Transitioning from Gavi Support in Lower-Middle-Income Countries

Options for U.S. Engagement in Central America

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A Report of the CSIS Task Force on Women’s and Family Health
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Executive Summary

Since 2000, the U.S. government has been a strong supporter of Gavi, the Vaccine Alliance, contributing more than US$730 million through the end of December 2015 to advance the public-private partnership’s effort to introduce new and underutilized vaccines in the world’s poorest countries. Beyond contributing funds to support Gavi’s programs and serving on the Gavi Board, the United States complements its global-level support for Gavi through bilateral programs to strengthen national immunization programs.

Lower-income countries receiving Gavi assistance have long been required to cofinance a portion of each vaccine dose procured with Alliance funds, with the expectation that as the countries grow economically and reach lower-middle-income country status (LMIC), they will eventually transition away from Gavi support. To date, more than 20 of the original 73 Gavi-eligible countries have started to transition, with 5 having completed the process and an additional 16 expected to have fully transitioned to using domestic resources to fully finance vaccines offered through public programs by 2018. Many are countries where the United States is, or has been, a key bilateral partner on immunization program strengthening over several decades.

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1 Katherine E. Bliss is senior associate with the CSIS Global Health Policy Center, and Katey Peck is research associate and program manager with the CSIS Global Health Policy Center. The authors wish to thank the staff at Fabretto Children’s Foundation, Gavi, PAHO, and UNICEF, as well as the USAID missions in Honduras and Nicaragua, who helped us identify contacts and set up meetings in Tegucigalpa and Nicaragua. We are also grateful to the many public officials, as well as staff at academic institutions, nongovernmental organizations, and private clinics in Honduras and Nicaragua who took the time to share their perspectives on child health challenges and their countries’ experiences with the Gavi transition.

2 Gavi, the Vaccine Alliance, “Transition Process,” http://www.gavi.org/support/apply/graduating-countries/. Under Gavi cofinancing and transition policies, countries classified by the World Bank as lower-income countries pay 20 cents per dose of Gavi-procured vaccine; once a country reaches an annual GNI per capita of US$1,045 it is considered to have entered “Phase 1,” during which it pays 15 percent more per dose per year, until it reaches an annual GNI per capita of US$1,580 (three-year average). At that point, the now lower-middle-income country is considered to have entered “phase 2,” and begins a transition phase during which financing requirements increase incrementally such that by the end of five years, it will be using only domestic resources to pay for the vaccines originally procured with assistance from Gavi. See Gavi, the Vaccine Alliance, “Co-financing Policy,” http://www.gavi.org/about/governance/programme-policies/co-financing/.
The long history of U.S. support for global maternal and child health programs, its emphasis on assisting countries in strengthening their immunization programs, and considerable U.S. investments in Gavi, the Vaccine Alliance, over the past 15 years all underscore why the United States has an interest in ensuring that LMIC transitions from Gavi support proceed smoothly and sustainably. Yet in many LMICs, the United States is scaling back its bilateral engagement on health. In Latin America and the Caribbean, where the United States has supported maternal and child health programs since the 1960s, the recent drawdown of resources for health has been notable, with bilateral support for health programs now in only a handful of countries and focused primarily on HIV/AIDS.

Examining the factors shaping the way countries in Latin America and the Caribbean are experiencing the Gavi transition process provides a helpful lens through which to examine options for U.S. government engagement to support the sustainability of immunization programs in LMICs, especially where U.S. engagement on health is limited. Thanks to technical assistance provided since the 1970s by the Pan American Health Organization (PAHO) to help member states strengthen national immunization programs and to the PAHO Revolving Fund for Vaccine Procurement, which consolidates member states’ vaccine needs to purchase vaccines, syringes, and some other immunization program supplies at very low cost, countries in the region have dramatically improved immunization coverage rates over the last four decades.3 Because the World Bank classifies most countries in Latin America and the Caribbean as LMIC, middle income, or high income, only six countries—Bolivia, Cuba, Guyana, Haiti, Honduras, and Nicaragua—have ever been eligible for Gavi support. As of 2016, Honduras has “graduated” from Gavi assistance, while Bolivia, Cuba, Guyana, and Nicaragua are in the process of transition. In the Americas, only Haiti remains eligible for the full package of Gavi support.

A small group from the CSIS Global Health Policy Center traveled to the Republic of Honduras and the Republic of Nicaragua in January 2016 to examine the regional experience with the Gavi transition and to assess prospects for future U.S. engagement in strengthening immunization in LMICs at the country level. The trip was conducted on behalf of the CSIS Task Force on Women’s and Family Health, which was launched in the fall of 2015 to “chart a concrete road map for the next administration and Congress to guide U.S. global policy on women’s and family health.”4 Important questions for trip participants included the following:

- What roles have the United States and other partners played in strengthening immunization programs in the Central American region?
- What has been the impact of Gavi support in Honduras and Nicaragua?

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What have been the countries’ experiences in preparing for, or moving through, the Gavi transition?

What role can the United States play in promoting a sustainable transition from Gavi support, especially where it no longer supports bilateral engagement on maternal, newborn, and child health (MNCH) issues?

Recommendations/Policy Options

In both Honduras and Nicaragua, national immunization programs have served as models for a region that already has high standards when it comes to immunization program performance. Immunization programs enjoy a high political profile in both countries, and citizens in Honduras and Nicaragua generally express confidence in government-provided vaccines. Thanks to support from Gavi, the PAHO Revolving Fund, bilateral development partners, and other donors, both Honduras and Nicaragua have successfully introduced a number of the newer and underutilized vaccines, such as the rotavirus vaccine and pneumococcal vaccine, and have maintained generally high immunization coverage rates, even as health indicators in other areas of maternal, newborn, and child health lag behind.

Yet both countries face significant political, technical, and social challenges to the sustainability of immunization programs, challenges that may affect the long-term success of each country’s transition from Gavi support. Political challenges include the impacts of health sector reforms, including decentralization and the dismantling of vertical health programs. On the technical side, maintaining cold chain equipment; training and retaining health workers who are qualified to properly deliver the new vaccines; and collecting, managing, and evaluating information about immunization coverage and program impact are common concerns.

Migration and threats to citizen security pose important social challenges for the sustainability of immunization programs in both countries. The migration of undocumented children from Honduras to the United leads to gaps in information about immunization coverage, while the migration of health workers from both countries drains the health system of personnel trained to administer vaccines. Similarly, the violence associated with the overland flow of illegal drugs from South America to the United States through the Mesoamerican corridor limits health workers’ ability to deliver vaccines in some of the most underserved areas.

Over a week of interviews with health officials, academic researchers, and representatives of civil society organizations in Honduras and Nicaragua, as well as site visits to two urban public health clinics in Tegucigalpa, we identified three areas where the United States has an opportunity to contribute to the sustainability of immunization programs within the context of their transition from Gavi support:

1. **At the global level**, the United States should use its position on the Gavi Board to advocate for continued refinements to transition policies, which could give countries extended access to low Gavi prices, or longer than five years to move
toward full financing. During the transition process, Gavi teams work closely with country health officials to identify potential roadblocks to success, and the United States should support Gavi in continuing to identify how best to meet countries' needs to ensure program sustainability. The United States can also advocate that other governments that support Gavi increase their yearly contributions to the Alliance, as the United States has done in recent years.

2. **At the regional level**, the United States should continue to support regional mechanisms that facilitate countries’ pooled procurement of vaccines at low cost and respond to countries’ requests for technical assistance with immunization program design and disease detection.

3. **At the national level**, the sustainability of high-performing immunization programs in Honduras and Nicaragua is at risk because of financial and technical challenges. The United States could revisit its decision to draw down bilateral health assistance in the two countries, or it could devote resources within other well-funded programs, such as those related to food security or democracy and governance, to strengthen program integration and citizen engagement, recognizing that poor health is both a driver of and a consequence of inequality and insecurity.

Honduras: A Long History of Immunization “Firsts”

Honduras is a small country in Central America with a population of roughly 8.5 million people. It shares borders with Nicaragua, El Salvador, and Guatemala, and is primarily a producer of agricultural goods, with coffee exports an important component of economic growth. Yet more than two-thirds of households live in poverty, and nearly 50 percent live in extreme poverty. An estimated 200,000 children are born each year, but population growth is offset by considerable migration to other countries in the region and to the United States. Internal conflicts in 2009 around political succession, as well as the use of Honduras as a conduit for the movement of illegal drugs from South America to markets in the United States through the “Northern Triangle,” which also includes Guatemala and El Salvador, have contributed to security tensions in the country.

Despite these social and political challenges, Honduras is considered to have a model immunization program. According to the Encuesta Nacional de Demografía y Salud (ENDESA), from 2011 to 2012, 85 percent of children between one and two years old had been fully vaccinated, up from 75 percent in 2005–

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2006. Interestingly, the numbers are higher in rural areas, where 87 percent of children in 2011–2012 were fully vaccinated, compared to 82 percent in urban zones. The World Health Organization (WHO)/UNICEF numbers show that the country’s diphtheria-tetanus-pertussis (DTP3) coverage, an important indicator of immunization program performance, has remained at about 90 percent since 1999, with some declines in recent years, which many officials attribute to problems with the estimated number of vaccine-eligible children in the 2013 census. As of late 2015, Honduras was on track to meet Millennium Development Goal 4 (MDG4) to reduce child mortality by two-thirds, but not on track to meet the MDG5 target of reducing maternal mortality by three-quarters between 1990 and 2015.

Honduras’s successes in increasing and sustaining high immunization rates can be attributed to several factors. There is a long history of immunization “firsts” in Honduras, with the country being among the first in the Americas to introduce the Bacillus Calmette–Guérin (BCG) vaccine to prevent tuberculosis in the 1950s and oral polio vaccine (OPV) in the 1960s. The PAI, the Spanish-language acronym for the Expanded Program on Immunization, has enjoyed high-level political visibility and support. Honduras established the PAI within the Secretaría de Salud (SESAL) in 1979, and since then it has benefited from a consistent cadre of technical experts, with only two directors over more than three decades. Advised by a National Coordinating Council on Immunizations (CCNI) since the late 1980s, the PAI has so far also been protected from the restructuring reforms that have dismantled other departments within the Secretariat of Health in favor of “horizontal” approaches.

In Honduras, funds to purchase vaccines for public programs are protected by national legislation, including the Vaccine Law, passed by the National Assembly in 1998, and a newer Vaccine Act of the Republic of Honduras in 2014, which has yet to be fully implemented. Most vaccines are procured through the PAHO Revolving Fund. But if national law guarantees annual funds for vaccine procurement, it does not guarantee other costs associated with immunization program delivery, including salaries for personnel, fuel, and other supplies. According to data from 2011, the total cost of the immunization program in Honduras was US$32.5 million. Vaccines accounted for just 25 percent of this total, but labor costs were about half, with program management, planning, and evaluation major activities constituting another important component.
Since 2004, Honduras has received more than US$30 million from Gavi, with the bulk of funds going toward the introduction of the newer and expensive rotavirus vaccine, introduced in 2009, and the pneumococcal vaccine, introduced in 2011. Honduras has also received Gavi funds to support health-system strengthening, with a focus on such areas as the Islas de la Bahía, which report low immunization coverage due to geographical inaccessibility and a shortage of trained health personnel.

<table>
<thead>
<tr>
<th>National Vaccination Schedule in Honduras</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG (Bacillus Calmette-Guérin vaccine)</td>
</tr>
<tr>
<td>Hepatitis B vaccine</td>
</tr>
<tr>
<td>OPV (oral polio vaccine)</td>
</tr>
<tr>
<td>Rotavirus vaccine*</td>
</tr>
<tr>
<td>Pentavalent vaccine (DPT/HepB/Hib)*</td>
</tr>
<tr>
<td>DPT (diphtheria, pertussis, tetanus vaccine)</td>
</tr>
<tr>
<td>MMR (measles, mumps, and rubella vaccine)</td>
</tr>
<tr>
<td>TT (tetanus toxoid vaccine)</td>
</tr>
<tr>
<td>Yellow Fever vaccine*</td>
</tr>
<tr>
<td>Influenza vaccine</td>
</tr>
<tr>
<td>Td (tetanus and diphtheria vaccine)</td>
</tr>
<tr>
<td>IPV (inactivated poliovirus vaccine)*</td>
</tr>
<tr>
<td>PCV (pneumococcal conjugate vaccine)*</td>
</tr>
<tr>
<td>HPV (human papillomavirus vaccine)**</td>
</tr>
</tbody>
</table>

*Gavi-supported vaccines.
** Being introduced.


Once it passed the Gavi eligibility threshold of annual GNI per capita of $1,580, Honduras began to move through the Gavi transition process, taking on 20 percent more per year of vaccine financing. From 2010 to 2015, Honduras undertook a step-by-step process of transitioning away from Gavi support. As of December 31, 2015, Honduras was considered to have “graduated” from new Gavi support and is not eligible to apply for new awards.

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14 Gavi, the Vaccine Alliance, “Honduras.”
However, under Gavi policies for transitioning countries, in May 2015 Honduras won approval for support to introduce the inactivated polio vaccine (IPV) as the world goes through the “phased removal” of the trivalent OPV to the bivalent OPV in April 2016.16

Timeline of Important Immunizations Events: Honduras

- 1979: PAI (Programa Ampliado de Inmunizaciones) founded
- 1987: First multi-year plan for immunizations
- 1989: Last reported polio case
- 1997: Last reported measles case
- 2004: First Gavi grant
- 2004: Last reported rubella case
- 2009: Introduction of rotavirus vaccine
- 2011: Honduras enters accelerated phase of Gavi transition
- 2011: Introduction of pneumococcal vaccine
- 2015: Initiation of IPV switch
- 2016: Honduras ends transition away from Gavi support, is financing 100% of vaccines
- 2016: Introduction of HPV vaccine (planned)


U.S.-Honduras Bilateral Relations

The United States and Honduras have enjoyed a long diplomatic relationship, characterized by generally smooth interactions on trade and security cooperation and interrupted by periodic tensions, including during the 2009 political succession crisis.17 The principal U.S. agency supporting work on health in Honduras has been the U.S. Agency for International Development (USAID). The agency has had a presence in Honduras since 1961, contributing a total of US$3 billion in development assistance over nearly six decades.18 United States-supported work on improving access to health services has accompanied other programs on education, food security, democratic governance, and security. Funding for maternal and child health, an important component of U.S. support to Honduras between 1961 and 2010, began to diminish in 2011, and USAID spent just US$1.2 million on maternal and child health in 2014.19 Although there have been no
new funds for maternal and child health allocated in the last two years, the USAID Health Office in Tegucigalpa remains engaged on Honduras’s immunization coordinating committee. The current areas of focus for the USAID mission in Honduras are citizen security and combating extreme poverty in the dry, western region of the country.

Two additional U.S. agencies have been engaged on health in Honduras. The Centers for Disease Control and Prevention (CDC), through its regional Global Disease Detection facility based in Guatemala, as well as through the Field Epidemiology Training Program (FETP), has helped train epidemiologists within the Secretariat of Health and has supported Honduras in bolstering its emergency response and management capabilities. The Peace Corps suspended its operations in Honduras in 2012, but in the past volunteers contributed to health projects in the communities in which they were placed; in 1998, following the devastation wrought by Hurricane Mitch along the country’s Atlantic coast, multiple U.S. agencies supported emergency response efforts to protect health at the community level.

The current emphasis of U.S. support to Honduras is on improving governance and protecting citizen security. In FY 2016, the United States reaffirmed a commitment of up to US$750 million to support the Alliance for Prosperity in the Northern Triangle. The initiative builds on the Central American Citizen Security Partnership, which was launched in March 2011. This plan allows for some projects to be focused on global health, but it is not clear whether immunization program support will be a part of the efforts. Most funds are intended to support regional programs related to governance, transparency and accountability, the safety and security of migrants, and civil society engagement in political processes.

<table>
<thead>
<tr>
<th>Year</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>18.11</td>
</tr>
<tr>
<td>2007</td>
<td>18.02</td>
</tr>
<tr>
<td>2008</td>
<td>18.11</td>
</tr>
<tr>
<td>2009</td>
<td>15.21</td>
</tr>
<tr>
<td>2010</td>
<td>13.01</td>
</tr>
<tr>
<td>2011</td>
<td>11.99</td>
</tr>
<tr>
<td>2012</td>
<td>9.0</td>
</tr>
<tr>
<td>2013</td>
<td>3.58</td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
</tr>
</tbody>
</table>


20 Gavi, the Vaccine Alliance, "Annual Progress Report 2013, Submitted by the Government of Honduras."
To help strengthen community perceptions of law enforcement personnel, the U.S. embassy in Tegucigalpa has worked with the Honduras National Police to provide supplies to public health clinics in high-crime areas.\(^{26}\)

**Planned U.S. Government Funding for Honduras, 2010–2016**

![Graph showing planned U.S. government funding for Honduras, 2010–2016.](image)

**Challenges within the Honduras Gavi Transition**

Based on our conversations in Honduras, we identified several potential challenges to the sustainability of the immunization program in the context of the Gavi transition.

The current security environment in Honduras raises serious concerns about the sustainability of health investments, in general, and immunization programs, specifically. The violence makes families afraid to leave their homes to take their children to public clinics for immunizations, and when gangs control some urban neighborhoods, it can be difficult for health workers to reach un- or under-vaccinated children, as well.\(^{27}\) We heard of

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\(^{27}\) Gavi, the Vaccine Alliance, "Annual Progress Report 2013, Submitted by the Government of Honduras."
threats to health workers as well as extortion—that they have to pay a “tax” if they want to enter some of the gang-controlled neighborhoods.28

The ongoing threats to citizen security in Honduras have also influenced a shift in the focus of the external resources provided to the country, with funds for health decreasing as funding for security increases. For example, in 2014 Canada named Honduras one of 25 priority countries for international development efforts, identifying maternal and child health as a key area of focus.29 But we learned in interviews earlier this year that some program support for Honduras has been put on hold while the new government of Justin Trudeau considers how to address regional challenges in the security sector.30

Some experts with whom we spoke expressed concerns about the sustainability of the financial base for vaccine purchases in Honduras, as well. Acknowledging that the partnership with Gavi, particularly the Gavi cofinancing requirements, have stimulated a close relationship between the Secretariat of Health and Secretariat of Finance on planning related to immunization program funding, they nevertheless worried that if the 2014 Vaccine Act is not fully implemented, then annual funds for vaccine purchases may not be guaranteed in the future. Recent scandals over corruption and misuse of funds within the health sector, including the illicit sale of essential drugs and commodities from the Central Medicines Warehouse, have also raised concerns about program integrity.31 However, officials with whom we spoke noted that because vaccines are provided free of charge, there is little incentive for people to steal and try to sell them.

There are potential long-term technical challenges, as well. Many of our interviewees expressed concerns that the health system in Honduras lacks the capacity to sustain what has been hailed as a high-performing cold chain system. They worried that maintaining equipment in isolated rural areas presents a significant challenge and noted that there are limited resources to acquire the newer and lower-maintenance technologies, such as solar-powered refrigeration units.

An inability to gather and analyze information about immunization coverage rates also hampers the efforts

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28 Author interviews, Tegucigalpa, Honduras, January 18–19, 2016.
30 Author interviews, Tegucigalpa, January 18–20, 2016.
of the public health sector to accurately assess program successes and needs. On our visits to two health clinics in the capital city of Tegucigalpa, we saw information about patients being added by hand to paper notebooks in open-air facilities. The data must then be copied and sent on to a central location for processing and assessment. If the challenges posed by managing information in crowded metropolitan health centers are not difficult enough, in rural areas there are even greater time pressures on health care providers. Thanks to health-sector reforms, staff who once focused on delivering vaccines are now required to manage multiple health programs and are ill-equipped to collect, analyze, and transfer information in a timely manner.32

One social factor that undermines the performance of the immunization program is migration—both the intraregional migration of the Miskito peoples, who consider territory on both sides of the Honduras and Nicaragua borders to be their homeland, and the movement of adults, as well as minors, away from Honduras, frequently to the United States.33 Several of the people we interviewed noted that the remoteness and inaccessibility of the Miskito area makes it difficult and expensive to ensure levels of immunization coverage adequate to avoid outbreaks of vaccine-preventable diseases.34

The considerable migration of Hondurans to other countries in Central America and to the United States also takes a toll. Children of adults who have emigrated to pursue better economic opportunities elsewhere are frequently taken care of by grandparents or other relatives, who may not possess all relevant information about their dependents’ vaccination histories. The thousands of minors who, since 2011, have fled the violence and gang rivalries in Honduras frequently travel abroad without information about their vaccine histories and may miss important vaccine milestones, as well.

Immunization Politics in Nicaragua

Nicaragua is the poorest country in Central America and the second poorest in the hemisphere, following Haiti. With a population of around 6.2 million, it sees about 136,923 infants born each year and has a large youth population; around 40 percent of the population is under the age of 20. Nicaragua shares a border to the north with Honduras and to the south with Costa Rica. Its economy is centered on agriculture, although it also has a growing textile industry. Its principal exports are coffee, sugar, beef, tobacco, and textiles. Nicaragua has maintained relatively solid economic growth over the past decade, with some support from Venezuela, in the form of subsidized oil, and debt relief from the World Bank. Poverty levels have dropped, with 29.6 percent of the population living in poverty in 2014, down from 42.5 percent in 2009.35 Recently the International Monetary

32 Author interviews, Tegucigalpa, Honduras, January 18–20, 2016.
34 Author interviews, Tegucigalpa, Honduras, January 18–19, 2016.
Fund announced that it would close its Resident Representative’s Office in August 2016, reflecting the country’s “macroeconomic stability.”

Nicaragua has been somewhat isolated from the drug-related violence that has affected Honduras, El Salvador, and Guatemala in recent years. However, there are reports that the country is seeing an increased movement of illegal drugs northward through remote border areas and autonomous regions, including the Miskito region. Since 2011 there has been a steady flow of migrants out of the country, with a 2014 rate of -3.1 per 1,000. Most settle in Costa Rica or Spain. Some head to the United States, as well, although the number of migrants arriving in the United States from Nicaragua is far fewer than from Honduras.

Under President Daniel Ortega’s Gobierno de Reconciliación y Unidad Popular (2007–present), Nicaragua has adopted pro-poor social policies, with a heavy focus on developing infrastructure in rural areas. These approaches build on the programs Ortega implemented as president from 1985 to 1991 following the victory of the leftist Frente Sandinista de Liberación Nacional (FSLN) over long-time dictator Anastasio Somoza Debayle, but the Ortega administration’s current embrace of free trade and promotion of the private sector represent an important departure from earlier Sandinista policies. The WHO estimates that the country’s per capita spending on health in 2013 was US$382, and Nicaragua remains dependent on external resources to fund health programs.

The Ministry of Health (MINSA) is the main provider of health services in the country, and services are typically delivered through the Sistemas Locales de Atención Integral de Salud (SILAIS), which correspond to the nation’s departments and autonomous regions. The ministry’s overarching goals include reducing high rates of maternal and perinatal mortality; reducing infant malnutrition; reducing tuberculosis; reducing vector-borne diseases; reducing HIV/AIDS and chronic diseases; and preventing cancer. The challenge of addressing maternal mortality in Nicaragua is especially acute, as a UN interagency commission estimated the country’s maternal mortality ratio for 2015 at 150 per 100,000 live births. In recent years the government has partnered with nongovernmental organizations to support a system of *casas maternas*, where pregnant women living in

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rural areas can spend the last few weeks before delivery close to health care services. Nicaragua also relies on a system of outreach volunteers, known as *brigadistas populares en salud*, who go door-to-door to gather information about health conditions at the community level and ensure families are aware of government-provided health programs.

Protecting child health has been an area of emphasis under the Gobierno de Reconciliación and Unidad Popular, but challenges remain. In 2013 the mortality rate of children under the age of five was 24 per 1,000, down from 66 in 1990. However, diarrhea and acute respiratory infections remain important causes of childhood illness, and nearly half of all children suffer from nutritional deficiencies. Although Nicaragua has made significant progress in addressing nutrition concerns in the last two decades, the improvements have not reached all sectors of the population. According to the World Bank, more children in the country’s lowest income quintile are estimated to suffer from malnutrition than those among the wealthiest sectors. Nicaragua’s youngest women experience a high rate of pregnancy, with half of all women under the age of 20 having already given birth. Boys and girls report high levels of sexual abuse.

As in Honduras, there is a long history of immunization programs in Nicaragua. Nicaragua’s Programa Nacional de Inmunizaciones (PNI) was launched in 1977 following support and technical advice from PAHO. It is part of MINSA’s Direcccion General de Vigilancia Para la Salud and oversees the Centro Nacional de Biológicos (CENABI), which stores vaccines and distributes them to SILAIS posts throughout the country. Nicaragua has seen significant improvement in its DTP3 coverage in recent years, with 75 percent of municipalities reporting more than 95 percent coverage in 2014, up from 58 percent in 2011. In addition to overseeing routine vaccination programs at community health

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centers, the PNI coordinates special Jornadas Nacionales de Vacunación (National Immunization Days) as well as Campañas de Seguimiento (Catch Up Campaigns).\textsuperscript{52}

\begin{table}[h]
\centering
\begin{tabular}{|l|}
\hline
National Vaccination Schedule in Nicaragua  \\
BCG  \\
OPV  \\
Pentavalent (DPT/HepB/Hib)*  \\
Rotavirus*  \\
DTP  \\
MMR  \\
dT  \\
Influenza  \\
PCV*  \\
IPV*  \\
\hline
\end{tabular}
\caption{National Vaccination Schedule in Nicaragua}
\end{table}

Gavi has supported immunization programs in Nicaragua since 2005. Thanks to Gavi assistance, in 2006 Nicaragua introduced the rotavirus vaccine at the same time that it was launched in the United States; in 2010 it introduced the pneumococcal vaccine. Total Gavi commitments to date are more than US$33 million. In 2015, Nicaragua received Gavi funds to introduce the IPV during the global shift from trivalent to bivalent OPV in 2016. With an annual GNI per capita of US$1,870 (2014), it has begun the Gavi transition process.

Anticipating the need to ensure an affordable supply of vaccines for the population, Nicaragua has begun to explore the possibility of producing vaccines domestically. In 2015 the government of Nicaragua signed an agreement with the government of Russia to strengthen domestic capacities in the regulation and production of biological products, including vaccines. Under the terms of the agreement, the St. Petersburg Scientific Research Institute for Vaccines and Sera, the Nicaraguan Social Security Institute, the MINSA, and the PAHO country office will cooperate in developing a plan to strengthen the country’s pharmaceutical production capabilities.\textsuperscript{53}


U.S.-Nicaragua Bilateral Relationship

Since the establishment of diplomatic relations between the United States and Nicaragua in the mid-nineteenth century, the two countries have weathered an often-rocky relationship, with a current emphasis on deepening economic ties through the CAFTA-DR free-trade agreement and poverty-reduction strategies. Relations between the two countries were particularly tense in the 1980s, when the United States supported covert operations against the leftist Sandinistas. Relations remained difficult during the first presidency of Daniel Ortega (1985–1991), during which the United States imposed a trade embargo on Nicaragua, but improved following the installation of Violeta Chamorro as president in 1991.

USAID established a mission in Nicaragua in 1962, and the mission has maintained a strong focus on maternal and child health, water and sanitation, and health systems strengthening over several decades. Starting in 2011 the agency’s support for bilateral health programs began to decline, with support for maternal and child health phased out after 2013. Recently completed projects supported by USAID included an initiative to more constructively engage men in their wives’ pregnancies and birth-planning processes, which was implemented by Catholic Relief Services in the remote Matagalpa region. Currently USAID health funds support only an HIV/AIDS program, although some food assistance programs have a health component.

Current U.S. government funding priorities in Nicaragua focus on democracy and governance, with an important emphasis on education, as well. USAID also supports civil society organizations in analyzing government budgets and monitoring the government’s compliance with national legislation and international agreements.

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**Timeline of Important Immunizations Events: Nicaragua**

- 1977: PNI (Programa Nacional de Inmunizaciones) founded
- 1981: Last reported polio case
- 1994: Last reported measles case
- 1998: Last reported rubella case
- 2004: First Gavi grant
- 2006: Introduction of rotavirus vaccine
- 2010: Introduction of pneumococcal vaccine
- 2016: Nicaragua enters accelerated phase of Gavi transition
- 2021: Nicaragua ends transition away from Gavi support, is financing 100 percent of vaccines


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Current Programs and Emerging Challenges in Nicaragua

In Nicaragua, the high-performing immunization program is a political priority, and the population expresses confidence in vaccines provided through public programs. At the national level, immunization coverage rates are high, but there are some remote, often rural, municipalities where coverage remains below 50 percent. Some representatives of civil society associations and international organizations with whom we spoke noted that information about government spending on the immunization program and about program quality and performance is highly controlled by MINSA and can be difficult to obtain.

Nicaragua faces a looming deficit of health workers trained to deliver vaccines, including the newer ones, as well. Under the current Ortega regime public-sector workers, including those in the health sector, are strongly encouraged to affiliate with the ruling Sandinista party and are also prohibited from striking and protesting low wages. Some highly competent health workers with considerable technical expertise have left MINSA for work in NGOs or international organizations, while others have migrated to Spain, Costa Rica, and other countries in the region to apply their skills. We also learned that an entire generation of health care providers who trained with international specialists during the revolutionary period of the 1980s are now nearing retirement, leaving behind a smaller cohort of qualified health personnel.

As in Honduras, Nicaragua faces challenges in maintaining and sustaining the quality of its cold chain system as it proceeds through the Gavi transition process. We heard that while there is sufficient storage capacity for the newer vaccines at the national level warehouse, the regional facilities do not have adequate refrigerated storage for the supplies needed.

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58 Author interviews, Managua, Nicaragua, January 20–22, 2016.
59 Ibid.
and so must request deliveries of vaccines two to three times a month, potentially compromising the quality of the products.

Options for the United States to support the Gavi Transition in Central America and Beyond

The long history of U.S. support for global maternal and child health programs, emphasis on assisting countries in strengthening their immunization programs, and considerable investments in Gavi, the Vaccine Alliance, over the past 15 years all underscore why the United States should have a strong interest in ensuring LMICs transitions from Gavi support proceed smoothly and sustainably.

We recommend that at the global level, the United States can advocate that current donors sustain, or even increase, their yearly commitments to the Gavi Alliance, as the United States has done, and that it can use its position on the Gavi Board to advocate for reforms to the transition process, including the following actions:

- It could advocate for and help craft policies to ensure countries that have transitioned from Gavi support have access to Gavi prices for up to 10 years or longer.

- It could advocate for greater refinements to the transition process to further slow transitioning countries’ step-down from Gavi assistance and to continue to strengthen Gavi support for, and assistance to, countries as they plan for transition.

- The United States could also advocate that Gavi consider subnational health or social-equity indicators, in addition to annual GNI per capita, before determining that partner countries are ready to enter the transition process.

- And the United States could share lessons from its own work in helping countries “graduate” from bilateral funding for family planning programs, including the development of multisectoral plans and the use of multiple indicators to assess country readiness for transition.60

At the regional level, the United States can continue to support regional mechanisms that enable countries to secure access to vaccines and immunization program commodities at low prices. This includes supporting the principles of the PAHO Revolving Fund and could also include supporting efforts to bring in additional partners, such as middle income countries with large populations in other regions, to drive prices further down through economy of scale.

In addition, the United States should continue to provide technical support to PAHO through secondment of immunization specialists from CDC and USAID. Even if the United

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States remains committed to continuing to draw down bilateral development assistance for health in Central America, it can work through the CDC’s regional Global Disease Detection facility in Guatemala and the Navy’s NAMRU-6 in Peru to continue to strengthen technical cooperation around immunization programs, disease surveillance and laboratory capacities in the region.

On April 6, 2016, the Obama administration announced that it will allocate US$589 million, including US$510 million in funds previously set aside for responding to the Ebola outbreak in West Africa, to scale up efforts to prepare for and respond to the Zika virus outbreak sweeping the Americas.61 While the White House has not yet detailed how the funds will be spent, if some of these emergency activities reach Honduras and Nicaragua, they could provide a foundation for renewed U.S. engagement on maternal and child health challenges.

At the national level, the sustainability of high-performing immunization programs in Honduras and Nicaragua is at risk because of ongoing challenges related to health-sector reform, maintaining the cold chain, enabling health workers to reach the most underserved populations, and collecting and analyzing data.

The United States could revisit its decision to draw down bilateral health assistance in the two countries; at the same time, it could use other programs, such as those dedicated to food security or democracy and governance, to strengthen program integration and citizen engagement, recognizing that poor health is both a driver of, and consequence of, inequality and insecurity.

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Transitioning from Gavi Support in Lower-Middle-Income Countries
Options for U.S. Engagement in Central America

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