Implementation of Dengue Vaccine in Puerto Rico

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Puerto Rico Department of Health
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### Population under VFC

**Awardee Population Estimates**

<table>
<thead>
<tr>
<th>Population Estimate</th>
<th>0-1</th>
<th>1-2</th>
<th>3-6</th>
<th>7-18</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awardee population estimate for FY2020</td>
<td>27,379</td>
<td>57,373</td>
<td>130,823</td>
<td>486,482</td>
<td>701,057</td>
</tr>
<tr>
<td>Awardee approved population estimate for FY2019</td>
<td>30,122</td>
<td>69,135</td>
<td>140,676</td>
<td>509,921</td>
<td>742,954</td>
</tr>
</tbody>
</table>

**VFC Eligibility Summary**

<table>
<thead>
<tr>
<th>VFC Eligibility Definitions</th>
<th>0-1</th>
<th>1-2</th>
<th>3-6</th>
<th>7-18</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid estimate for FY2020</td>
<td>12,599</td>
<td>29,711</td>
<td>63,647</td>
<td>197,882</td>
<td>303,999</td>
</tr>
<tr>
<td>The number of American Indians/Alaska Natives</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The number of children without health insurance</td>
<td>634</td>
<td>1,669</td>
<td>2,503</td>
<td>20,022</td>
<td>25,028</td>
</tr>
<tr>
<td>FQHC/RHC</td>
<td>53</td>
<td>163</td>
<td>69</td>
<td></td>
<td>757</td>
</tr>
<tr>
<td>Delegated Authority (DA)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DA Data Source Comments</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-total VFC Eligible</td>
<td>13,445</td>
<td>31,543</td>
<td>66,419</td>
<td>218,376</td>
<td>329,784</td>
</tr>
<tr>
<td>Non-VFC Eligible</td>
<td>13,933</td>
<td>26,830</td>
<td>64,404</td>
<td>287,106</td>
<td>371,273</td>
</tr>
</tbody>
</table>

Children 7-18 years VFC 45%
Medicaid 41%
Uninsured 4%
Private 55%
• 209 VFC providers
• 296 Private providers
A child is eligible for the VFC Program if he or she is younger than 19 years of age and is one of the following:

- Medicaid eligible
- Uninsured
- Underinsured
- American Indian or Alaska native

Uninsured and underinsured children are eligible to receive only at Federally Qualified Health Centers (FQHC) or Rural Health Clinics (RHC). An FQHC is a type of provider that meets certain criteria under Medicaid programs.
Mission

To prevent the development of vaccine preventable diseases through strategic implementation and intervention facilitating services in accordance with the vaccine schedule for children, adolescents and adults of Puerto Rico.

Vision

To maintain a protected population against vaccine preventable diseases thus reducing outbreaks, hospitalizations and deaths.
PRDoH Immunization Program
What we do?

- Recommend immunization public policy
- Guarantee immunization quality services
- Supply vaccines funded by the federal government to vaccine providers for Medicaid
- Audit vaccine management, storage, handling and administration
- Promote and educate parents on importance and security of vaccines
- Implement the PR Immunization Law (#25)
- Do not offer direct patient care services except during public health emergencies
Enacted on September 1983

Puerto Rico Immunization Law

For all day care centers, schools and universities

Secretary of Health determines all immunization school requirements adhering to ACIP recommendations

Allow for medical and religious exemptions only

https://adobe.ly/31wTyVv
Estimated vaccination coverage adolescents 13-17 years, Puerto Rico, 2019

- Hep B: 97%
- VAR: 87%
- Tdap: 85%
- MCV4: 96%
- HPV 1: 84%
- HPV 2: 58%

Fuente: Registro de Inmunización de PR (PRIR), Programa de Vacunación, Departamento de Salud de PR
Estimated coverage HPV vaccine adolescents 13-17 years, Puerto Rico, 2007-2019

Percent Vaccinated

Fuente: Registro de Inmunización de PR (PRIR), Programa de Vacunación, Departamento de Salud de PR
Dengue vaccine implementation in Puerto Rico
Reported dengue cases in the Americas by year, 1980–2020

Source: Pan American Health Organization, PLISA Health Information Platform
Suspect Dengue in Puerto Rico, 1986-2013

Dengue epidemics occur every 3-5 years in Puerto Rico.
Education of providers and parents

• Assemble education materials for physicians
  • Training sessions
    • Pediatric associations
    • College of physicians
    • College of nurses

• Educational material for parents
  • Post materials for doctor’s office and vaccination clinics

• Media campaign to inform the public
Who will pay?

• Vaccine costs covered by VFC and insurance
• Medicaid will cover the cost of the test for Medicaid eligible
• Insurance will cover the cost of the test for those with private insurance
• For those uninsured or underinsured sources of funding will be identified
Pre-vaccination screening serologic testing

• Puerto Rico laboratories have experience using non-FDA approved tests under Clinical Laboratory Improvement Amendments (CLIA)

• The PR health department will consider providing specific guidance on the test approved locally for pre-vaccination

• After FDA approval pediatricians can apply for permission to run the test in their clinics

• Standing orders for dengue IgG pre-vaccination screening tests in immunization clinics will be considered

• Testing orders and results can be received online
Arbovirus surveillance system

• Dengue testing is currently centralized
• Arbovirus surveillance system will be updated to receive reports from private laboratories
• Test results will be linked to data from the immunization registry
Logistics of dengue vaccination in Puerto Rico

Scenario 1: Provider with onsite laboratory and vaccination services

- **Health care provider** orders lab test
- **Laboratory visit**
- **Testing at clinical laboratory**
- **Health care provider** interprets lab test

- Positive
  - **Immunization provider** visit 1
  - **Immunization Registry**
- **Record in PRIR**
- **Schedule next Vx**

- Negative
  - **Administer Vx**
Logistics of dengue vaccination in Puerto Rico

Scenario 2: Provider does not have lab or vaccination services

- **Pediatrician/MD**
  - Visit 1: Health care provider orders lab test

- **Lab visit**
  - Visit 2: Clinical laboratory draw sample

- **Testing at clinical laboratory**

- **Health care provider**
  - Interprets lab test

- **Immunization provider**
  - Visit 4: Administer Vx

- **Immunization Registry**
  - Record in PRIR

- **Arbovirus Surveillance database**
  - Schedule next Vx

- **9-16-years old**

Vaccine covered by VFC or insurance
Test cost covered by Medicaid or insurance

END
FQHC and CDT have all services phased-in implementation can start at these sites.
How will we monitor for vaccine safety events post-approval?
Detection through VAERS

- Puerto Rico has an appointed and experienced VAERS coordinator
- Events regularly reported to VAERS
  - 817 events reported in 2021 as of 5/22 (CDC WONDER)
- Likely to detect events immediately after vaccination
Long term vaccine safety

- Hospitalizations and severe dengue
- Will likely happen several years after vaccination
- Reported through the existing passive dengue surveillance system
DENV case surveillance in Puerto Rico

- All DENV testing centralized at Puerto Rico Department of Health Laboratory
  - Biological and Chemical Emergency Laboratory (BCEL)
- Specimens submitted with case investigation form
- All cases captured in Arboviral Database
- Under-reporting exists, ratio of 1 reported for every 5–9 hospitalized (Shankar, 2018)
Enhancing surveillance for dengue cases after vaccination

- Conduct outreach to hospitals to educate about the dengue vaccine
- Retrain doctors on clinical suspicion of dengue
- Streamline and reinforce reporting of hospitalizations for suspected dengue cases
- Consider enhanced surveillance at children’s hospitals
Ascertaining vaccination information for hospitalized cases

- Add dengue vaccine history to arboviral case investigation form
- Confirm status with vaccine registry
- Monitor reported numbers of hospitalizations among vaccinated children to identify potential safety signals
Summary

- PRDoH adopts ACIP recommendations for local vaccine schedule - reviewed annually
- Immunization registry reporting is mandatory by administrative order
- Population 9-10 years old receive limited vaccines as no routine vaccines recommended
- Dengue testing can be incorporated to annual wellness visit
- About 25% of VFC providers have lab capability in house (FQHCs & CDTs), can start pilot dengue vaccination at these sites
- Vaccine series completion in age cohort is lower for 2\textsuperscript{nd} and 3\textsuperscript{rd} dose
Summary

▪ VAERS in place to detect adverse events short-term after vaccination
▪ Existing DENV surveillance system can capture cases years after vaccination
  • Need to prepare and strengthen infrastructure
▪ Can monitor overall numbers and use modeling to assess expected numbers
Questions?