in Hanoi, and the Pasteur institute in Ho Chi Minh City (PIHCMC).

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Deepening the impact of training in Africa

PC-funded training covers a broad range of topics and activities that strengthen laboratory and surveillance systems in different ways (see **Figure 7**). In Africa, the PIP team and partners used a combination of tactics to deepen the impact of a recently completed training programme in sentinel surveillance.

First, they adopted a 'train the trainer' approach to extend the reach of knowledge transfer. Partners from across the African continent attended a workshop in September 2016 in the Republic of Congo's capital, Brazzaville, to learn how to deliver sentinel surveillance training. In the six months that followed, they collectively rolled the training out to 12 countries,[8] with plans for further training next year.

The team then updated the existing protocol for African policy-makers[9] and disseminated it in the region's three major languages (English, French and Portuguese). The protocol, which covers all aspects of surveillance, from epidemiology to laboratory and data management, serves as a general instruction manual for countries wanting to establish influenza sentinel surveillance.

But every country is different so the team implemented a third approach to support their training – working with individual countries to help them customize the protocol to their own national context. To date, the team have helped all the PIP priority countries in the region.

This three-pronged approach has boosted the impact of PC-funded sentinel surveillance training across the African continent. By giving countries tailored guidance and tools, it has also helped GISRS to expand the global influenza surveillance network to Chad, Gabon, Guinea and Malawi.

[8] Chad, Congo, Ethiopia, Gabon, Guinea, Malawi, Mauritania, Mauritius, Niger, Sierra Leone, Togo and Uganda.

[9] Protocol for National Influenza Sentinel Surveillance. Brazzaville: World Health Organization Regional Office for Africa; 2015 (http://apps.who.int/iris/bitstream/10665/187121/1/97892%2090232889.pdf, accessed 24 March 2017).

Figure 7: Topics covered by PC-funded training in 2016

Towards robust detection

It takes more than training to build robust systems for detecting influenza viruses. Just as important is the need for laboratories to generate regular and reliable results. The WHO's External Quality Assessment Programme (EQAP)[10] monitors the quality of PCR testing at GISRS laboratories (as well as non-GISRS laboratories that want to participate).

PIP PC funds contribute to the programme by covering the cost of preparing and distributing the panels to participating countries and by supporting the analysis and communication of results. There is evidence that the quality of the network as a whole is improving. In 2016:

- 87% of countries correctly identified all samples – of both seasonal and avian influenza viruses – sent to them.
- 92% of countries correctly identified all the samples of avian influenza A(H5) viruses, as well as an A(H9N2) virus with pandemic potential.

[10] For more information about the EQAP, including annual results and analyses, see: *www.who.int/influenza/gisrs_laboratory/external_quality_assessment_project/en/*

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Strengthening surveillance around the world

Because it is not possible to predict
where or when a novel influenza virus will emerge, it is critical
that all countries have the capacity for early event detection and basic monitoring.
But many developing countries lack the necessary infrastructure for effective
surveillance and have limited resources to address the problem.

In these contexts, PC funds have proved invaluable,
as shown by the examples that follow.

Africa: Sierra Leone

In 2016, Sierra Leone emerged from its fight against the most devastating Ebola outbreak ever recorded. The two-year battle ravaged health facility infrastructure and had a significant impact on health centre personnel. As a result, the outbreak led to a total suspension of influenza surveillance activities. Now, with the help of PC funds, training and advocacy, the country has reinitiated influenza surveillance and laboratory testing.

- Sentinel surveillance for ILI and SARI has restarted in 3 out of 4 sites.
- A system for collecting and transferring virus samples has been established, with more than 360 such samples collected since March 2016.
- The Ministry of Health has incorporated PIP activities into its Directorate for Disease Prevention and Control's work plan.

The Americas: Suriname

2016 marks the second year of PC funding for Suriname. In those two years, the country has established the capacity for testing influenza and other respiratory viruses through a working sentinel surveillance system that is collecting, analysing and sharing influenza data at national, regional and global levels.

- Three SARI and one ILI sentinel sites have been set up and are working well.
- Each sentinel site has been connected to PAHOFlu, a regional online system for capturing and sharing epidemiologic and laboratory data.
- The national influenza reference laboratory is participating in WHO's External Quality Assessment Programme.
- Suriname reports virological and epidemiological data to FluNet and FluID respectively every week.

Eastern Mediterranean: Afghanistan

The National Influenza Centre (NIC) in Afghanistan was opened in 2007; but a lack of resources and funds closed its doors within five years. Now, PC funds have helped to reopen them, and to restore influenza surveillance in the country. In 2016:

- the NIC tested more than 2000 clinical samples,
- it shared 20 influenza-positive virus isolates with a WHO Collaborating Centre, and
- it established a mechanism for coordinating with animal health departments.
- National surveillance meetings have been held every quarter, and
- the first ever national conference on respiratory infections was also held.

Europe: Tajikistan

Despite several attempts to establish sentinel surveillance for influenza in Tajikistan, it was not until 2016 that it became operational – through a pilot system set up for ILI and SARI at two sites in Dushanbe. The pilot, which was established by the Ministry of Health and Social Protection of the Population, was developed with the help of PC funds and continues to benefit from PC support.

- A WHO mission to Dushanbe in 2016 showed that influenza surveillance is operational at both sentinel sites.
- The mission team confirmed that both sites comply with case definitions and standard surveillance procedures.
- Data from both sites are being reported to WHO, and shared through the weekly Flu News Europe Bulletin.

South-East Asia: Timor-Leste

When PC implementation in Timor-Leste began in 2014, the country had no influenza infrastructure. In the three years since, PC funds and support have helped pave the road towards full surveillance at a national level. In 2016:

- two ILI/SARI sentinel sites were established, and collected their first samples;
- rapid response teams were assembled and trained, at the national level and in 13 municipalities;
- a mechanism for coordinating with animal health departments was established; and
- the government integrated influenza into its broader disease surveillance system.

Western Pacific: Fiji

Fiji has long had a national system to detect and monitor ILI and SARI. But over the past two years, with PC funds and support, the island has significantly expanded its disease surveillance and laboratory testing.

- The number of ILI sentinel sites has increased from 12 in 2014, to 34 in 2016, with an Early Warning Alert and Response System (EWARS) and virological surveillance up and running at five of these sites.
- The number of SARI sites has increased from one in 2013 (Central Division) to three in 2016 (Central, Western and Northern Divisions).
- Influenza testing has more than doubled, from 143 tests completed in 2014 to 384 in 2016.
- More than 120 influenza isolates were referred to WHO in 2016 (compared with 66 in 2014).

From theory to practice

Having a plan of what to do is an essential part of being ready to act during an emergency. That is why PC supports health authorities across the world to develop plans and procedures for coping with a pandemic. But will these plans work when a crisis hits? This year, some of them have been put to the test as countries have had to cope with actual outbreaks.

In Egypt, event-based surveillance established in 2015 with PC support is also proving invaluable in helping authorities detect avian influenza A(H5N1) quickly. The early warning system uses a combination of formal and informal channels to capture information about events that are of potential risk to public health. There is a community hotline, and a media centre that scans news and social media every day. The IHR national focal point acts as a 'coordination mechanism', linking reports and feedback to other government departments, as well as international organizations. The system seems to be working: in 2016, Egypt reported ten human cases of A(H5N1), including four deaths.

In Cambodia, PIP and partners promote a 'One Health' approach to planning, bringing human and animal health sectors together to identify unusual influenza events and take joint action. In May 2016, when an outbreak of avian influenza killed large flocks of poultry in Kampot Province, the approach went from theory to practice. The Ministry of Agriculture, Forestry and Fishery kick-started a joint response by reporting the poultry deaths to the Communicable Disease Control (CDC) Department at the Ministry of Health. This triggered an immediate response from CDC, which started an investigation and implemented a series of control measures, including enhanced surveillance for human cases and health education in the affected areas. Three suspected cases were identified; all tested negative.


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Global networking

However good a country's surveillance and preparedness plans are, collaboration – both before and during an outbreak – improves the response. Enhancing connectivity and collaboration is one of the PIP Framework's goals, and across the world, PC funds support a range of initiatives to improve sharing on national, regional and global scales (see **Table 1**).

Table 1: Examples of PC-supported activities to improve the sharing of information and viruses at national, regional and global scales

	ACTIVITY TYPE	PC FUNDS HAVE BEEN USED TO SUPPORT:
National	*Coordination*	• Annual influenza meetings in four European PIP priority countries (Armenia, Kyrgyzstan, Turkmenistan and Uzbekistan); three of those included representatives from the animal sector to promote a 'One Health' approach.
	Cross-sector collaboration	• A 2016 workshop for Viet Nam's public health and veterinary laboratories; which led to an initial plan for information-sharing and the development of a 'One Health' approach in the country, including a joint ministerial (MOH-MARD) circular on the prevention and control of zoonotic diseases.
Regional	*Cross-border collaboration*	• Annual meetings of the Pan-American influenza network SARInet; these have led to a collaborative 17-country analysis to estimate influenza-associated hospitalizations in the region.
	Data sharing	• The establishment or strengthening of regional web-based platforms for storing, managing and sharing epidemiological and virological data, including EMFLU in Eastern Mediterranean, TESSy in Europe, PAHOFlu in the Americas, and an online interactive Influenza Situation Update in the Western Pacific.
	Information sharing	• Regular influenza updates that are published online and distributed to decision makers, clinical staff and partners; these include Flu News Europe*, Mongolia's weekly "data feedback" and a new epidemiological bulletin in Republic of Congo, among others.
Global	*Data sharing and analysis (FluID and FluNet)*	• Improvements to FluID and FluNet (two global WHO-operated systems for sharing data and information), including updating to allow easier and more flexible upload of data. • The reporting of data to both FluID and FluNet; newcomers to the systems in 2016 include Cambodia, Lao People's Democratic Republic and the Maldives (for FluID) and the Maldives and Viet Nam (for FluNET).
	Virus sharing	• Improvements to the Influenza Virus Traceability Mechanism (IVTM), an online platform that records the movement of PIP biological materials into, within and out of GISRS. The IVTM allows users to see where materials have been sent and gives them access to the results of analyses and tests on these materials. • Materials and training for NIC staff to be able to select and ship quality influenza samples to WHO collaborating centres
	Coordination	• Updating and disseminating laboratory protocols for virus detection • GISRS operations, including the monitoring and assessment of circulating influenza viruses to determine their type and pathogenicity and enable candidate vaccine recommendations.

* See: www.flunewseurope.org

Shipping support

When it comes to handling, storing and sharing influenza virus materials, the need to follow strict national and international rules, regulations, and practices on biosafety and biosecurity is important to protect laboratory staff, the public and the environment. But for several developing countries, the capacity to properly prepare shipments of materials in accordance with international shipping regulation is hampered by a lack of resources and training.

PC funds are helping these countries overcome the barriers by supporting two complementary mechanisms managed through GIP:

1 **WHO Shipping Fund Project.** This project, which was established in 2005, provides shipping services to NICs and other recognised influenza laboratories to help share influenza specimens and isolates quickly and safely. The project covers the cost of shipping specimens to a GISRS laboratory. In 2016, the PC funded 223 shipments around the globe.

2 **Infectious Substances Shipping Training (ISST).** This training programme, which is recognised by both the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA), aims to enable laboratory personnel to understand, and comply with, international regulations governing the transport of dangerous goods such as influenza viruses and clinical specimens. It covers a range of relevant topics, including the classification, documentation, marking and labelling of infectious substances, as well as how to pack these for international shipment. In 2016, the PC funded ISST for 34 people in Georgia, Pakistan and Republic of Congo.

Together, these mechanisms substantially increased the number, quality and safety of influenza specimen shipments to GISRS in 2016. In doing so, they have strengthened the information available for influenza preparedness, risk assessment and response.

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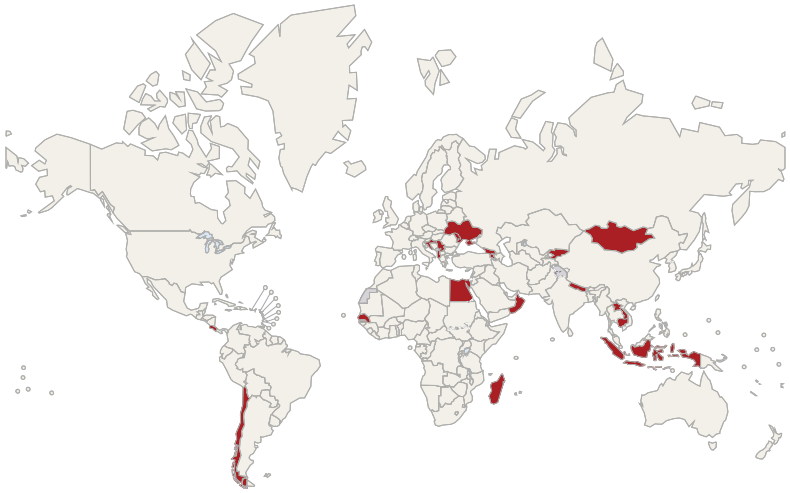
Burden of disease

Supporting burden of influenza estimates to inform evidence-based health policies

To protect a country's health and economy during a pandemic, it is important that authorities allocate sufficient resources and plan appropriate intervention strategies capable of limiting the spread of the disease and minimizing the health and economic impacts. To design effective pandemic policies, decision makers need to know how seasonal influenza impacts local populations, regions and economies – that is, its burden of disease.

Calculating the burden of influenza accurately can't be done overnight. It takes time to develop a method, establish the right tools and train people in how to use them. But properly targeted funds could go a long way to generating the data that decision makers need to strengthen their policies. For example, a WHO manual for estimating disease burden[11], published in 2015, has helped standardise estimates of the disease burden of seasonal influenza across several countries and resulted in more consistent and comparable data.

Figure 8: PIP priority countries for burden of disease work.



Beyond the development of the WHO manual, the PC supports activities to:

- make international experts available for technical advice and support;
- train in-country experts to produce and publish valid estimates for both the disease and economic burdens of influenza; and
- leverage partner initiatives to jointly estimate global influenza burden.

[11] WHO Global Influenza Programme. A Manual for Estimating Disease Burden Associated With Seasonal Influenza. Geneva. World Health Organization; 2015 (www.who.int/influenza/resources/publications/manual_burden_of_disease/en/, accessed 31 May 2017).

Figure 9: Number of countries* with burden of disease estimates based on the WHO manual (as of 20 March 2017)

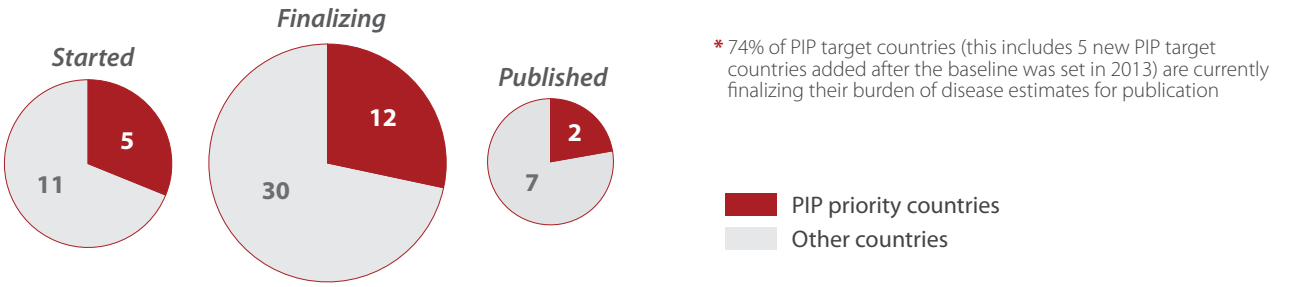
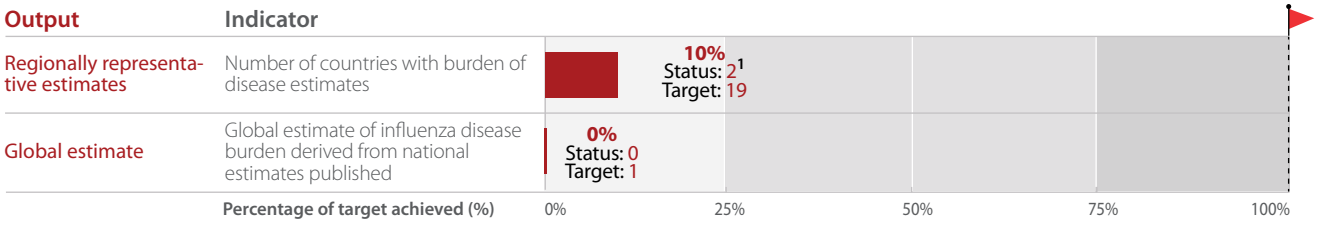


Figure 10: Burden of disease indicators: 2016 status and 2017 targets

OUTCOME: National policy-makers will have influenza disease burden data needed for informed decision-making and prioritization of health resources



[1] Costa Rica and Egypt have published estimates. A further 8 PIP priority countries have estimates pending publication in peer-reviewed journals (Albania, Cambodia, Chile, Indonesia, Madagascar, Mongolia, Senegal, Ukraine).

Bridging knowledge gaps

Understanding of the burden of influenza is very patchy – especially when it comes to the developing world, where morbidity and mortality data have long been scant or absent. Today, thanks to recent growth in national surveillance networks, that data gap is closing. But a knowledge gap remains because many developing countries still lack both the tools and the resources to carry out influenza burden estimates. In 2016, the PC supported both global and national action to tackle the problem.

At a global level, the PC financed three activities:

1. A worldwide estimate of influenza-associated mortality, which started in the first half of 2016 and is expected to deliver estimates at the end of 2017.
2. A systematic literature review,[12] which highlights the evidence available on influenza burden and will be used to identify potential collaborators and areas for future work.
3. An international consultation on influenza burden estimates, at which 93 researchers, from 32 countries, presented their efforts to generate national estimates and were encouraged to record and share their findings through scientific publications. To that end, in the second half of 2016, PC funds supported researchers to contribute to a theme issue of the peer-reviewed *Influenza and Other Respiratory Viruses* journal. Articles from more than 20 countries, including several developing ones, are expected to be published in 2017.

At a national level, PC funds were used to help Madagascar and Senegal calculate their burden of influenza; and to support six countries (Chile, Colombia, Costa Rica, Indonesia, Lao People's Democratic Republic, Romania) test a newly-developed WHO manual[13] for estimating the disease's economic burden.

These estimates will help national policy-makers weigh up the costs and benefits of investing in surveillance infrastructure and supplies, such as influenza vaccines, as well as other interventions such as seasonal vaccination programmes. But the data are also valuable in informing the plans and practices of donor agencies, multilateral organisations and pharmaceutical companies; and they will improve the accuracy of global disease burden estimates too.

[12] The review covered three areas three subjects related to influenza burden (risk factors for severe outcomes following influenza disease in developing countries; seasonal influenza mortality and morbidity; and the burden of respiratory syncytial virus (RSV) compared with the burden of influenza in children). Results will be summarized and published in 2017.

[13] WHO Manual for estimating the economic burden of seasonal influenza. Geneva: World Health Organization; 2016 (http://apps.who.int/iris/bitstream/10665/250085/1/WHO-IVB-16.04-eng.pdf, accessed 29 March 2017).

Shaping policy and practice

Already, in some PIP priority countries, the investment in estimating burden of influenza is paying off – by helping national authorities decide what to do and how.

In Cambodia, for example, the WHO manual has been used to inform a hospital admission review at a SARI sentinel site in Svay Rieng province that has helped deliver more reliable disease burden estimates at a provincial level.

And **in Viet Nam**, a 2016 workshop on burden of disease has paved the way to new data, informing a range of activities to estimate the burden of influenza in the country.

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Regulatory capacity building

Helping countries strengthen regulation, and expedite approval of pandemic influenza products

National authorities are ultimately responsible for the safety of their citizens and as such, must be confident that they are not taking undue risks by accepting donated vaccines that have not been subject to their own regulatory approval. By having clear regulatory pathways for emergencies, they can help ensure real-time access to life-saving supplies during a pandemic.

The 2009 A(H1N1) pandemic highlighted several regulatory bottlenecks that restricted rapid equitable access to health products.

For example, WHO Prequalification (which provides independent quality assurance of vaccines and medicines ahead of time) was not enough to guarantee approval in more than half the countries that received A(H1N1) vaccines. And the lack of a common regulatory process also meant many countries could not follow a set of standard WHO guidance criteria for registering the new products.

To prepare for a more efficient and effective response to pandemic influenza, PC funds are being used to:

- train and inform regulators on quality management systems, marketing authorization and pharmacovigilance;
- foster regulatory harmonization and common approaches that can 'fast track' approval of key influenza products during a pandemic; and
- develop and implement robust guidelines and procedures to support quick regulatory decisions during a pandemic.

Figure 11: PIP priority countries for regulatory capacity building work

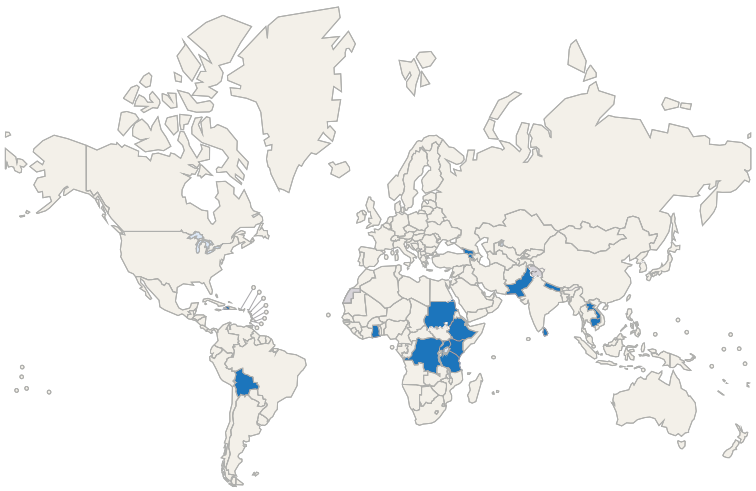


Figure 12: Snapshot of regulatory capacity status in each PIP priority country (Output 2)

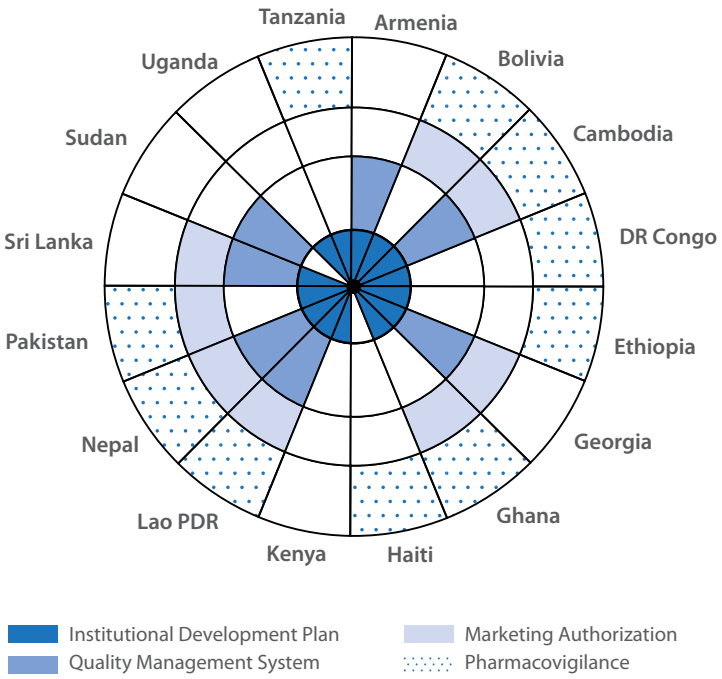
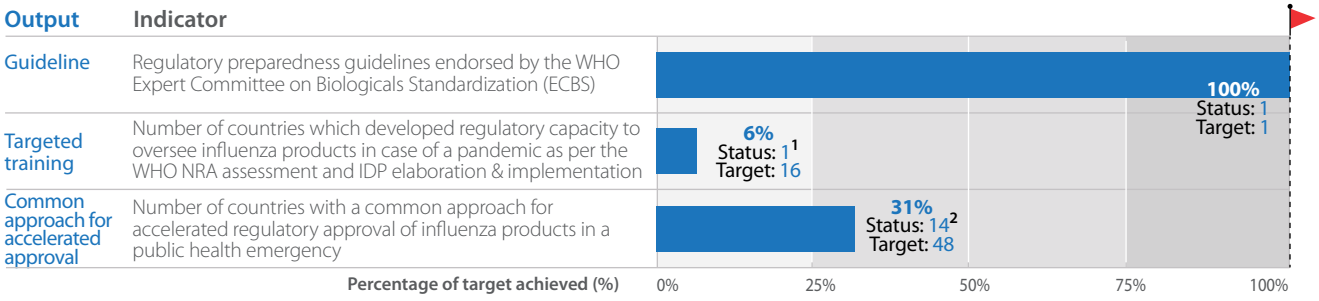


Figure 13: Regulatory capacity building indicators: 2016 status and 2017 targets

OUTCOME: Countries with weak or no regulatory capacity will be able to regulate influenza products including vaccines, antivirals & diagnostics, and to accelerate national approval of these commodities in case of an influenza pandemic.



[1] The NRA of 14 of 16 PIP priority countries were assessed. One country has acceptable capacity in the three areas of assessment: regulatory systems, marketing authorization and pharmacovigilance. Implementation of Institutional Development Plans (IDP) started in 14 of the 16 PIP countries. Enhancing regulatory capacity is a long-term investment and impact data is not yet available.

[2] United Republic of Tanzania, Uganda, Ethiopia, Ghana, Kenya, Mozambique, Burkina Faso, Cameroon, Benin, Mali, Armenia, Sri Lanka, Bhutan and Myanmar. An Advocacy Workshop for the Implementation of the Collaborative Procedure, Case Study for the Registration of Prequalified Influenza Vaccines, was also conducted on 21-25 Nov 2016, in Tunis.

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The fast track to approval

... WHO, through the PC, is working to help PIP priority countries benefit from a common 'fast track' approval processes for key influenza products.

When a pandemic strikes, speed is of the essence – affected communities simply cannot afford to have vaccines, diagnostics and antivirals held up due to slow regulatory approval. That is why WHO, through the PC, is working to help PIP priority countries benefit from a common 'fast track' approval processes for key influenza products. Over the past year, PC funds supported advocacy workshops in the Eastern Mediterranean region to promote the benefits of strengthening regulatory systems for accelerated approval, and raise awareness of the options available for doing so.

One of those options is for countries to recognize the WHO Prequalification (PQ) programme. This is the most common approach: globally, nearly two-thirds of National Regulatory Authorities (NRAs) (61%) accept PQ as the basis for approval of vaccine products.

Another option is to use the WHO collaborative procedure for accelerated registration of WHO PQ products.[14] Due to PIP advocacy, this option is gaining popularity among PIP priority countries and 14 out of 48 countries have now adopted the procedure.

Countries are also joining regional regulatory harmonization efforts, such as the African Medicines Regulatory Harmonization (AMRH)[15].

[14] Collaborative procedure between the WHO Prequalification Team and national regulatory authorities in the assessment and accelerated national registration of WHO-prequalified pharmaceutical products and vaccines. In: WHO Expert Committee on specifications for pharmaceutical preparations: fiftieth report. Geneva: World Health Organization; 2016: Annex 8 (WHO Technical Report Series, No. 996; http://apps.who.int/medicinedocs/documents/s22397en/s22397en.pdf, accessed 31 May 2017).

[15] For more information, see: http://www.nepad.org/content/african-medicines-regulatory-harmonisation-armh-programs (accessed 31 May 2017).

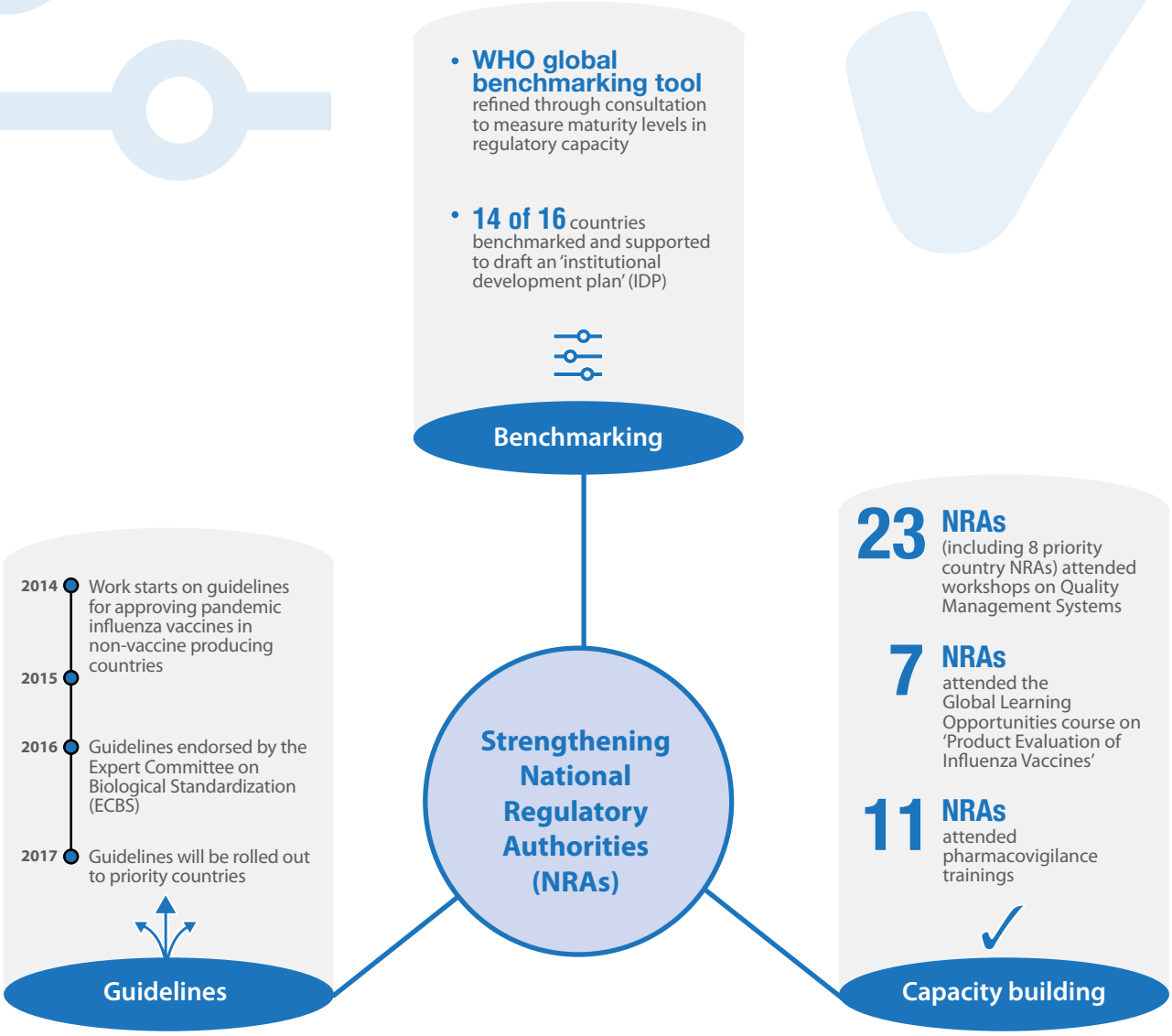


Figure 14: PC's three-pronged approach to support NRAs respond to a pandemic effectively and efficiently

Planning for deployment

Streamlining the supply chain

During a pandemic, countries without purchasing power or production capacity rely on donations to access pandemic products. But these life-saving supplies will only reach vulnerable countries and communities if global supply chains are clear, efficient and secure.

... supply chains must be able to come together very quickly, with manufacturers, suppliers, governments, civil society and commercial transporters consolidating their efforts into a common approach...

Perhaps most important, supply chains must be able to come together very quickly, with manufacturers, suppliers, governments, civil society and commercial transporters consolidating their efforts into a common approach that gets products swiftly and smoothly from the countries where they are produced or stockpiled to the countries where they are needed.

It's not just at the global level that supply chains need streamlining. In-country supply chains must also be ready and able to respond in an emergency if vaccine delivery is not to be delayed.

Through the PC, WHO is working to strengthen plans and systems for deployment at both global and national levels by:

- developing and running online simulation exercises that test critical interactions and identify bottlenecks in global supply chains; and
- helping countries to assess and update their national deployment plans so that they can quickly mobilize to a state of readiness during a pandemic.

Figure 15: PIP priority countries for planning for deployment work

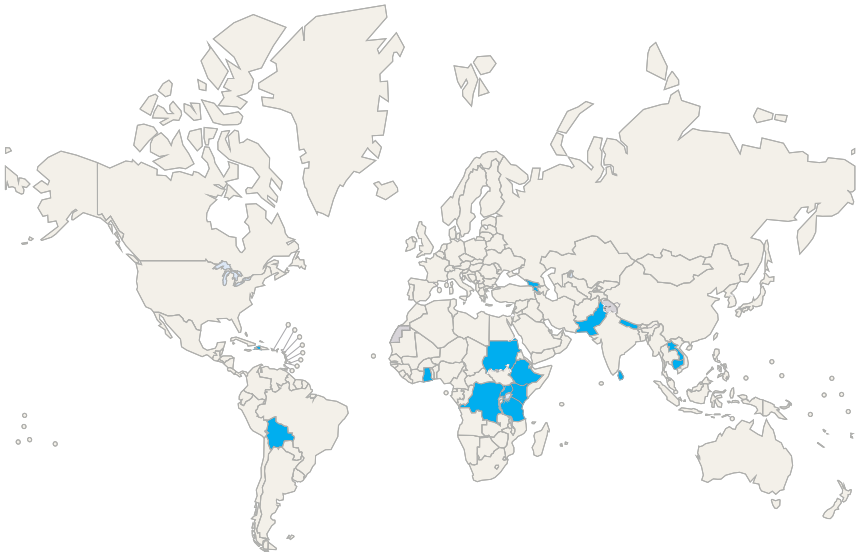


Figure 16: Progress towards the development of an online global deployment simulation tool, PIPDEPLOY

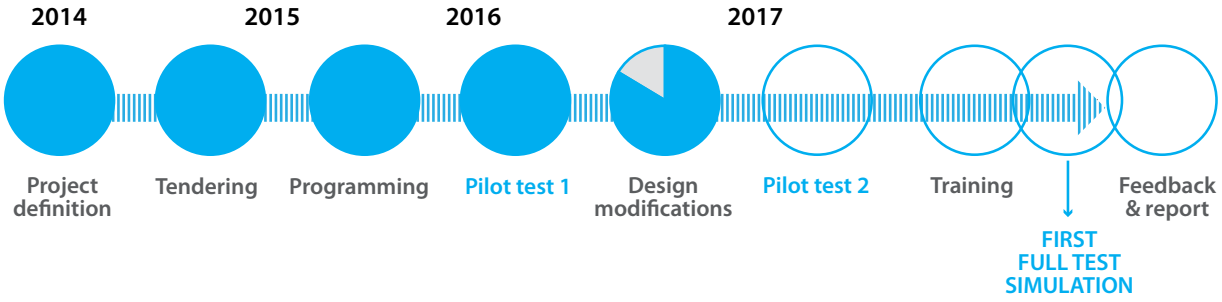
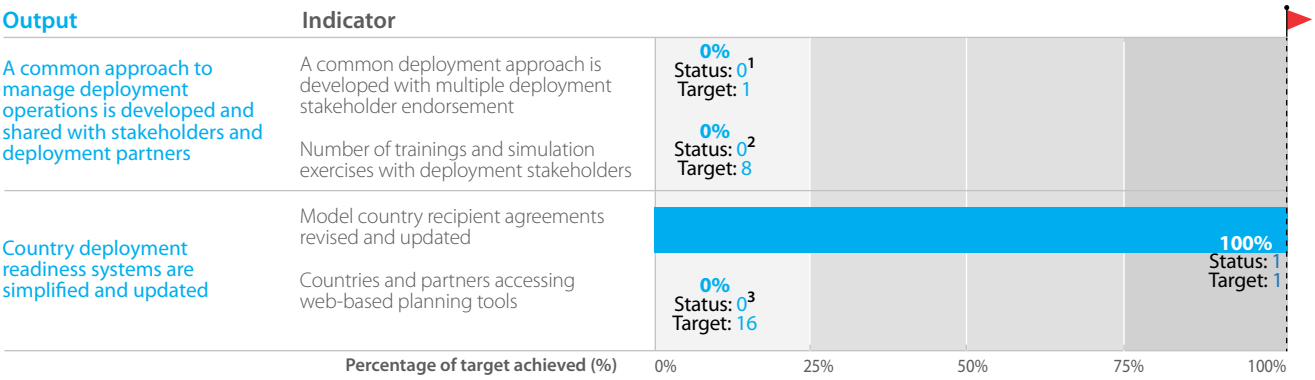


Figure 17: Planning for deployment indicators: 2016 status and 2017 targets

OUTCOME: Plans for deployment of pandemic supplies including vaccines, antivirals and diagnostics, will be developed and regularly updated



[1] Reviews and research to develop a common deployment approach with multiple stakeholder endorsement finalized
[2] PIPDEPLOY simulation tool to test and improve deployment of influenza products to countries scheduled for 2017
[3] Country field testing to take place in 2017. New planning approaches are under development.

... PIPDEPLOY, has been designed to capture the time it takes to perform key interactions in the supply chain, identifying how often critical path deadlines are missed and how often significant change is introduced...

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Simulations for success

When it comes to systems testing, online simulations are increasingly the tool of choice for identifying process gaps, highlighting skill development needs and testing how process concepts impact results. Since 2014, PC funds have been used to support the development of a simulation tool to test global deployment systems by identifying the bottlenecks that happen when multiple stakeholders come together in a public health emergency. The tool, known as PIPDEPLOY, has been designed to capture the time it takes to perform key interactions in the supply chain, identifying how often critical path deadlines are missed and how often significant change is introduced – so that improvements can be made.

The building of PIPDEPLOY began in 2016, following a country feedback survey the year before. Today, it is in its final stages of technical development, with the first live simulation planned for 2017 (see **Figure 16**). Even in its development phases, PIPDEPLOY has attracted the attention and participation of a diverse range of stakeholders and is already proving to be valuable in strengthening a community of practice around deployment.

Quantifying gaps in national plans

In 2009–2010, during the A(H1N1) pandemic, countries eligible for donated vaccines were slow to achieve a "ready to deploy" status; they were also slow to ask for external support. PC funds have been used to retrospectively assess the 2009 national vaccine deployment plans (NVDPs) of the most vulnerable countries and quantify the most common gaps and identify the technical assistance needed to accelerate readiness. Results show that many 2009 plans focused on mobilizing finance rather than actual deployment pandemic products and supplies. For example, they did not cover implementation details such as deployment route mapping, transport capacity by sub-national zones, or intermediate storage locations and related capacities.

In 2016, a second analysis of NVDPs since 2010 suggests that capacity development initiatives can help deliver more detailed plans. The analysis shows that those countries that had engaged in such initiatives displayed marked improvements in the quality and depth of their plans.

Risk communications

Helping countries provide effective public health information during a pandemic

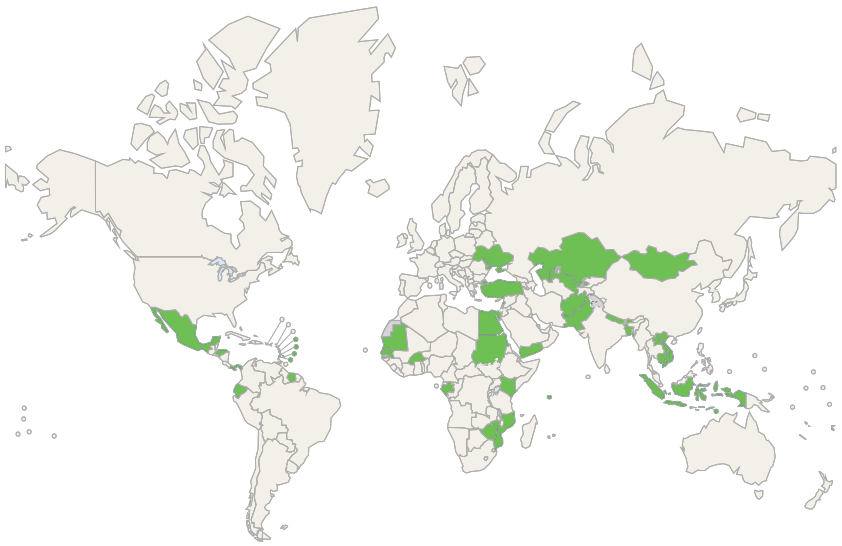
At all stages of a pandemic, fast, effective and transparent communication is needed: to give lifesaving information to people in affected areas; and to update concerned citizens, decision makers, health workers and donors across the world on the unfolding impacts and health response. As such, risk communications has long been a priority under the IHR.[16] And it has become even more important with the explosion of real-time information through social media.

The positive influence of effective risk communications during the Ebola tragedy as well as recent outbreaks of, for example, avian influenza and yellow fever, has convinced stakeholders that communicating risk in health emergencies is essential and can have a serious impact on the epidemic response. Risk communications is now a core, crosscutting element of pandemic preparedness and response efforts, within and outside of WHO.

Through the PC, WHO is working with governments and partners to ensure that the policies, procedures and skills to communicate effectively to national and international audiences during a pandemic are in place by:

- developing guidelines, tools, resources, curricula and materials to disseminate pandemic influenza skills and knowledge;
- providing advice and training (both online and off) for governments, journalists and others;
- building national capacities in PIP priority countries; and
- supporting an emergency communications network that can deploy experts in risk communications during a crisis.

Figure 18: PIP priority countries for risk communications work.



[16] Implementation of the International Health Regulations (2005). Geneva: World Health Organization; 2011. (http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_10-en.pdf, accessed 29 June 2017)

180 emergency communicators trained with a pandemic emphasis

1 800 people from 125 countries trained in risk communications through workshops

10 000+ people accessed online training material

Figure 19: Change in the IHR risk communication capacity level between 2012 and 2015: On average, PIP priority countries improved capacity by more than 40%, compared with a global average of 15%

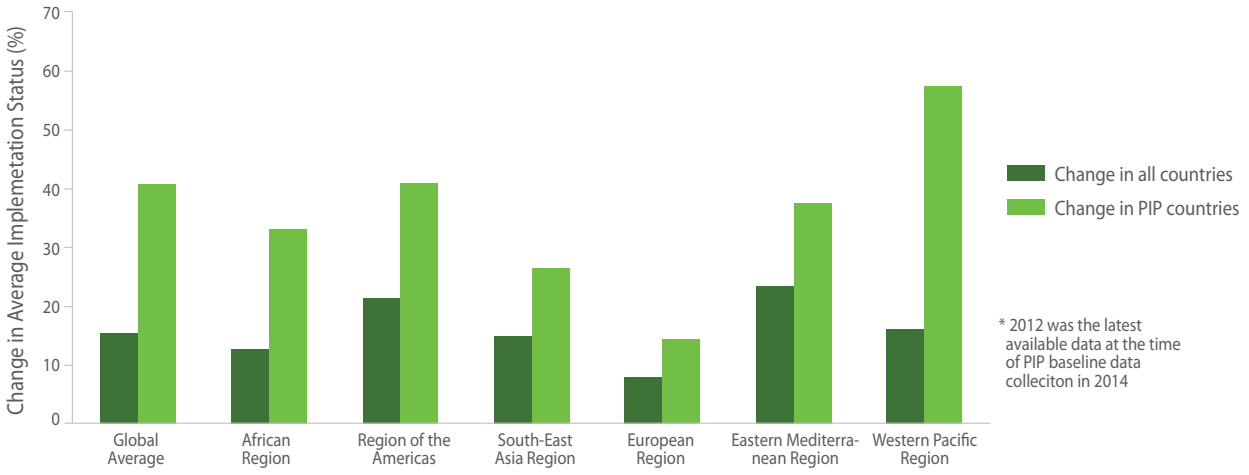
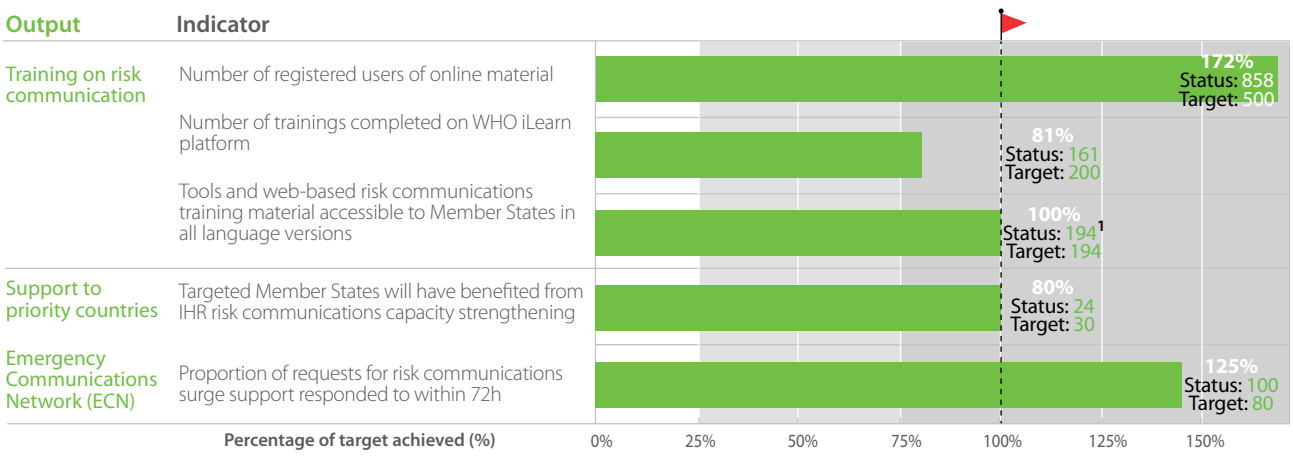


Figure 20: Risk communications indicators: 2016 status and 2017 targets

OUTCOME: Global risk communications capacities are strengthened with a special focus on pandemic influenza commmunications



[1] Core materials in all languages. Advanced materials mainly in English.

Risk communication for One Health

Around three-quarters of emerging infectious diseases – including pandemic influenza – are caused by pathogens that spread to people from animals or animal products.[17] This makes preparing, detecting and responding to an outbreak reliant on joint action across animal health, human health and environmental health sectors. With PC support, WHO has joined forces with the World Organization for Animal Health (OIE) and the Food and Agriculture Organization (FAO) to strengthen skills, plans and real-time response across three sectors (see **Figure 21**).

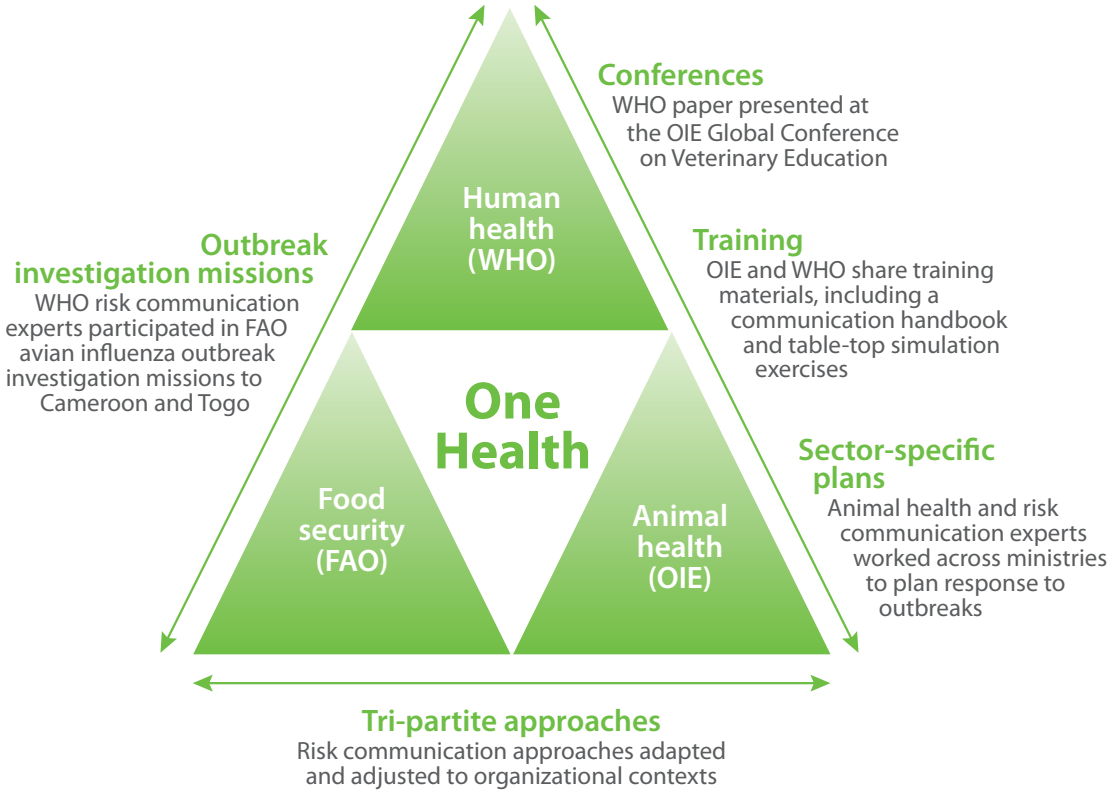


Figure 21: Activities for a One Health approach to risk communications for pandemic influenza

[17] Schoub, B.D. Zoonotic diseases and human health: The human influenza example. Onderstepoort Journal of Veterinary Research. 2012;79(2). doi: 10.4102/ojvr.v79i2.489. The control of neglected zoonotic diseases [website]. World Health Organization; 2017 (http://www.who.int/zoonoses/control_neglected_zoonoses/en/, accessed 31 May 2017).

Information for the front lines

People living in areas at high risk of a disease outbreak need good communications to protect their own health, and take informed decisions that can safeguard themselves and those around them. The PC funds activities at both national and international levels to help citizens and communities prevent, prepare for, and respond to an emergency.

At a national level this includes supporting context-specific communication. For example, in Cambodia, because poultry movement increases during Chinese and Khmer New Year (between February and April), PIP funds were used to develop specific messages for farmers and the public during these months. In Mongolia, the Ministry of Health and partners conduct daily media and social media monitoring and study public perceptions to identify information gaps. They then use targeted communications – including press conferences, agency websites, media interviews and social media – to fill the gaps, correct misinformation and manage rumours.

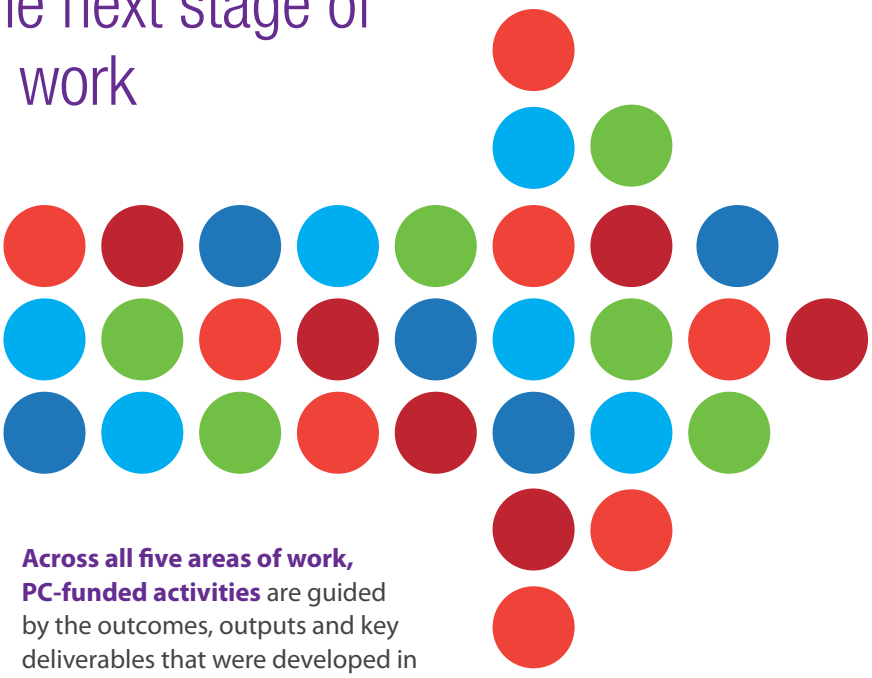
At an international level, PIP supports *www.OpenWHO.org* – a new web-based platform that provides interactive courses and learning resources for responders and decision makers on the front lines of pandemic preparedness and response.

OpenWHO will host all the PC-funded tools and resources for risk communications – including an online training course and a handbook, both of which are available in four or more languages. The tools are available at: *www.who.int/risk-communication/training/en/*.

For more information on PC-funded risk communications: *www.who.int/risk-communication/pandemic-influenza-preparedness*

LOOKING FORWARD

Planning the next stage of PC-funded work



Across all five areas of work, PC-funded activities are guided by the outcomes, outputs and key deliverables that were developed in 2013, and which are set out in the high-level *Partnership Contribution Implementation Plan 2013–16 (HLIP I)*.[18] Last year, the plan's lifespan was extended to the end of 2017 to allow for activities to be completed and evaluated, and to make time to start working on the next high-level implementation plan, HLIP II.

The new plan, which will shape PC activities to 2023, will build on lessons learned from putting HLIP I into practice. That includes reflecting on the obstacles to building capacity faced over the past four years and harnessing WHO staff and partners' experience to focus on tried and tested solutions.

The new implementation plan will also reflect a changed landscape for health emergencies, as well as the results of two processes undertaken in 2016:

1. A *gaps and needs analysis*[19]. The PIP Secretariat completed an analysis of preparedness gaps and needs, and used it to consider the value of the PC achievements to date and to suggest future directions of work.
2. An *independent external evaluation*.[20,21] An external team was convened to independently evaluate PC-funded activities. For each area of work, the team assessed progress towards HLIP I outcomes and outputs, measured impacts on preparedness, and identified lessons learned to inform the next implementation plan.

[18] PIP Framework. Partnership Contribution Implementation Plan 2013–2016. Geneva: World Health Organization; 2014 (updated 2015) (http://www.who.int/influenza/pip/pip_pcimpplan_update_31jan2015.pdf?ua=1&ua=1, accessed 29 March 2017).

[19] Analysis of Gaps and Needs for the PIP PC Implementation. Geneva: World Health Organization; 2017 (http://www.who.int/influenza/pip/benefit_sharing/PIP_GapAnalysis2017.pdf?ua=1 , accessed 28 June 2017)

[20] External Evaluation of the Pandemic Influenza Pandemic Preparedness Partnership Contribution – High-Level Implementation Plan 2013-2016. Geneva: Dalberg; 2016 (http://who.int/about/evaluation/pip_evaluation_report.pdf?ua=1 , accessed 4 July 2017)

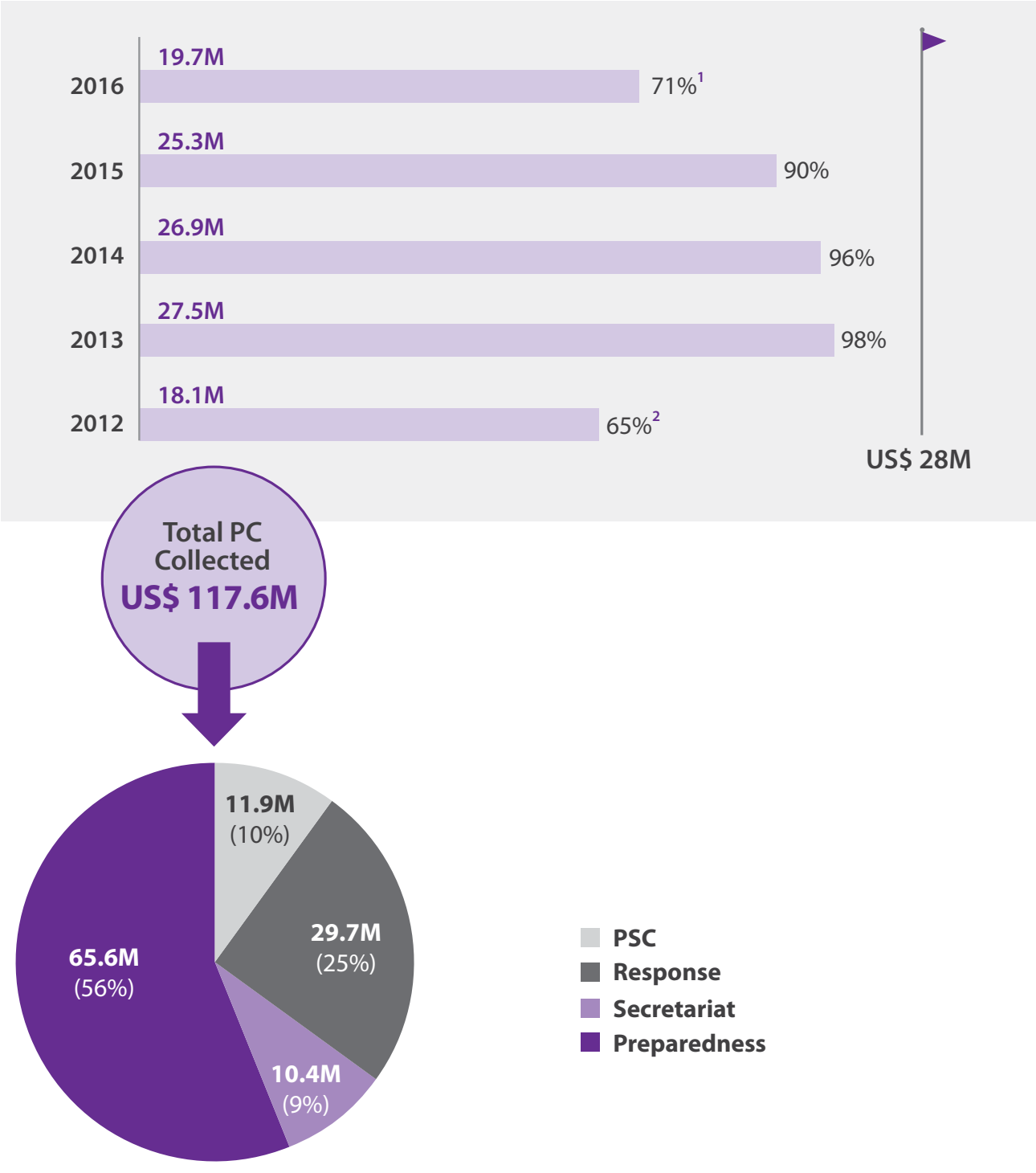
[21] See the Management Response available at http://who.int/about/evaluation/mr_pip.pdf?ua=1

Find out more

- All PIP documents and resources are available on the *PIP website*
- Financial & programmatic information can be found on the *PC Implementation Portal*

Annex 1
Finances

Figure 22: PC collection in 2012-2016



[1] Sanofi Pasteur's 2016 Partnership Contribution was received in May 2017 bringing the 2016 total PC collection close to US$ 27 million. This contribution is not reflected in Figure 22 as it was received outside the timeframe of this report.

[2] This was a voluntary contribution made by seven manufacturers prior to full implementation of the PC formula in 2013

Figure 23: Expenditures across each Area of Work (net of PSC) , 2014-2016

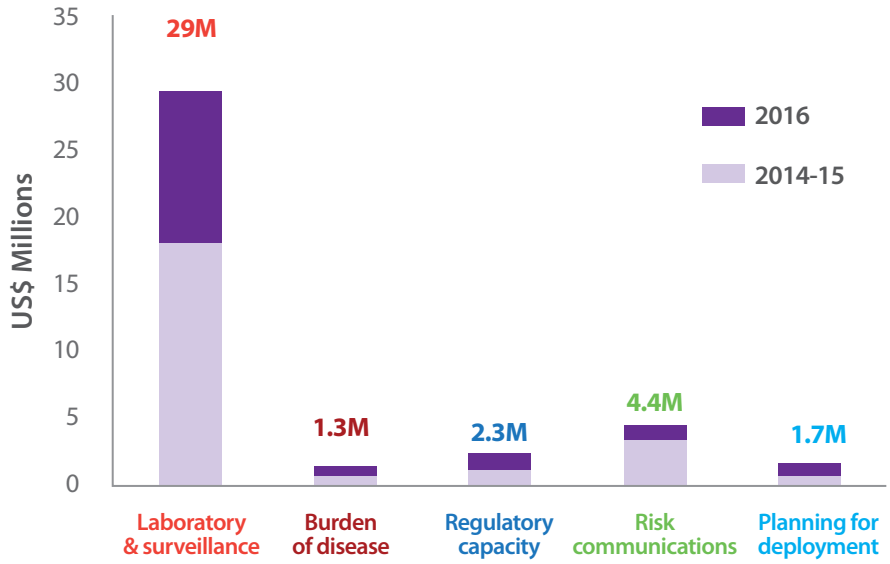


Figure 24: Laboratory & surveillance expenditures by major office (net of PSC), 2014-2016

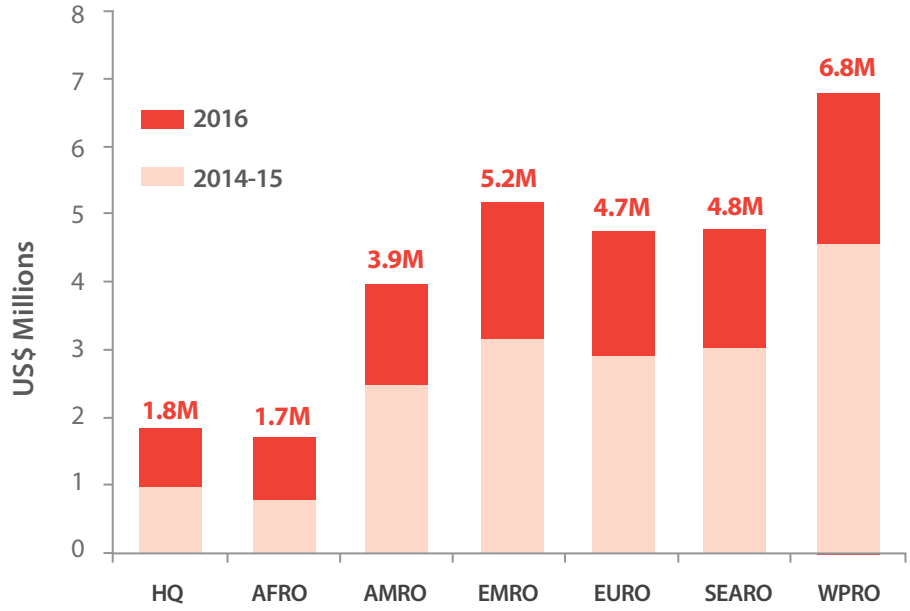


Table 2: Fund allocation and expenditure (US$) 1 January 2013 - 31 December 2016 (based on funds received 1 December 2012 – 31 December 2016)

AREA OF WORK	Output	Allocated 2013 - 16	Expenditure 2013 - 16 [a]	Expenditure 2013	Expenditure 2014 - 15	Expenditure 2016	Implementation %	Balance
Laboratory & Surveillance	Detection capacity	13'046'614	10'293'097		6'010'779	4'282'318		2'753'517
	Monitoring capacity	9'170'786	6'361'512		4'552'791	1'808'721		2'809'274
	Strengthening networks	14'942'039	12'345'088		7'315'677	5'029'411		2'596'951
	Sub-total	**37'159'439**	**28'999'697**	-	**17'879'247**	**11'120'450**	**78%**	**8'159'742**
Burden of Disease	Regionally representative estimates	1'302'827	899'026		609'710	289'316		403'801
	Global estimates	1'337'132	459'596		23'396	436'200		877'536
	Sub-total	**2'639'959**	**1'358'622**	-	**633'106**	**725'516**	**51%**	**1'281'337**
Regulatory Capacity	Guidelines	237'282	216'687		89'481	127'206		20'595
	Targeted training	2'791'562	2'037'086		1'003'531	1'033'555		754'476
	Common approach for accelerated approval	203'556	44'398		24'416	19'982		159'158
	Sub-total	**3'232'400**	**2'298'171**	-	**1'117'428**	**1'180'743**	**71%**	**934'229**
Risk Communications	Training on risk communication	2'302'821	2'278'284		1'720'799	557'485		24'537
	Support to priority countries	2'773'976	1'526'558		1'066'349	460'209		1'247'418
	Emergency communications network	795'615	624'304		562'822	61'482		171'311
	Sub-total	**5'872'412**	**4'429'146**	-	**3'349'970**	**1'079'176**	**75%**	**1'443'266**
Planning for Deployment	Deployment operations	1'749'523	1'318'465		473'687	844'778		431'058
	Country readiness	805'682	350'009		201'829	148'180		455'673
	Sub-total	**2'555'205**	**1'668'474**	-	**675'516**	**992'958**	**65%**	**886'731**
Total for Preparedness (net of PSC for 2014-2016)		**51'459'415**	**38'754'110**	-	**23'655'267**	**15'098'843**	**75%**	**12'705'305**
Unallocated Funds [b]		14'104'157	-					14'104'157
PIP Secretariat (net of PSC for 2013-2016)		10'406'928	7'268'185	929'290	3'277'278	3'061'617	**70%**	3'138'743
PSC (13%) on Preparedness & PIP Secretariat Funds		9'876'165	5'982'898	120'808	3'501'231	2'360'859		3'893'267
Total for Preparedness & Secretariat (with PSC)		**85'846'665**	**52'005'193**	**1'050'098**	**30'433'776**	**20'521'319**	**72%[c]**	**33'841'472**
Response Funds including PSC (7%)		31'751'514	-					31'751'514
Grand Total for PIP		**117'598'179 [d]**	**52'005'193**	**1'050'098**	**30'433'776**	**20'521'319**		**65'592'986 [e]**

[a] Expenditure for the PIP Secretariat is for the period 2013-16 and for Preparedness 2014-16.
[b] Unallocated funds include Partnership Contributions received after allocations for implementation of 2016 work plans were made. These funds (US$ 14,104,157) were not used to calculate the total % implementation. See the next footnote.
[c] Calculated on funds allocated only (US$ 85,846,665 minus unallocated funds US$ 14,104,157).
[d] This is the total Partnership Contribution received (1 December 2012 – 31 December 2016)
[e] This figure includes Response funds (US$ 31,751,514) which are not available until the time of a pandemic.

Interim certified financial statement
as at 31 December 2015

World Health Organization

Pandemic Influenza Preparedness (PIP) – Secretariat, Preparedness and Response
Interim Financial Statement as at 31 December 2015
(expressed in US dollars)

	Secretariat (10%)	Response (30%)	Preparedness (70%)	Total
Revenue				
Receipts from:				
Adimmune Corporation	6,554	17,697	41,292	65,543
Alerre Inc.	7,809	21,083	49,196	78,088
Baxter International Inc.	20,921	56,485	131,799	209,205
Beijing Tiantan Biological Procucts Co. Ltd.	14,952	40,370	94,196	149,518
Cadila Healthcare Ltd. (R&D Center)	492	1,330	3,102	4,924
Cepheid	280	756	1,763	2,799
Changchun Institute of Biological Products Co., Ltd.	14,952	40,370	94,196	149,518
China National Biotec Group	2,000	5,400	12,600	20,000
CSL Limted	174,434	470,974	1,098,940	1,744,348
Denka Seiken Co. Ltd.	129,577	349,859	816,338	1,295,774
Focus Diagnostics, Inc.	8,385	22,639	52,821	83,845
Glaxosmithkline (GSK)	2,417,209	6,526,465	15,228,419	24,172,093
Government Pharmaceutical Organization (GPO)	281	756	1,763	2,800
Green Cross Corporation	102,386	276,443	645,034	1,023,863
Hoffmann - La Roche and Co. Ltd.	1,496,464	4,040,454	9,427,727	14,964,645
Indevr, Inc.	499	1,346	3,139	4,984
Institute of Vaccines and Medical Biologicals (IVAC)	280	756	1,763	2,799
Kaketsuken	190,555	514,498	1,200,497	1,905,550
Kitasato Daiichi Sankyo Vaccine Co. Ltd.	70,731	190,974	445,605	707,310
Lanzhou Institute of Biological Products	217	587	1,369	2,173
Medicago Inc.	498	1,346	3,139	4,983
Medimmune	249,198	672,831	1,569,937	2,491,966
Nanosphere Inc.	499	1,346	3,140	4,985
Novartis	1,529,273	4,129,040	9,634,428	15,292,741
Omninvest Vaccine Manufacturing, Researching & Trading Ltd.	14,943	40,350	94,149	149,442
Princeton Biomeditech Corporation	280	756	1,763	2,799
Protein Sciences Corporation	495	1,334	3,115	4,944
PT Bio Farma (Persero)	499	1,346	3,139	4,984
QIAGEN	280	756	1,763	2,799
Quidel Corporation	281	756	1,763	2,800
Response Biomedical Corporation	542	1,463	3,412	5,417
Saint-Petersburg Scientific Research Institute of Vaccines & Sera	3,079	8,314	19,398	30,791
Sanofi Pasteur	1,705,703	4,605,398	10,745,928	17,057,029
Serum Institute of India Ltd.	2,784	7,515	17,533	27,832
Shanghai Institute of Biological Products Co., Ltd.	24,920	67,283	156,994	249,197
Sinovac Biotech Ltd.	24,920	67,283	156,994	249,197
Takeda Pharmaceuticals International GmbH	545	1,468	3,425	5,438
The Research Foundation for Microbial Disease of Osaka University	169,449	457,512	1,067,528	1,694,489
UMIN Pharm INC.	280	756	1,763	2,799
United States - Becton Dickinson and Company (BD)	28,143	75,987	177,302	281,432
Vabiotech	497	1,342	3,130	4,969
Total Revenue	8,416,088	22,723,424	53,021,302	84,160,814
Expenditure				
2012-2013	1,050,098			1,050,098
2014-2015	3,703,324	-	26,730,454	30,433,778
Total Expenditure	4,753,422	-	26,730,454	31,483,876
Balance as at 31 December 2015	**3,662,666**	**22,723,424**	**26,290,848**	**52,676,938**

I certify that the above statement reflects correctly the revenue and expenditure recorded in the WHO Global Accounting System.

Jane Stewart
Director Accounts
14 February 2018

AN - 60478, 61722 and 60856 - 31.12.2015 consolidated ICFS

Statement of Financial Performance-by Donor/Award Entity : 'WHO' , From date : '01-DEC-2012 , To date : '31-DEC-2013' , Award Number : 60478

Sum of Expense	
Expense Type	**Total (USD)**
Staff Costs	806,106
Contractual Service, General	54,904
Travel	64,670
General Operating Costs	3,610
Programme support costs (PSC)	120,808
Total	**1,050,098**

Statement of Financial Performance-by Donor/Award Entity : 'WHO' , From date : '01-JAN-2014 , To date : '31-DEC-2015' , Award Number : 60478

Sum of Expense	
Expense Type	**Total (USD)**
Staff Costs	2,031,186
Equipment, Vehicles and Furniture	21,133
Contractual Services	648,513
Travel	505,648
General Operating Costs	70,797
Programme support costs (PSC)	426,046
Total	**3,703,324**

Statement of Financial Performance-by Donor/Award Entity : 'WHO' , From date : '01-JAN-2014' , To date : '31-DEC-2015' , Award Number : 61722

Sum of Expense	
Expense Type	**Total (USD)**
Staff Costs	5,441,263
Medical Supplies and Materials	2,259,740
Equipment, Vehicles and Furniture	414,378
Contractual Services	7,960,953
Travel	4,177,045
Transfers and Grants	2,755,967
General Operating Costs	645,924
Programme support costs (PSC)	3,075,185
Total	**26,730,454**

Interim certified financial statement
as at 31 December 2016

World Health Organization

Pandemic Influenza Preparedness (PIP) – Secretariat, Preparedness and Response

Interim Financial Statement as at 31 December 2016
(expressed in US dollars)

	Secretariat - 10%	Response - 30%	Preparedness - 70%	Total
Opening Balance - 1 January 2016	3,662,666	22,723,424	26,290,848	52,676,938
Revenue				
Receipts from:				
Alere Inc	3,907	10,549	24,615	39,071
Becton Dickinson and Company (BD)	1,500	4,050	9,450	15,000
Cadila Healthcare Ltd (R&D Center)	534	1,441	3,362	5,337
Cepheid	534	1,441	3,362	5,337
Changchun Institute Of Biological Products Co., Ltd.	5,871	15,853	36,989	58,713
CSL Limited	92,340	249,317	581,739	923,396
Denka Seiken Co. ltd.	45,888	123,899	289,097	458,884
DiaSorin Molecular LLC	2,969	8,017	18,706	29,692
Fast Track Diagnostics	814	2,197	5,125	8,136
Fluart Innovative Vaccines LTD	16,013	43,234	100,880	160,127
GlaxoSmithKline (GSK)	593,850	1,603,393	3,741,251	5,938,494
Government Pharmaceutical Organization (GPO)	534	1,441	3,362	5,337
Green Cross Corporation	32,392	87,458	204,068	323,918
Hoffmann-La Roche and Co Ltd	1,174,270	3,170,528	7,397,898	11,742,696
Institute Of Vaccines And Medical Biologicals (IVAC)	264	712	1,662	2,638
Kaketsuken	67,483	182,204	425,142	674,829
Kitasato Daiichi Sankyo Vaccine Co. ltd.	64,051	172,938	403,522	640,511
Medimmune	266,880	720,575	1,681,340	2,668,795
Nanotherapeutics Inc	534	1,441	3,362	5,337
NPO Petrovax Pharm	534	1,441	3,362	5,337
Princeton Biomeditech Corporation	534	1,441	3,362	5,337
Qiagen	5,871	15,853	36,989	58,713
Quidel Corporation	534	1,441	3,362	5,337
Research Foundation for Microbial Diseases of Osaka University	67,483	182,204	425,142	674,829
Saint Petersburg Scientific Research Institute of Vaccines and Sera	2,902	7,836	18,284	29,022
Sanofi Pasteur	500,000	1,350,000	3,150,000	5,000,000
Seqirus	377,904	1,020,341	2,380,797	3,779,042
Serum Institute of India Ltd.	534	1,441	3,362	5,337
Shanghai Institute Of Biological Products Co., Ltd.	16,013	43,234	100,880	160,127
Takeda Pharmaceuticals International GmbH	270	729	1,700	2,699
Vabiotech	534	1,441	3,362	5,337
Total Revenue	3,343,741	9,028,090	21,065,534	33,437,365
Expenditure				
2016	3,459,628	-	17,061,691	20,521,319
Balance as at 31 December 2016	**3,546,779**	**31,751,514**	**30,294,691**	**65,592,984**

I certify that the above statement reflects correctly the revenue and expenditure recorded in the WHO Global Accounting System.

Jane Stewart
Director Accounts

14 July 2017

WORLD HEALTH ORGANIZATION DIRECTOR ACCOUNTS ORGANISATION MONDIALE DE LA SANTÉ

CH-1211 GENEVA 27-SWITZERLAND Fax 791.31.11 CH-1211 GENEVE 27-SUISSE
AN 60478, 61722 and 60856 – 31.12.2016.Interim.doc

Statement of Financial Performance-by Donor/Award Entity : 'WHO' , From date : '01-JAN-2016 , To date : '31-DEC-2016' , Award Number : '60478'

Sum of Expense	
Expense Type	**Total (USD)**
Staff Costs	2,286,098
Medical Supplies and Materials	4,738
Equipment, Vehicles and Furniture	5,680
Contractual Services	396,156
Travel	329,102
General Operating Costs	39,843
Programme Support Costs (PSC)	398,010
Total	**3,459,628**

Statement of Financial Performance-by Donor/Award Entity : 'WHO' , From date : '01-JAN-2016' , To date : '31-DEC-2016' , Award Number : '61722'

Sum of Expense	
Expense Type	**Total (USD)**
Staff Costs	3,904,735
Medical Supplies and Materials	1,172,834
Equipment, Vehicles and Furniture	276,760
Contractual Services	5,186,739
Travel	2,519,143
Transfers and Grants	1,446,686
General Operating Costs	591,946
Programme Support Costs (PSC)	1,962,849
Total	**17,061,691**

Annex 2

PIP priority countries for each area of work

Table 4:
Laboratory and surveillance: 43 PIP priority countries

Country	Region
Afghanistan	EMRO
Algeria	AFRO
Armenia	EURO
Bangladesh	SEARO
Plurinational State of Bolivia	AMRO
Burundi	AFRO
Cambodia	WPRO
Cameroon	AFRO
Chile	AMRO
Costa Rica	AMRO
Djibouti	EMRO
Dominican Republic	AMRO
Democratic People's Republic of Korea	SEARO
Ecuador	AMRO
Egypt	EMRO
Fiji	WPRO
Ghana	AFRO
Haiti	AMRO
Indonesia	SEARO
Jordan	EMRO
Kyrgyzstan	EURO
Lao People's Democratic Republic	WPRO
Lebanon	EMRO
Madagascar	AFRO
Mongolia	WPRO
Morocco	EMRO
Mozambique	AFRO
Myanmar	SEARO
Nepal	SEARO
Nicaragua	AMRO
Republic of Congo	AFRO
Sierra Leone	AFRO
South Africa	AFRO
Suriname	AMRO
Tajikistan	EURO
United Republic of Tanzania	AFRO
Timor-Leste	SEARO
Turkmenistan	EURO
Ukraine	EURO
Uzbekistan	EURO
Viet Nam	WPRO
Yemen	EMRO
Zambia	AFRO

Table 5:
Burden of disease: 19 PIP priority countries

Country	Region
Albania	EURO
Armenia	EURO
Cambodia	WPRO
Chile	AMRO
Costa Rica	AMRO
Croatia	EURO
Egypt	EMRO
Georgia	EURO
Indonesia	SEARO
Kyrgyzstan	EURO
Lao People's Democratic Republic	WPRO
Madagascar	AFRO
Moldova, Republic of	EURO
Mongolia	WPRO
Nepal	SEARO
Oman	EMRO
Senegal	AFRO
Serbia	EURO
Ukraine	EURO

Note: after the baseline was set in 2013, 5 new PIP target countries were added to receive PC support for BoD estimation

Table 6:
Regulatory capacity building: 16 PIP priority countries

Country	Region
Armenia	EURO
Plurinational State of Bolivia	AMRO
Cambodia	WPRO
Democratic Republic of the Congo	AFRO
Ethiopia	AFRO
Georgia	EURO
Ghana	AFRO
Haiti	AMRO
Kenya	AFRO
Lao People's Democratic Republic	WPRO
Nepal	SEARO
Pakistan	EMRO
Sri Lanka	SEARO
Sudan	EMRO
United Republic of Tanzania	AFRO
Uganda	AFRO

Table 7:
Planning for deployment: 16 PIP priority countries

Country	Region
Armenia	EURO
Plurinational State of Bolivia	AMRO
Cambodia	WPRO
Democratic Republic of the Congo	AFRO
Ethiopia	AFRO
Georgia	EURO
Ghana	AFRO
Haiti	AMRO
Kenya	AFRO
Lao People's Democratic Republic	WPRO
Nepal	SEARO
Pakistan	EMRO
Sri Lanka	SEARO
Sudan	EMRO
United Republic of Tanzania	AFRO
Uganda	AFRO

Table 8:
Risk communications: 38 PIP priority countries

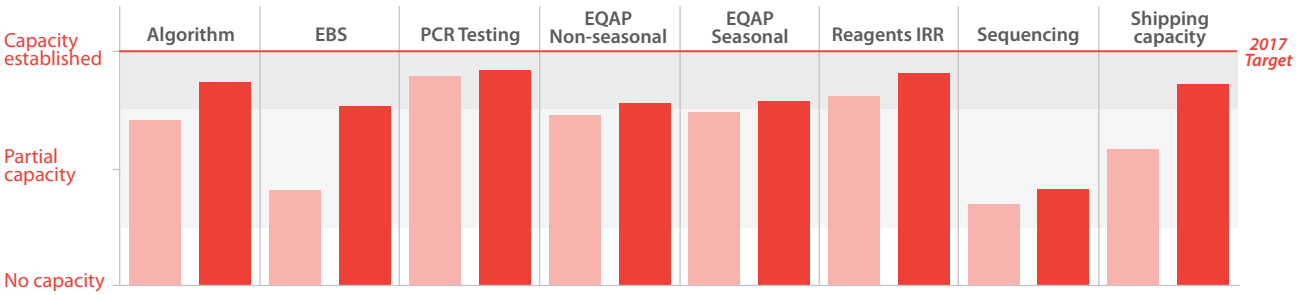
Country	Region
Afghanistan	EMRO
Bangladesh	SEARO
Barbados	AMRO
Bhutan	SEARO
Burkina Faso	AFRO
Cambodia	WPRO
Dominica	AMRO
Ecuador	AMRO
Egypt	EMRO
Fiji	WPRO
Gabon	AFRO
Honduras	AMRO
Indonesia	SEARO
Kazakhstan	EURO
Kenya	AFRO
Lao People's Democratic Republic	WPRO
Lebanon	EMRO
Mauritania	AFRO
Mexico	AMRO
Moldova, Republic of	EURO
Mongolia	WPRO
Mozambique	AFRO
Nepal	SEARO
Pakistan	EMRO
Panama	AMRO
Saint Lucia	AMRO
Saint Vincent and the Grenadines	AMRO
Senegal	AFRO
Seychelles	AFRO
Sudan	EMRO
Suriname	AMRO
Timor-Leste	SEARO
Turkey	EURO
Ukraine	EURO
Uzbekistan	EURO
Viet Nam	WPRO
Yemen	EMRO
Zimbabwe	AFRO

Annex 3

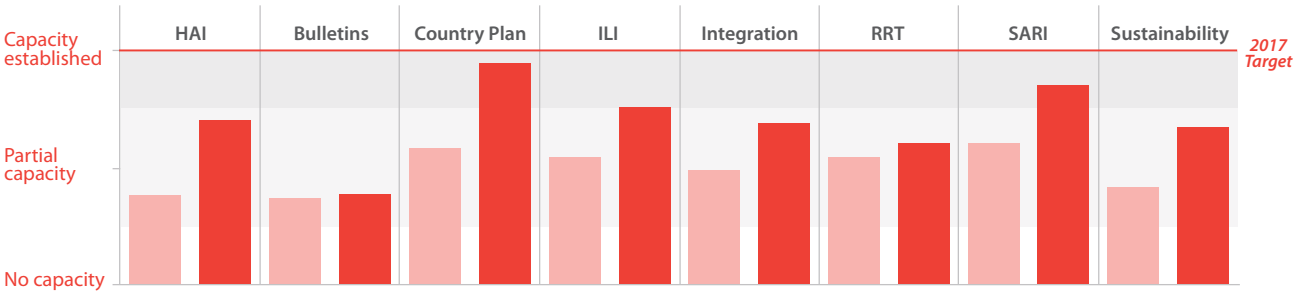
Laboratory & surveillance indicator results

Global

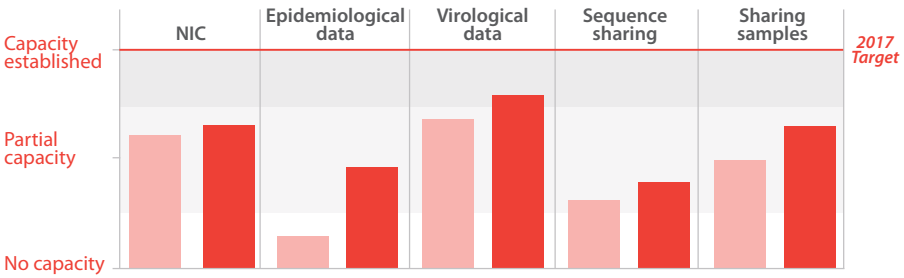
Detection capacity

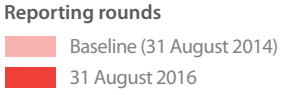


Monitoring capacity



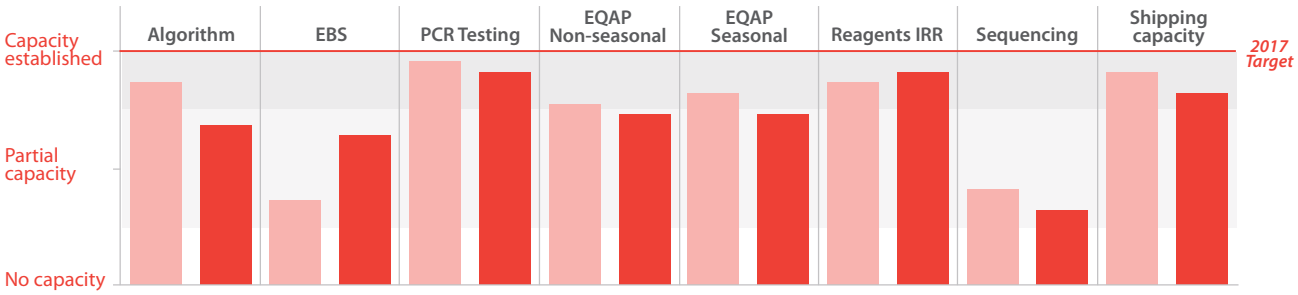
Sharing capacity (Strengthening networks)





AFRO

Detection capacity



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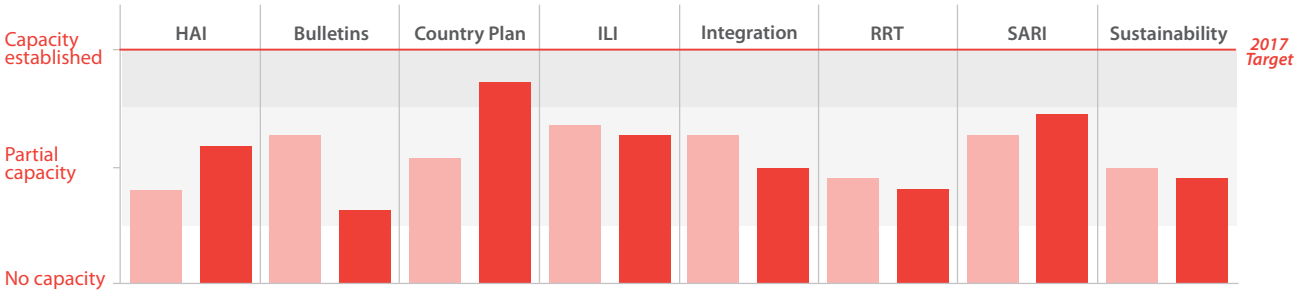

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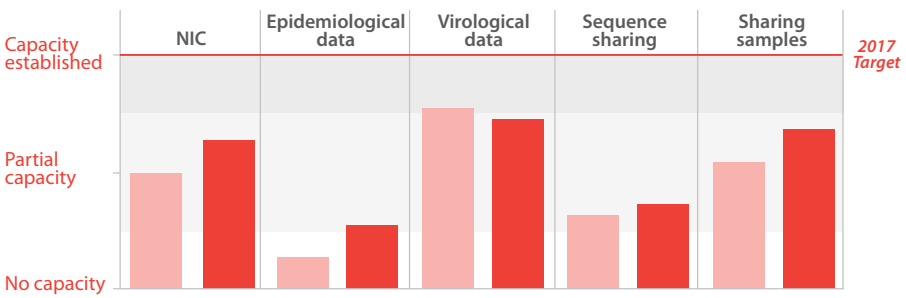
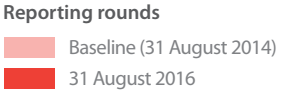
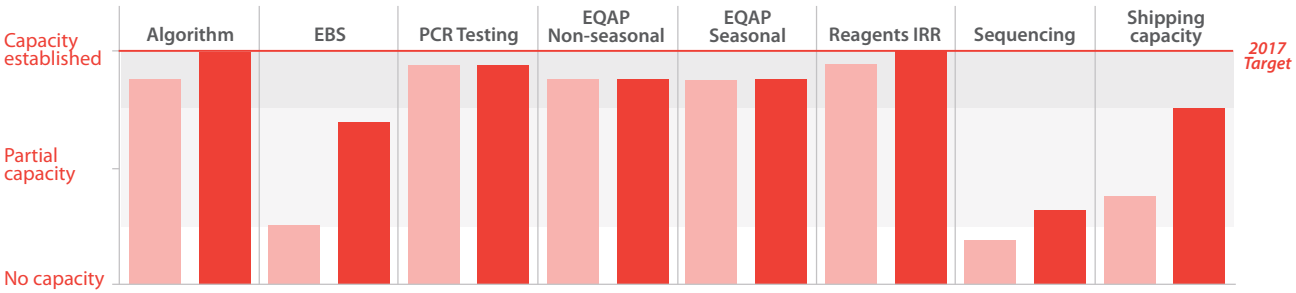


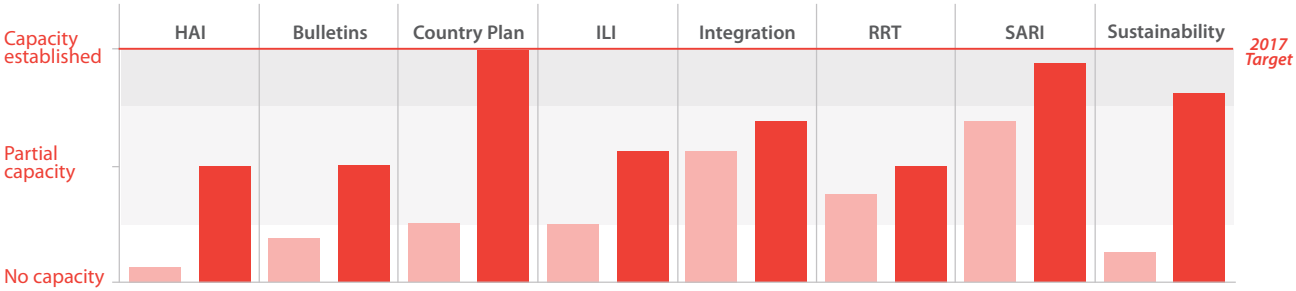


AMRO

Detection capacity



Monitoring capacity



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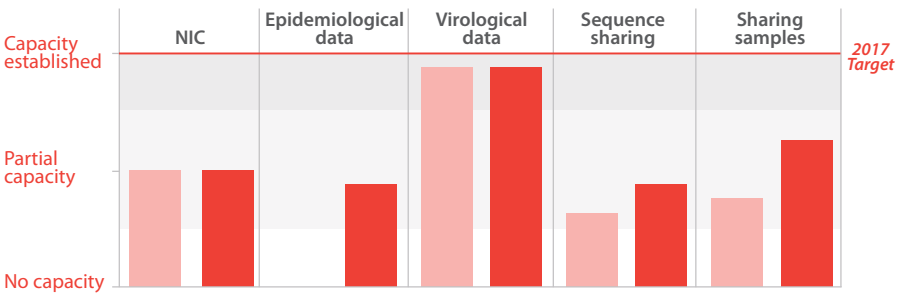
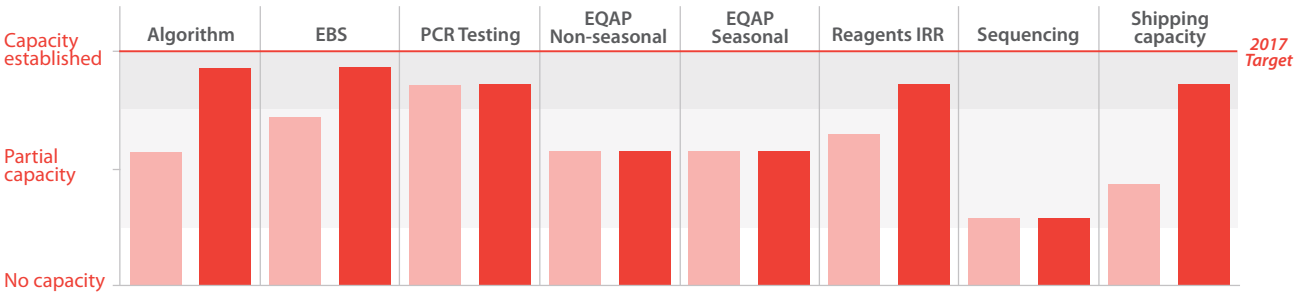


Reporting rounds

- Baseline (31 August 2014)
- 31 August 2016

EMRO

Detection capacity



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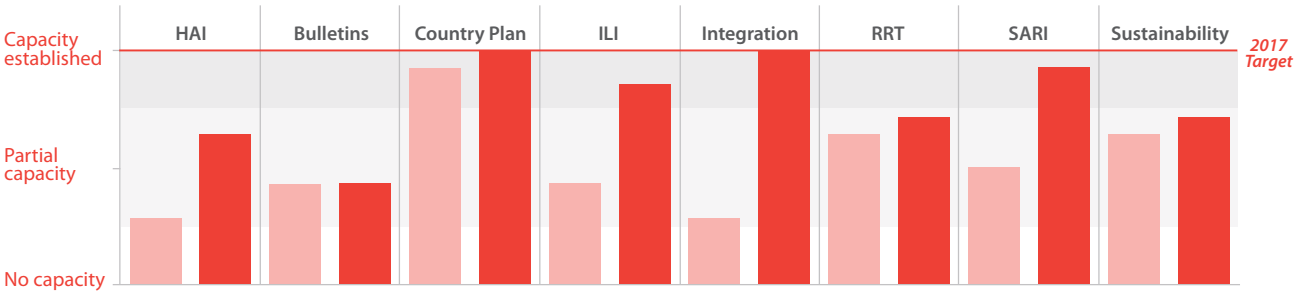

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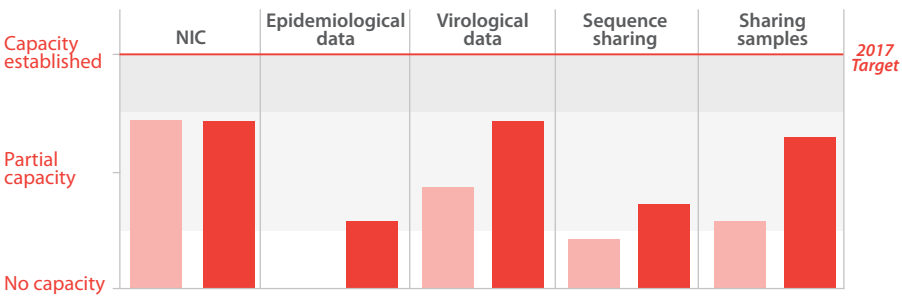
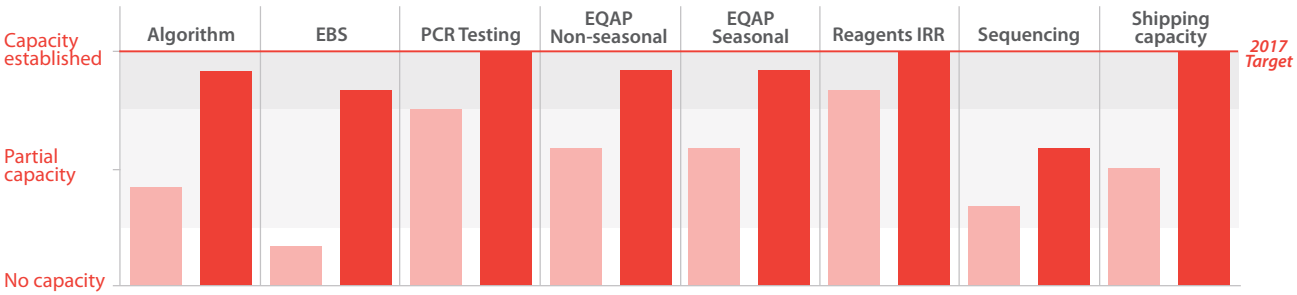


EURO

Detection capacity



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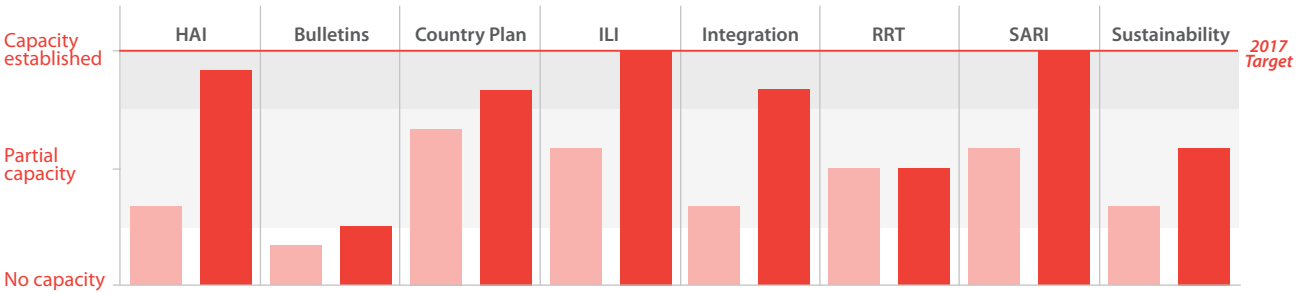
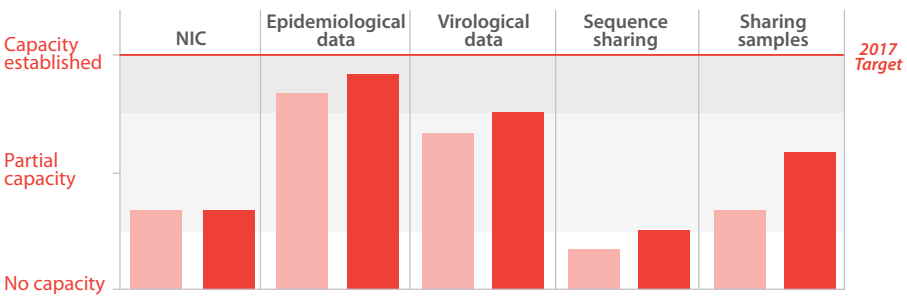
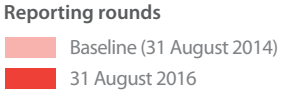


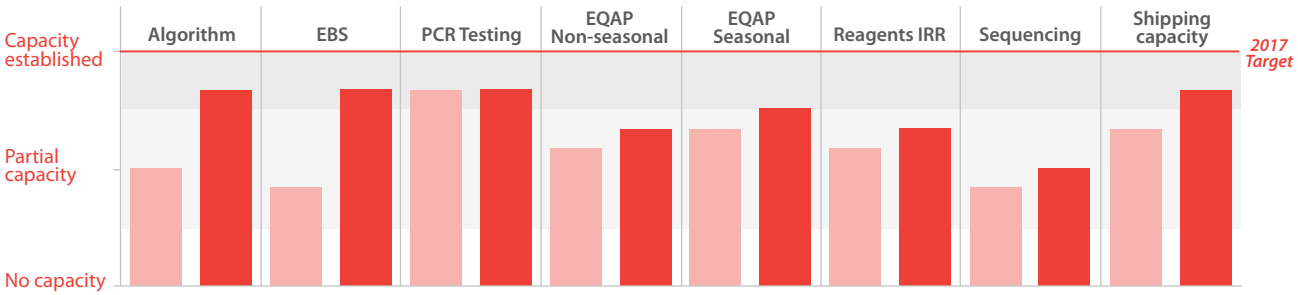
Sharing capacity (Strengthening networks)



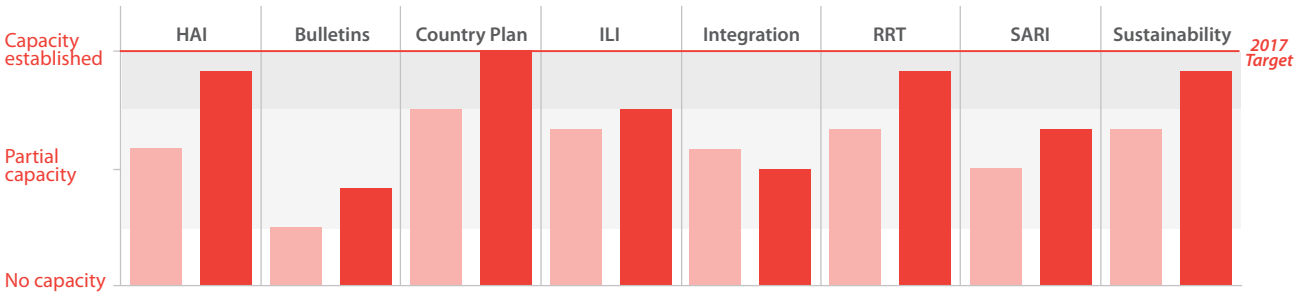


SEARO

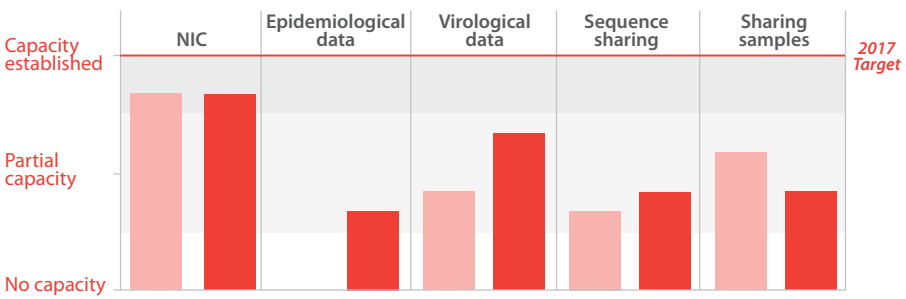
Detection capacity

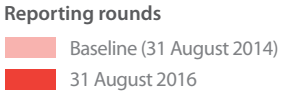


Monitoring capacity



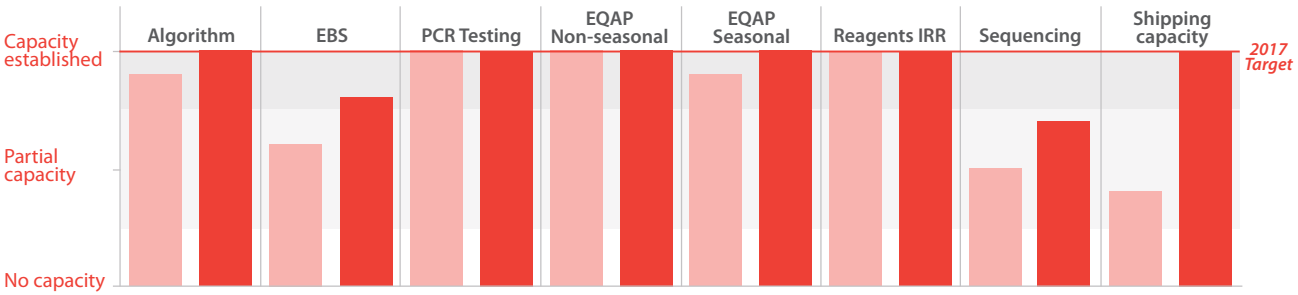
Sharing capacity (Strengthening networks)



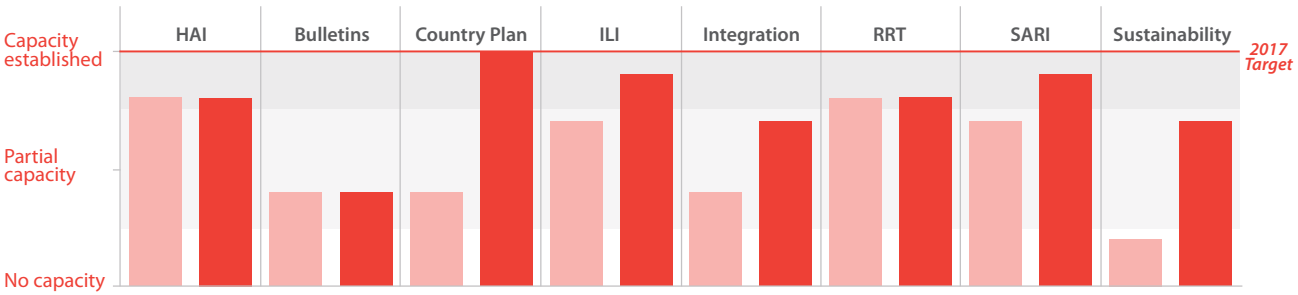


WPRO

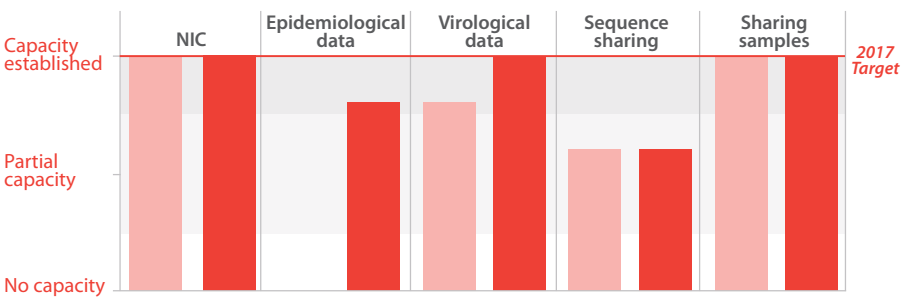
Detection capacity



Monitoring capacity



Sharing capacity (Strengthening networks)



Reporting rounds

- Baseline (31 August 2014)
- 31 August 2016

Annex 4
Laboratory & surveillance capacity indicator definitions

Table 9: Detection capacity indicators

INDICATOR	RATIONALE: This indicator measures…	NO CAPACITY	PARTIAL CAPACITY	CAPACITY ESTABLISHED
Algorithm for laboratory detection of unusual influenza viruses	laboratory preparedness to detect influenza viruses with pandemic potential	No laboratory algorithm established	Informal laboratory guidance or algorithm exists, but it isn't formally documented or strictly used	Algorithm established, formally documented and strictly put in use
National "early warning" systems or **Event Based Surveillance (EBS)**	the status of a national system to identify unusual or unexpected illness events. These systems are often called Event Based Surveillance (EBS) or "early warning" systems and use multiple sources of official and unofficial reports, including media reports	No national early warning system	Plans to establish a national early warning system in development	Functional national early warning system with definitions, protocols and procedures in place
PCR testing	a country's ability to do influenza PCR testing	No influenza PCR testing ability	Potential testing ability, e.g. having a PCR machine that is not in operation	Active PCR testing and evidence of reporting
PCR quality for non-seasonal influenza viruses	the quality of PCR testing to detect non-seasonal influenza viruses with pandemic potential based on performance in the last WHO Influenza PCR EQAP	No laboratory participated in the last EQAP	At least one national laboratory participated, but none achieved a 100% score	At least one national laboratory participated and achieved a score of 100%
PCR quality for seasonal influenza viruses	the quality of PCR testing to detect seasonal viruses based on performance in the last WHO Influenza PCR EQAP	No laboratory participated in the last EQAP	At least one national laboratory participated, but none achieved a 100% score	At least one national laboratory participated and achieved a score of 100%
Registration in IRR or receiving kits from WHOCCs	a country's access to reagents through: registration in the IRR, agreement with a WHOCC, or use of WHOCC SOPs	Not registered in IRR, no agreement with WHOCCs, and no other sources for reagents	Registered in IRR, or agreement with WHOCCs but no reagents received in the past 18 months	Registered in IRR or agreement with WHOCCs, with reagents received in the past 18 months
Sequencing	sequencing capabilities for influenza viruses	No equipment and no sequencing capacity	Equipment and potential capacity, but not functioning in the past year	Influenza virus genes sequenced in the past year
Shipping capacity	a country's ability to ship influenza clinical specimens/virus isolates with pandemic potential out of the country to a GISRS associated WHO CC, with appropriate training and export permits	No ISST in the past 2 years and no valid export permit	ISST received in the past 2 years or valid export permit (but not both)	ISST received in the past 2 years and valid export permit in place

Definitions: **WHOCC:** WHO Collaborating Centre; **EQAP:** External Quality Assessment Programme; **ISST:** Infectious Substance Shipping Training

Table 10: Monitoring capacity indicators

INDICATOR	RATIONALE: This indicator measures…	NO CAPACITY	PARTIAL CAPACITY	CAPACITY ESTABLISHED
Human Animal interface (HAI) coordination	the extent to which animal and human health authorities coordinate activities in response to influenza-related events of potential public health significance	No evidence of coordination.	Ad-hoc coordination i.e. joint meetings, sharing of information and joint investigation, but no documented functional coordination mechanism in place.	Documented functional coordination mechanism in place.
Bulletins - Regular Influenza surveillance reports	the extent to which data collected through surveillance is collated into routine bulletins and publicly shared	In the past 12 months no bulletin/report published in the public domain.	In the past 12 months bulletins/ reports published in the public domain during the influenza season but less than once a month.	In the past 12 months bulletins/reports published in the public domain at least monthly during the influenza season.
Country Implementation Plan	the degree to which a country is actively planning for the work to be done, ideally through a MOH Plan or a Country Office plan, agreed by the MOH	Discussion with MoH not yet started.	The plan being discussed between WHO CO/RO and MOH and is under review.	An implementation plan agreed between MoH and WHO CO/RO in place.
ILI national surveillance	the status of a national surveillance system where patients with non-severe respiratory diseases, such as ILI or similar, are medically attended in an outpatient or provider setting. During the flu season, samples should be routinely collected from a subset of patients and sent to a laboratory for diagnosis, as defined in the WHO surveillance standards+	No ILI surveillance (no active sites providing data or samples in the past year)	ILI surveillance exists but with gaps in routine data collection* and regular sample submission ** to a laboratory in the past year	ILI surveillance is done, with samples routinely collected* and regularly sent** to a laboratory in the past year
Integration of laboratory & epidemiologic data	whether laboratory and epidemiologic surveillance data are linked and integrated to produce surveillance updates	No linking of data	Data are shared informally but not integrated for reports	Published surveillance reports with integrated data
Rapid Response Team (RRT) training	whether Rapid Response Team (RRT) training has been delivered, with teams ready to respond to unusual events including human cases of infection with novel influenza viruses and outbreaks of severe respiratory diseases.	No RRT established	RRT established, but no training in the past year	RRT established and trained in the past year
SARI national surveillance	the status of a national surveillance system where hospitalized patients with severe respiratory disease, such as SARI, are medically attended; and samples are routinely collected (ideally from all or a subset of patients) and sent to a laboratory for diagnosis, as defined in the WHO surveillance standards+	No SARI surveillance (no active sites providing data or samples in the past year)	SARI surveillance exists but with gaps in routine data collection§ and regular sample submission** to a laboratory in the past year	SARI surveillance is done, with samples routinely collected§ and regularly sent** to a laboratory for diagnosis in the past year
Sustainability (evidence of)	this project's integration into an overall national plan (to increase the chances for long term sustainability)	No integration in national plan(s)	Agreed to be part of national plans with integration under development	Integrated into national plans

Definitions: **ILI:** Influenza-like Illnesses; **SARI:** Severe Acute Respiratory Infection
+ Global Epidemiological Surveillance Standards for Influenza
* 19 or more weeks during the Northern Hemisphere influenza season (week 40 – week 20) or 13 or more weeks during the Southern Hemisphere season (week 18 – week 40), or 32 weeks or more during the whole year for countries with year-round surveillance.
** ideally on a weekly basis, however no later than one month after collection of samples
§ 32 weeks or more in a year

Table 11: Sharing capacity indicators

INDICATOR	RATIONALE: This indicator measures…	NO CAPACITY	PARTIAL CAPACITY	CAPACITY ESTABLISHED
NIC status	progress towards a country-named and WHO-recognized National Influenza Centre (NIC)	No NIC designated by MOH	Country-designated NIC, pending WHO recognition	NIC recognized by WHO
Surveillance data reported to WHO **(Epidemiological data)**	how often epidemiologic data is reported to WHO through FluID or regional databases	No report in the past year	Reports submitted for < 20 weeks in the N. Hemisphere season*, or <13 weeks in the S. Hemisphere season**, or < 32 weeks all year for countries with year-round surveillance in the past year	Reports submitted for ≥ 20 weeks during the N. Hemisphere season*, or ≥13 weeks in the S. Hemisphere season**, or ≥32 weeks all year for countries with year-round surveillance in the past year
Laboratory data reported to WHO **(Virological data)**	how often virological data is reported to WHO through FluNet or regional databases	No report in the past year	Reports submitted for < 20 weeks in the N. Hemisphere season*, or <13 weeks in the S. Hemisphere season**, or < 32 weeks all year for countries with year-round surveillance in the past year	Reports submitted for ≥ 20 weeks during the N. Hemisphere season*, or ≥13 weeks in the S. Hemisphere season**, or ≥32 weeks all year for countries with year-round surveillance in the past year
Sharing/using **sequence data**	sharing of influenza virus genetic sequences	No sequences shared	WHOCC has uploaded country's sequences to a publicly accessible database in the past year	Country has uploaded sequences to a publicly accessible database in the past year
Sharing samples with WHOCCs	whether a country is sharing virus isolates and/or clinical specimens with WHOCCs	No shipment in the past year	One shipment in the past year	At least 2 shipments in the past year

* N. Hemisphere season: week 40 – week 20
** S. Hemisphere season: week 18 – week 40

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There is no telling where the next pandemic influenza virus will emerge.

That means all countries – rich and poor, large and small – must be ready to respond when it does. The Partnership Contribution (PC) to the WHO Pandemic Influenza Preparedness Framework works to support developing countries where preparedness systems are weak, and to strengthen their capacities in five key areas: laboratory and surveillance, burden of disease, regulatory capacity, planning for deployment and risk communications.

This report shows that by building capacity where it is needed most, the PC is helping to ensure the world is ready to respond when a crisis strikes. But the PC is also helping to secure the wider health security of the countries it supports, because the capacity it helps develop improves a nation's ability to prepare for other infectious health threats too.

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