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F. PLAN OF ACTION ON IMMUNIZATION: MIDTERM REVIEW

Introduction

1. During the 54th Directing Council of the Pan American Health Organization (PAHO) in September 2015, Member States approved a resolution to adopt the Plan of Action on Immunization (Document CD54/7, Rev. 2) as the guiding framework for immunization in the Americas (1). The Plan aims to continue progress, as well as identify and overcome immunization challenges currently faced by countries in the Americas, and is aligned with the WHO's Global Vaccine Action Plan (2). This report summarizes the Region's mid-term progress towards achievement of the objectives of the Plan in 2015 and 2016. It also highlights the challenges that will need to be overcome in the next two years in order to meet the goals set forth by the Plan. The sources consulted to compile this report include: *a*) reports by the countries' ministries of health; *b*) PAHO-WHO/UNICEF's Joint Reporting Form on immunization (JRF); and *c*) the compilation of research and other available resources. The report will be reviewed by the PAHO Technical Advisory Group on Vaccine-preventable Diseases (TAG) and shared with Member States for their knowledge and action.

Update on the Progress Achieved

2. The Plan established the road map to achieving equitable access to immunization for all populations in the Americas. Countries are working to leverage the commitment towards achieving universal health coverage in order to obtain better immunization coverage and strengthen health systems as a vehicle to increase immunization coverage.

3. The Plan established 13 objectives (7 general and 6 specific) and 29 indicators. At the time of the preparation of this mid-term review, as shown in the table below, the situation in the Region is as follows: 16 indicators are on track; 3 are in progress; and 10 of the indicators are off track and will require a concerted effort and urgent action to achieve the stated targets.

General (GO) and Strategic Objectives (SO)	Indicator	Status
GO 1.1 Maintain the Region's status as polio-free	GO 1.1.1 Number of countries and territories reporting cases of paralysis due to wild poliovirus or the circulation of vaccine-derived poliovirus (cVDPV) in the last year Baseline: 0 in 2013 Goal: 0 in 2020	As of 2016, 0/51 countries or territories in the Region reported cases of paralysis due to wild poliovirus or cVDPV.
GO 1.2 Maintain elimination of measles, rubella, and CRS	GO 1.2.1 Number of countries and territories in which endemic transmission of measles or rubella virus has been reestablished Baseline: 0 in 2013; 1 in 2015 Goal: 0 in 2020	As of 2016, 0/51 countries or territories in the Region reported endemic cases of the measles or rubella virus.
GO 1.3 Maintain achievements reached in vaccine-preventable disease control	GO 1.3.1 Number of countries and territories that meet the indicators for monitoring the quality of epidemiological surveillance of acute flaccid paralysis (AFP) cases Baseline: 2 in 2013 Goal: 13 in 2020	As of 2016, two countries in the Region have improved the epidemiological surveillance of polio. This indicator is off track. Countries should focus efforts on strengthening the capacity to detect suspected cases (i.e., suspected case rates).
	GO 1.3.2 Number of countries and territories that meet the indicators for monitoring the quality of epidemiological surveillance of suspect measles, rubella and congenital rubella syndrome cases Baseline: 9 in 2013 Goal: 18 in 2020	As of 2016, there are 17 countries that have met the epidemiological surveillance indicators.
	GO 1.3.3 Number of countries and territories that administer hepatitis B vaccine to newborns during the first 24 hours Baseline: 18 in 2013 Goal: 25 in 2020	As of 2016, 22 countries and territories have adopted the universal birth dose vaccination policy and 14 countries and territories only vaccinate newborns born to hepatitis B-positive mothers as part of their efforts to control hepatitis B virus perinatal transmission.

General (GO) and Strategic Objectives (SO)	Indicator	Status
<p>SO 1.1 All countries make a commitment to vaccination as a priority for health and development</p>	<p>SO 1.1.1 Number of countries and territories that have a legislative or regulatory basis for their immunization program</p> <p>Baseline: 28 in 2013, 26 approved legislation and 2 pending approval Goal: 32 in 2020</p>	<p>As of 2016, no additional countries have approved legislations for their immunization programs. This indicator is off track.</p>
	<p>SO 1.1.2 Number of countries and territories having an immunization technical advisory committee that meets WHO's criteria for good operation</p> <p>Baseline: 15 in 2013 Goal: 18 in 2020</p>	<p>As of 2016, there is no additional country in the Region that reports having the support of a well-functioning National Immunization Technical Advisory Group (NITAG). Of importance, Haiti was the most recent country to establish a NITAG in March 2017. This indicator is off track.</p>
	<p>SO 1.1.3 Number of countries and territories that have a current annual immunization plan of action that includes operational and financial plans</p> <p>Baseline: 25 in 2013 Goal: 35 in 2020</p>	<p>As of 2016, 41 countries have an up-to-date annual immunization plan.</p>
<p>SO 1.2 Individuals and communities understand the value of the vaccines</p>	<p>SO 1.2.1 Number of countries and territories that report having monitored public satisfaction with vaccination during Vaccination Week in the Americas or other activities</p> <p>Baseline: 0 in 2013 Goal: 15 in 2020</p>	<p>As of 2016, six countries and territories have reported using Vaccination Week as a platform to monitor public awareness, acceptance, and satisfaction with vaccination during Vaccination Week in the Americas in 2016.</p>

General (GO) and Strategic Objectives (SO)	Indicator	Status
GO 2.1 Eliminate neonatal tetanus as a public health problem in all countries	GO 2.1.1 Number of countries and territories with municipalities reporting rates of neonatal tetanus (NTT) above 1/1,000 live births Baseline: 1 in 2013 Goal: 0 in 2020	In 2017, Haiti will evaluate the plan of action implemented in 2015 for NTT elimination.
GO 2.2 Meet DPT vaccination coverage targets at all levels	GO 2.2.1 Number of countries and territories reporting national average coverage of at least 95% with three doses of DPT vaccine in children under 1 year Baseline: 19 in 2013 Goal: 35 in 2020	As of 2015, 20 countries have reached 95% coverage with DPT3. This indicator is off track in the Region.
	GO 2.2.2 Number of countries and territories reporting coverage of at least 80% in each district or equivalent with three doses of DPT vaccine in children under 1 year Baseline: 12 in 2013 Goal: 35 in 2020	As of 2015, 13 countries report DPT3 coverage of at least 80% in each district. This indicator is off track. Countries and the Pan American Sanitary Bureau have been working on focusing efforts in those geographic areas with low immunization rates.
SO 2.1 Immunization benefits extend equitably to all people and social groups	SO 2.1.1 Number of countries and territories reporting coverage by income quintile or other subgroups that make it possible to monitor vaccination equity Baseline: 0 in 2013 Goal: 15 in 2020	As of 2016, there is no country in the Region reporting coverage by income. Although this indicator is off track, there have been two workshops to train 21 countries in the methodology to measure inequities.

General (GO) and Strategic Objectives (SO)	Indicator	Status
GO 3.1 Introduce vaccines in accordance with technical and programmatic criteria	GO 3.1.1 Number of countries and territories that have introduced one or more new vaccines into their national vaccination schedules Baseline: 32 in 2013 Goal: 40 in 2020	As of 2016, 33 countries and territories have introduced new vaccines in their national schedules.
SO 3.1 Decision-making is evidence-based and impact assessments ensure that policies are adopted to maximize the benefits of vaccination	SO 3.1.1 Number of countries and territories that have conducted studies prior to the introduction of a vaccine (e.g., cost-effectiveness analysis) Baseline: 14 in 2013 Goal: 20 in 2020	As of 2016, 16 countries have conducted studies prior to the introduction of new vaccines.
	SO 3.1.2 Number of countries and territories that have conducted studies after the introduction of a vaccine (e.g., impact assessments, operational review, etc.) Baseline: 9 in 2013 Goal: 15 in 2020	As of 2016, 12 countries have conducted studies after the introduction of new vaccines.

General (GO) and Strategic Objectives (SO)	Indicator	Status
GO 4.1 Achieve the expected results proposed by the Post-2015 Development Agenda for reductions in infant mortality and maternal mortality	GO 4.1.1 Number of countries and territories whose immunization schedules include vaccination of pregnant women against influenza and/or with tetanus-diphtheria vaccine, as tracers of maternal vaccination Baseline: 27 in 2013 Goal: 35 in 2020	As of 2016, influenza vaccination is indicated for pregnant women in 31 countries in Latin America and the Caribbean (LAC). The pertussis-containing vaccine is indicated for pregnant women in 18 countries (all of them included in the 31 countries that have influenza vaccination).

General (GO) and Strategic Objectives (SO)	Indicator	Status
	<p>GO 4.1.2 Number of countries and territories that offer other preventive interventions integrated with vaccination</p> <p>Baseline: 4 in 2013 Goal: 20 in 2020</p>	<p>As of 2016, six countries offer preventive interventions integrated with vaccination (i.e., deworming).</p>
<p>SO 4.1 Supplies are available for the immunization program on a sustainable basis with national resources</p>	<p>SO 4.1.1 Number of countries and territories that finance more than 90% of their immunization programs with national resources</p> <p>Baseline: 27 in 2013 Goal: 35 in 2020</p>	<p>As of 2015, 34 countries in the Americas are able to fund their own programs with domestic resources.</p>
	<p>SO 4.1.2 Percentage of birth cohort in Latin America and the Caribbean that has access to an adequate vaccine supply of quality vaccines</p> <p>Baseline: 100 in 2013 Goal: 100 in 2020</p>	<p>As of 2016, 100% of the cohort has access to an adequate vaccine supply of quality vaccines.</p>
	<p>SO 4.1.3 Number of countries and territories that procure vaccines through the Revolving Fund that meet the criteria for accuracy of demand for vaccines and supply</p> <p>Baseline: 10 in 2013 Goal: 30 in 2020</p>	<p>As of 2016, only four countries and territories procured vaccines through the RF and met the criteria for accuracy of demand for vaccines and supply. This indicator is off track. Increased national financial burden, the introduction of IPV and switch of polio trivalent to bivalent are some of the reasons why countries had to update planned quantities. PAHO's technical assistance included updating authorities on vaccine markets, resolving supply issues and facilitating actions to improve demand planning and financial performance.</p>

General (GO) and Strategic Objectives (SO)	Indicator	Status
<p>SO 4.2 Strengthened immunization services are part of comprehensive, well-run health services</p>	<p>SO 4.2.1 Number of countries and territories that have dropout rates below 5% between the first and the third dose of DPT vaccine</p> <p>Baseline: 11 in 2013 Goal: 35 in 2020</p>	<p>As of 2015, 26 countries have the DPT1-3 dropout rate under 5%. The performance of this indicator shows that countries should work harder to improve the quality of immunization services being provided and can spark measures to correct the problems and improve DPT3 coverage within the current infrastructure.</p>
	<p>SO 4.2.2 Number of countries and territories with coverage above 95% for third dose of DPT vaccine sustained for three or more consecutive years</p> <p>Baseline: 13 in 2013 Goal: 35 in 2020</p>	<p>As of 2015, ten countries and territories have maintained DPT3 coverage above 95% for three or more consecutive years. This indicator is off track. There is a need to continue strengthening national health systems as countries add vaccines to their national programs, so that coverage with all vaccines reaches and is sustained at the target of 95% or more.</p>
	<p>SO 4.2.3 Number of countries and territories that have conducted exercises to identify and correct barriers to reaching the unvaccinated or under-vaccinated populations</p> <p>Baseline: 22 in 2013 Goal: 35 in 2020</p>	<p>As of 2016, 23 countries and territories have implemented vaccination activities targeting distant populations in an effort to reduce the number of susceptibles. This indicator is off track. The Region continues to prioritize the implementation of strategies to reach under/unvaccinated populations, including close collaboration with countries to define needs and follow-up actions.</p>
	<p>SO 4.2.4 Number of countries and territories that have held activities to improve the quality of their coverage data and that include these activities in their annual action plans</p> <p>Baseline: 12 in 2013 Goal: 25 in 2020</p>	<p>As of 2016, 14 countries and territories have held activities to improve the quality of their immunization data.</p>

General (GO) and Strategic Objectives (SO)	Indicator	Status
	<p>SO 4.2.5 Number of countries and territories that have a national system for computerized nominal immunization registry</p> <p>Baseline: 3 in 2013 Goal: 10 in 2020</p>	<p>As of 2016, five countries currently use EIR systems at the national level</p>
	<p>SO 4.2.6 Number of countries and territories that report having had a stock-out of a vaccine or related supplies for one full month or more at any level (local, subnational, or national)</p> <p>Baseline: 11 in 2013 Goal: 0 in 2020</p>	<p>As of 2015, 21 countries have reported stock-out, mainly for shortage of vaccine at global level. This indicator is off track. Countries should review the vaccine supply chain system to optimize the steps in the process and accommodate the strategies to maximize effectiveness and efficiency.</p>
	<p>SO 4.2.7 Number of countries and territories that have strengthened post-marketing surveillance of vaccines in the Expanded Program on Immunization (EPI)</p> <p>Baseline: 4 in 2013 Goal: 10 in 2020</p>	<p>As of 2016, 28 countries and territories have strengthened post-marketing surveillance of vaccines in the Expanded Program on Immunization.</p>
	<p>SO 4.2.8 Number of countries and territories that hold vaccination activities geared to health workers</p> <p>Baseline: 19 in 2013 Goal: 25 in 2020</p>	<p>As of 2016, 25 countries in the Region have been working to improve the knowledge and skill of their health workers.</p>

Challenges and actions needed to improve immunization in the Region

4. Immunization is among the most cost-effective health interventions implemented historically. In order to reach its full potential, as well as make greater progress with the objectives of the Plan, countries should reinforce the following areas of work taking their own reality into consideration:

- a) *Enhance legal frameworks.* Countries should establish or reinforce vaccine legislation in order to protect the financial sustainability of the program
- b) *Ensure that the benefits of immunization are equally shared by all.* With the objective of increased coverage at all levels, immunization programs should work with health systems in order to extend the services to people currently not covered and take advantage of the integrated approaches with other interventions at the primary care level.
- c) *Maintain and strengthen national commitment to immunization programs.* Although countries have invested in purchasing new and more expensive vaccines, financial resources are needed to support and improve programmatic activities such as supervision, training, and technical assistance. One challenge is the economic situation faced by many middle income countries in the Region with competing health priorities. The investment should be linked to a measurable evaluation framework.
- d) *Increase disease surveillance.* Suspected case-based surveillance of polio, measles and rubella is the most powerful tool to maintain gains and avoid re-establishment of the circulation of these viruses in the Region. Countries should enhance the performance of integrated epidemiological and laboratory surveillance of vaccine-preventable diseases (VPDs), take advantage of this network, and include other VPDs, as well as boost sentinel surveillance.
- e) *Invigorate information system.* Countries should work to ensure high quality collection, management, analysis and use of data at all levels to make the most informed decisions. These activities should focus on training, assessing the data quality of their systems, and exploring the use of new technologies, among others.
- f) *Enhance communication and social mobilization.* Efforts to increase confidence in and uptake of vaccines based on evidence should be made by countries through engaging communities and utilizing new mobile and internet-based technologies.

Action by the Executive Committee

5. The Executive Committee is invited to take note of this report and formulate the recommendations it deems pertinent.

References

1. Pan American Health Organization. Strengthening immunization programs [Internet]. 50th Directing Council of PAHO, 62nd session of the WHO Regional Committee for the Americas; 2010 Sep 27-Oct 1; Washington, DC. Washington, DC: PAHO; 2010 (Resolution CD50.R5) [cited 2015 Jan 23]. Available from: <http://new.paho.org/hq/dmdocuments/2010/CD50.R5-e.pdf>

2. Pan American Health Organization. Health in the Americas; 2012 edition. Regional Outlook and Country Profiles [Internet]. Washington (DC): PAHO; 2012 [cited 2015 Jan 23]. Available from:
http://www.paho.org/salud-en-las-americanas-2012/index.php?option=com_content&view=article&id=9&Itemid=124&lang=en
3. Pan American Health Organization. Immunization in the Americas, 2014 summary [Internet]. Washington (DC): PAHO; 2014 [cited 2015 Jan 23]. Available from:
http://www2.paho.org/hq/index.php?option=com_docman&task=doc_view&Itemid=270&gid=27446&lang=en
4. World Health Organization. Draft global vaccine action plan [Internet]. 65th World Health Assembly; 2012 May 21-26; Geneva, Switzerland. Geneva, Switzerland. Geneva: WHO; 2012 (document A65/22) [cited 2015 Jan 23]. Available from:
http://apps.who.int/gb/ebwha/pdf_files/WHA65/A65_22-en.pdf
5. Pan American Health Organization. Plan of action for maintaining measles, rubella, and congenital rubella syndrome elimination in the Region of the Americas [Internet]. 28th Pan American Sanitary Conference, 64th session of the WHO Regional Committee for the Americas; 2012 Sep 17-21; Washington, DC. Washington, DC: PAHO; 2012 (Resolution CSP28.R14) [cited 2015 Jan 23]. Available from:
http://www.paho.org/hq/index.php?option=com_content&view=article&id=7022&Itemid=39541&lang=en
6. Pan American Health Organization. Principles of the Pan American health organization revolving fund for vaccine procurement [Internet]. 52nd Directing Council of PAHO, 65th session of the WHO Regional Committee for the Americas; 2013 Sep 30-Oct 4; Washington, DC. Washington, DC: PAHO; 2013 (Document CD52/17) [cited 2015 Jan 23]. Available from:
http://www2.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=23146&Itemid=270&lang=en
7. Pan American Health Organization. Evidence-based policy-making for national immunization programs [Internet]. 52nd Directing Council of PAHO, 65th session of the WHO Regional Committee for the Americas; 2013 Sep 30-Oct 4; Washington, DC. Washington, DC: PAHO; 2013 (Resolution CD52.R14) [cited 2015 Jan 23]. Available from:
http://www2.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=23353&Itemid=270&lang=en

8. World Health Organization. Poliomyelitis: intensification of the global eradication initiative [Internet]. 65th World Health Assembly; 2012 May 21-26; Geneva, Switzerland. Geneva: WHO; 2012 (Document A65/20 [cited 2015 Jan 23]. Available from: http://apps.who.int/gb/ebwha/pdf_files/WHA65/A65_20-en.pdf
9. World Health Organization. Polio eradication & endgame strategic plan 2013-2018 [Internet]. Geneva: WHO; 2013 [cited 2015 Jan 23]. Available from: <http://polioeradication.org/who-we-are/strategy/>
10. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Update on implementation of tag recommendations on the polio eradication and endgame strategic plan 2013-2018. In: Vaccination, Your best shot! Final Report [Internet]. XXII Meeting of the TAG on Vaccine-preventable Diseases; 2014 Jul 1-2; Washington, DC. Washington, DC: PAHO; 2014 [cited 2015 Jan 23]. Available from: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26Itemid%3D%26gid%3D26691%26lang%3Den&ei=NTpEVfzGE4HZtQW96IDgDQ&usg=AFQjCNGRXIHbJG1jP5TVgAW0tmSZYoMuRw&bvm=bv.92291466,d.b2w
11. Pan American Health Organization. Plan of action for maintaining measles, rubella, and congenital rubella syndrome elimination in the Region of the Americas [Internet]. 28th Pan American Sanitary Conference of PAHO, 64th session of the WHO Regional Committee for the Americas; 2012 Sep 17-21; Washington, DC. Washington, DC: PAHO; 2012 (Resolution CSP28.R14) [cited 2015 Jan 23]. Available from: http://www2.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=18952&Itemid=270&lang=en
12. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Status of the documentation and verification process of the elimination of measles, rubella, and congenital rubella syndrome. In: Vaccination, Your best shot! Final Report [Internet]. XXII Meeting of the TAG on Vaccine-preventable Diseases; 2014 Jul 1-2; Washington, DC. Washington, DC: PAHO; 2014 [cited 2015 Jan 23]. Available from: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26Itemid%3D%26gid%3D26691%26lang%3Den&ei=NTpEVfzGE4HZtQW96IDgDQ&usg=AFQjCNGRXIHbJG1jP5TVgAW0tmSZYoMuRw&bvm=bv.92291466,d.b2w

13. U.S. Centers for Disease Control and Prevention. U.S. Multi-state measles outbreak [Internet]. Atlanta (GA): CDC; 2014 Dec 28-2015 Apr 17 [updated 2015 April 27; cited 2015 Jan 23]. Available from:
<http://www.cdc.gov/measles/multi-state-outbreak.html>
14. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Vaccination against hepatitis. In: Vaccinate your family, protect your community. Final Report [Internet]. XIX Meeting of the TAG; 2011 Jul 6-8; Buenos Aires, Argentina. Buenos Aires: PAHO; 2011 [cited 2015 Jan 23]. Available from:
<http://www.paho.org/immunization/toolkit/resources/tech-recommendations/TAG-2011.pdf>
15. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Pertussis (Whooping cough). In: Vaccination: a shared responsibility. final report [Internet]. XXI Meeting of the TAG; 2013 Jul 3-5; Quito, Ecuador. Quito: PAHO; 2013 [cited 2015 Jan 23]. Available from:
http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26gid%3D22423%26Itemid%3D270&ei=VEJEVcbiL4rvsAXasoDoBw&usq=AFQjCNG1m0cHyx0kduu9wSq8VqMehPsjMg&bvm=bv.92291466,d.b2w
16. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Status of influenza vaccination in the Americas and formation of the network for evaluation of influenza vaccine effectiveness—REVELAC-I. In: Vaccination, Your Best Shot! Final Report [Internet]. XXII Meeting of the TAG on Vaccine-preventable Diseases; 2014 Jul 1-2; Washington, DC. Washington, DC: PAHO; 2014 [cited 2015 Jan 23]. Available from:
http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26Itemid%3D%26gid%3D26691%26lang%3Den&ei=NTpEVfzGE4HZtQW96IDgDQ&usq=AFQjCNGRXIHbJG1jP5TVgAW0tmSZYoMuRw&bvm=bv.92291466,d.b2w
17. Pan American Health Organization. Strategy for universal access to health and universal health coverage [Internet]. 53rd Directing Council of PAHO, 66th session of the WHO Regional Committee for the Americas; 2014 Sep 29-Oct 3; Washington, DC. Washington, DC: PAHO; 2014 (Document CD53/5, Rev. 2) [cited 2015 Feb 23]. Available from:
http://www2.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=27312&Itemid=270&lang=en

18. Pan American Health Organization. Sustaining immunization programs—elimination of rubella and congenital rubella syndrome (CRS) [Internet]. 44th Directing Council of PAHO, 55th session of the WHO Regional Committee for the Americas; 2003 Sep 22-26; Washington, DC. Washington, DC: PAHO; 2003 (Document CD44/11) [cited 2015 Jan 23]. Available from: http://www.paho.org/immunization/toolkit/resources/political-documents/2003-Working-Document-CD44_11-Sustaining-Immunization-Programs-Elimination-of-Rubella-and-Congenital%20Rubella-Syndrome-CRS.pdf
19. World Health Organization. World immunization week [Internet]. 65th World Health Assembly; 2012 May 21-26; Geneva, Switzerland. Geneva: WHO; 2012 (Resolution WHA65.18) [cited 2015 Jan 23]. Available from: http://apps.who.int/gb/ebwha/pdf_files/WHA65/A65_R18-en.pdf
20. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Progress of Haiti's immunization program [Internet]. In: Vaccination a shared responsibility. Final Report [Internet]. XXI Meeting of the TAG; 2013 Jul 3-5; Quito, Ecuador. Quito: PAHO; 2013 [cited 2015 Jan 23]. Available from: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26gid%3D22423%26Itemid%3D270&ei=VEJEVcbiL4rvsAXasoDoBw&usg=AFQjCNG1m0cHyx0kduu9wSq8VqMehPsjMg&bvm=bv.92291466,d.b2w
21. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Status of human papilloma virus vaccination. Final Report. In: Vaccination, Your best shot! Final Report [Internet]. XXII Meeting of the TAG on Vaccine-preventable Diseases; 2014 Jul 1-2; Washington, DC. Washington, DC: PAHO; 2014 [cited 2015 Jan 23]. Available from: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26Itemid%3D%26gid%3D26691%26lang%3Den&ei=NTpEVfzGE4HZtQW96IDgDQ&usg=AFQjCNGRXIHbJG1jP5TVgAW0tmSZYoMuRw&bvm=bv.92291466,d.b2w
22. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Update on immunization data quality and electronic immunization registries. In: Vaccination, Your best shot! Final Report [Internet]. XXII Meeting of the TAG on Vaccine-preventable Diseases; 2014 Jul 1-2; Washington, DC. Washington, DC: PAHO; 2014 [cited 2015 Jan 23]. Available from: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26Itemid%3D%26gid%3D26691

http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26Itemid%3D%26gid%3D26691%26lang%3Den&ei=NTpEVfzGE4HZtQW96IDgDQ&usg=AFQjCNGRXIHbJG1jP5TVgAW0tmSZYoMuRw&bvm=bv.92291466,d.b2w

23. Pan American Health Organization [Technical Advisory Group (TAG) on Vaccine-preventable Diseases]. Update on the PAHO revolving fund. final report [Internet]. In: Vaccination, Your best shot! Final Report [Internet]. XXII Meeting of the TAG on Vaccine-preventable Diseases; 2014 Jul 1-2; Washington, DC. Washington: PAHO; 2014 [cited 2015 Jan 23]. Available from:
http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26Itemid%3D%26gid%3D26691%26lang%3Den&ei=NTpEVfzGE4HZtQW96IDgDQ&usg=AFQjCNGRXIHbJG1jP5TVgAW0tmSZYoMuRw&bvm=bv.92291466,d.b2w

24. Pan American Health Organization. Strategy and plan of action on eHealth [Internet]. 52nd Directing Council of PAHO, 63rd session of the WHO Regional Committee for the Americas; 2011 Sep 26-30; Washington, DC. Washington, DC: PAHO; 2011 (Document CD51/13) [cited 2015 Jan 23]. Available from:
http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCgQFjAB&url=http%3A%2F%2Fwww.paho.org%2Fhq%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26gid%3D14572&ei=8UxEVYCYCoHxggSJh4HgDA&usg=AFQjCNHiJ292qad75pMYmZQxzVvTS2gx6A&bvm=bv.92291466,d.eXY
