



FLORIDA
INTERNATIONAL
UNIVERSITY



FUNDACIÓN
Carlos Slim

IMPORTANCE OF ELECTRONIC IMMUNIZATION RECORDS TO ESTIMATE VACCINATION COVERAGES

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Director of Global Solutions

The persistent threat of Vaccine-Preventable Diseases

Epidemiological panorama of measles in the Americas, 2017-2019:

15 countries
17,675 confirmed cases
85 deaths



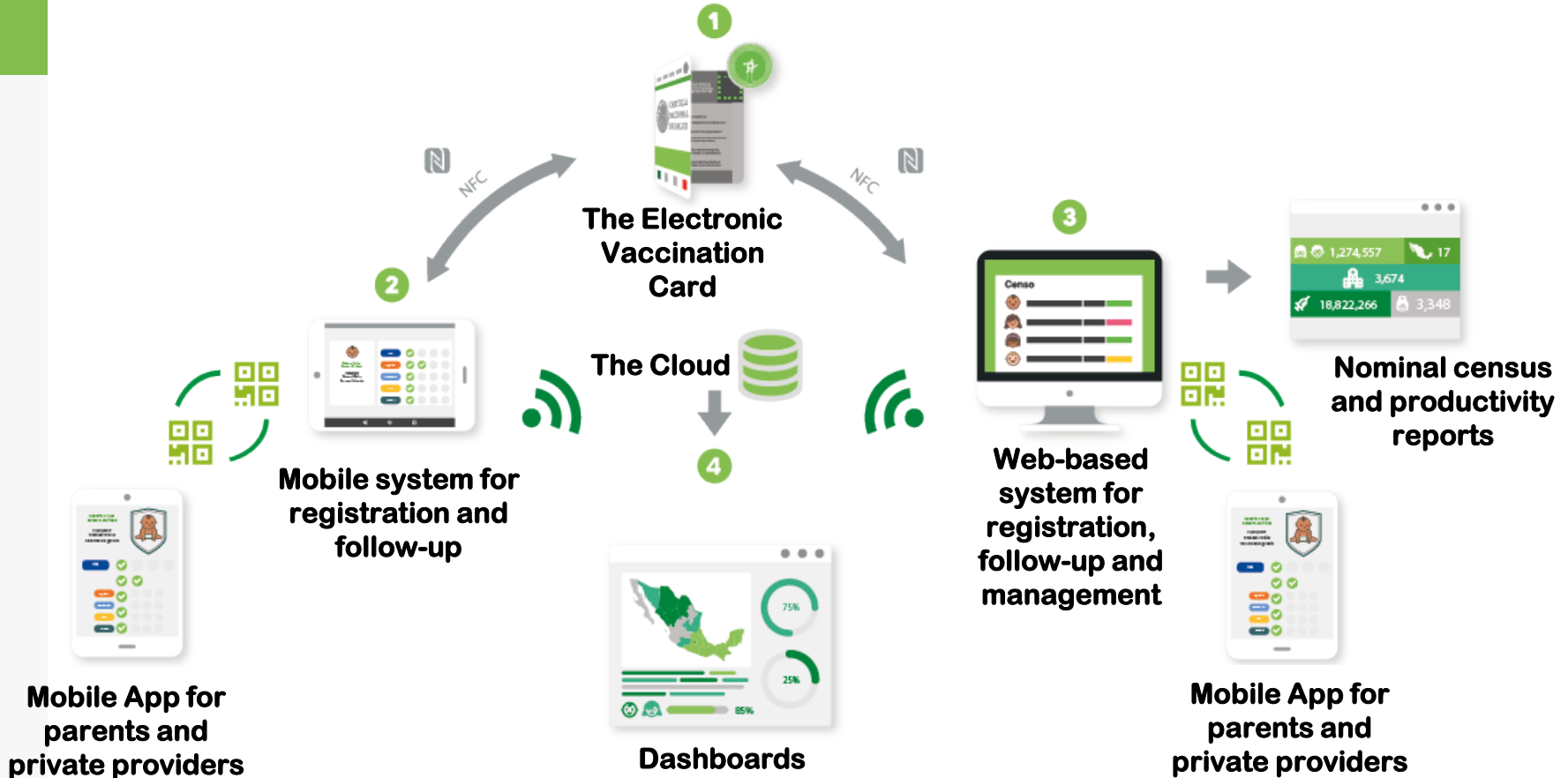
WHAT CAN WE DO ABOUT IT?



Elements of a successful immunization program



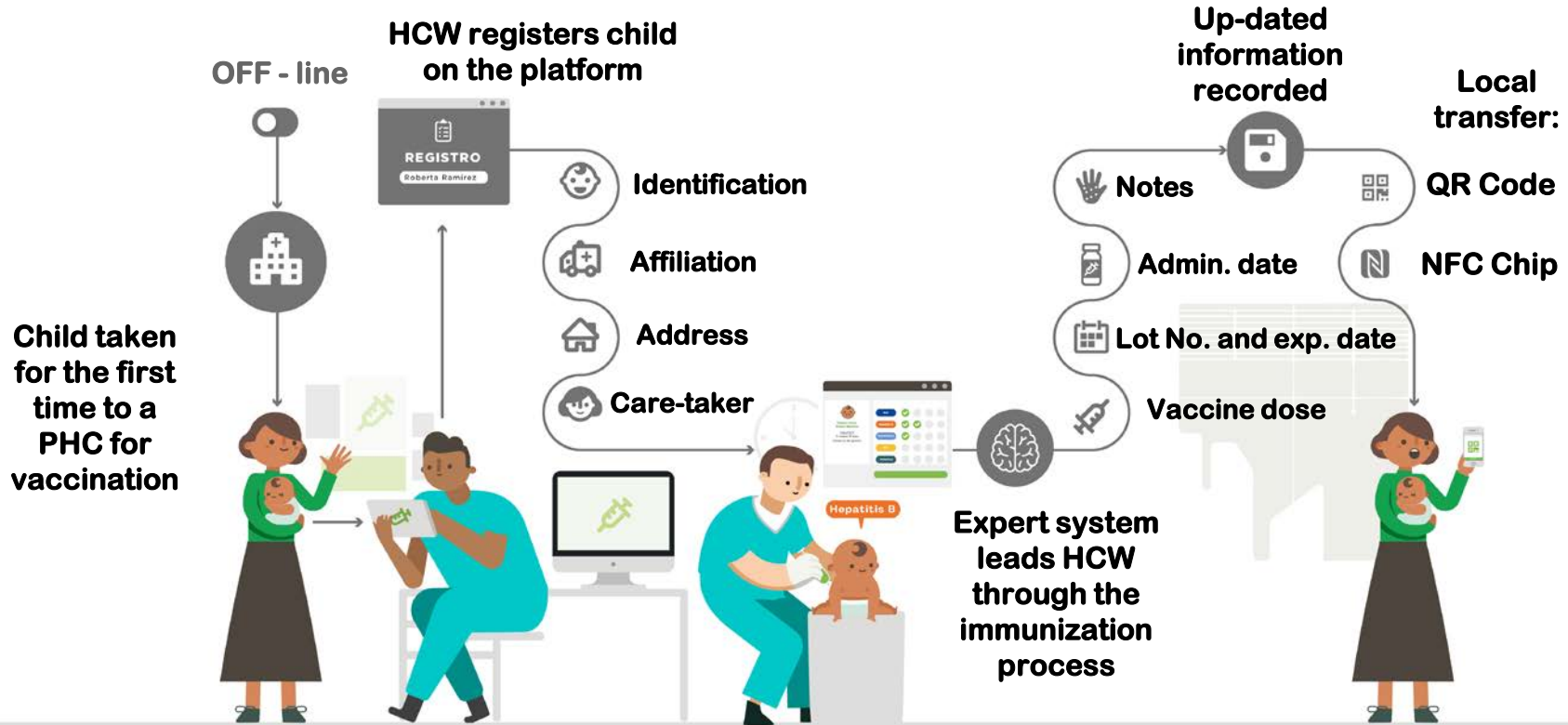
Digital platform for immunization program management



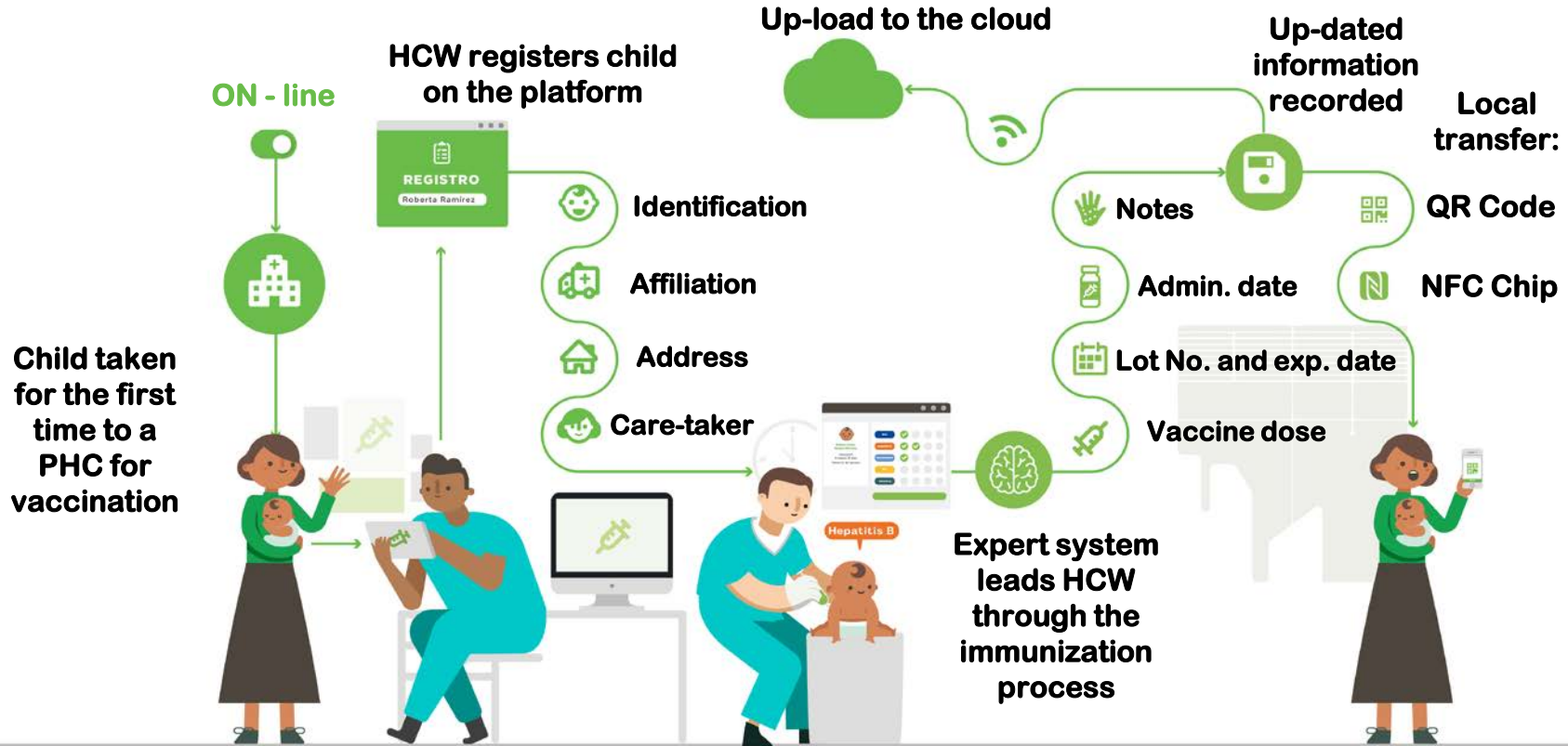
THIS IS HOW IT
WORKS...



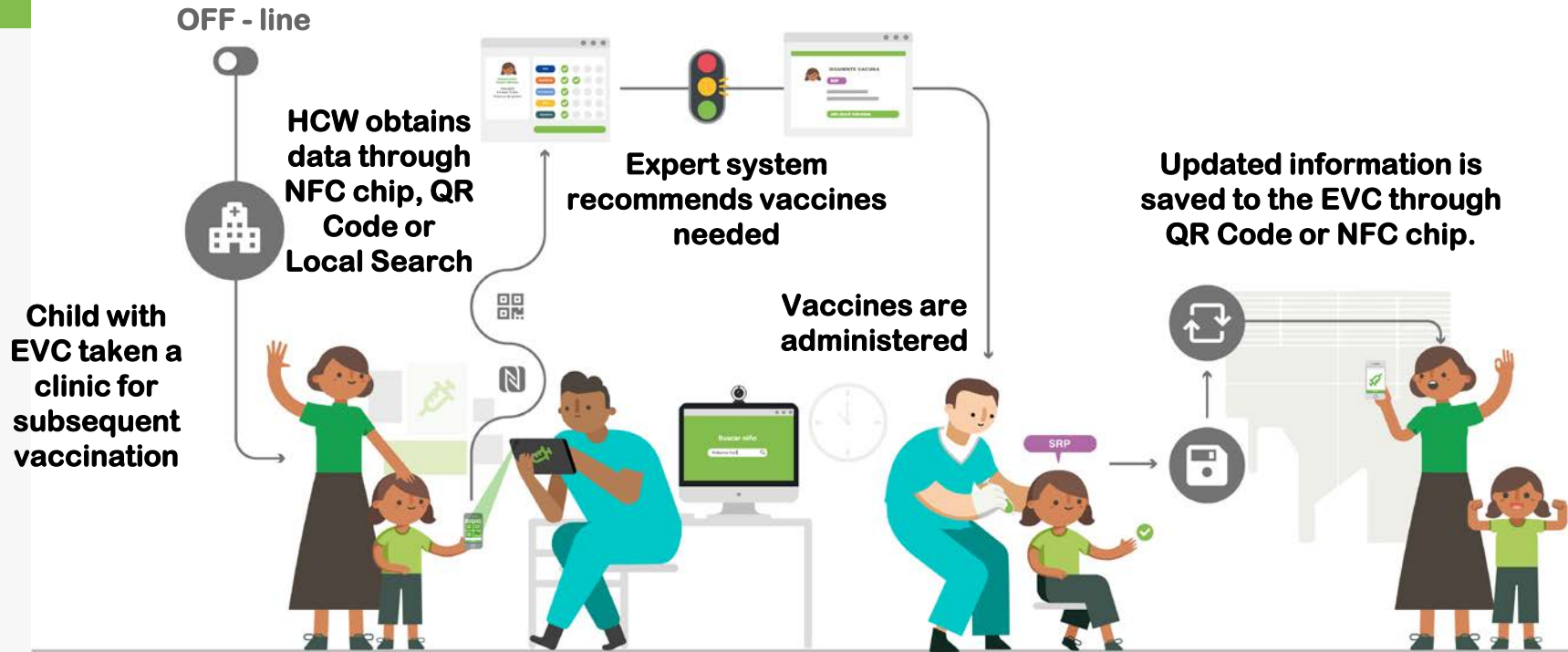
Digital platform for immunization program management



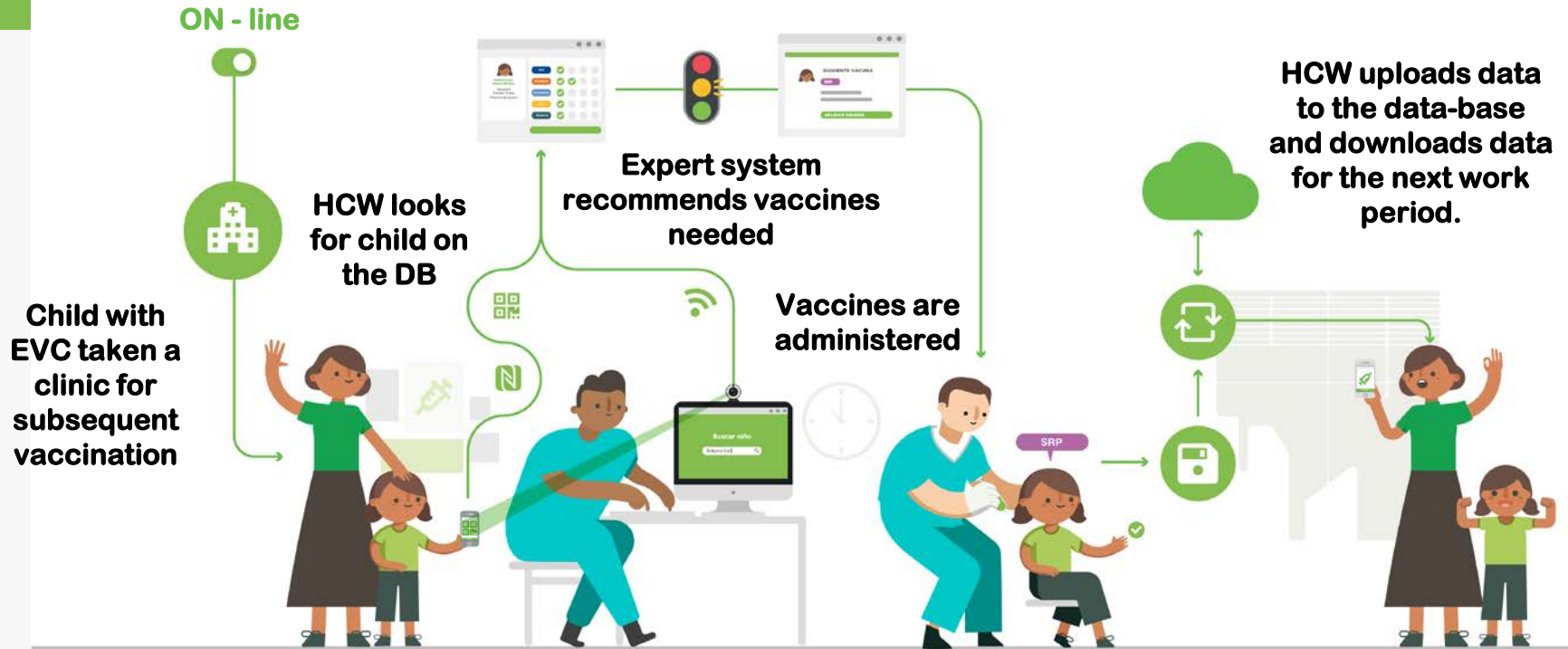
Digital platform for immunization program management



Digital platform for immunization program management



Digital platform for immunization program management



INDIVIDUAL FOLLOW -UP



Individual follow-up












Proper vaccine coverage measurement requires a system that allows for individual follow-up of vaccines administered:



 17	Al nacer	Mes 2	Mes 3	Mes 4
				
				
				
				
				

Vaccination rules: Measuring timeliness of immunization

📅 Dosis, edad y frecuencia por mes

Tipo de biológico	Dosis	Al nacer	Mes 2	Mes 3	Mes 4	Mes 5	Mes 6	Mes 7	Mes 8	Mes 9	Mes 10	Mes 11	Mes 12
BCG	Única												
Hepatitis B	Primera												
Hepatitis B	Segunda												
Hepatitis B	Tercera												
Pentavalente	Primera												
Pentavalente	Segunda												
Pentavalente	Tercera												

Individual follow-up



17	Al nacer	Mes 2	Mes 3	Mes 4

The system registers any missing vaccine according to each child's age.

Individual follow-up



17	Al nacer	Mes 2	Mes 3	Mes 4

Alerts the Health Care Professional to look for the children with missing doses.

Individual follow-up



17	Al nacer	Mes 2	Mes 3	Mes 4

In order for each child's schedule to be completed.

Individual follow-up



17	Al nacer	Mes 2	Mes 3	Mes 4

The following month, once again, the system detects any missing vaccines.

Individual follow-up



17	Al nacer	Mes 2	Mes 3	Mes 4

HCWs look for the children with missing doses.

Individual follow-up



17	Al nacer	Mes 2	Mes 3	Mes 4

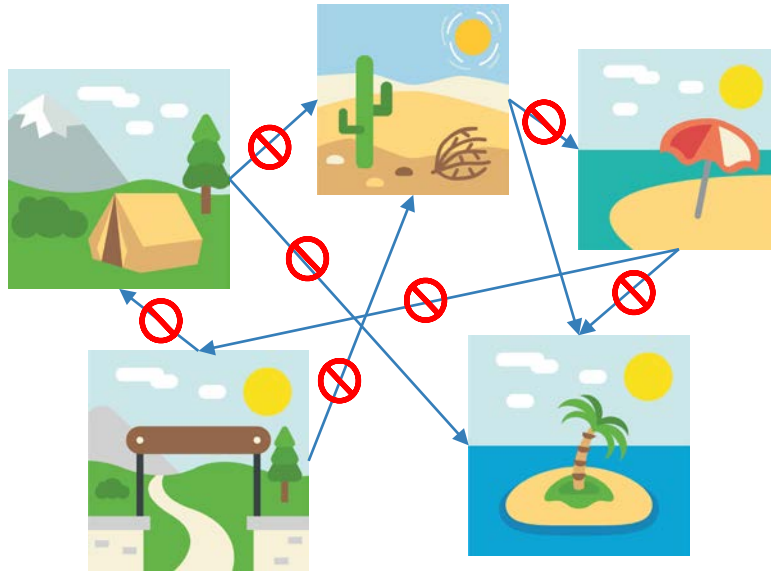
Again, missing vaccines are administered and recorded in the system.

WHAT ELSE?



Data portability

- ▶ Today data portability is not available.



- ▶ EVC works for everyone, no matter their health provider or place of residence.



Data back-up

- ▶ Today there is no recovery mechanism of immunization data in case of loss.
- ▶ EVC avoids data loss and allows for the recovery of a child's immunization information.



Immunization safety

The screenshot shows a mobile application interface titled "Datos del vacunado". It displays the following information:

- Recien Nacido Rodriguez Sanchez** (with an edit icon)
- 11/04/2017**
18 meses 19 días
294 días
- Identificador para App VacunAcción
LTHLDW9EIN
- Dirección del menor
**Calle 2, Camino a las flores,
Aguascalientes**
- Responsable del menor
Luis Hernández García
- Número de celular
55 4354 6778
- Ver cartilla** (with a right arrow icon)

- ▶ To reduce accidents, EVC guides HCWs through clinical decision-making

Immunization safety

The screenshot shows a mobile application interface with a white card titled "Preguntas generales" (General questions) on a grey background. The card contains three questions, each with two radio button options: "Si" (Yes) and "No" (No). At the bottom of the card is a green button labeled "Finalizar" (Finish). The background shows a navigation bar with icons for "Busquestes", "Cartilla", "Análisis", and "Inmunización".

12:30

← Cartilla A: ⋮

? Preguntas generales

¿Fiebre mayor a 38.5° presente en las últimas 24 horas?

Si No

¿Diarrea o deshidratación aguda que ameritó hospitalización en las últimas 2 semanas?

Si No

¿En los últimos 6 meses el vacunado recibió transfusión sanguínea completa?

Si No

Finalizar

Hepatitis B

Busquestes Cartilla Análisis Inmunización

- ▶ General pre-vaccination questions

Immunization safety

The screenshot shows a mobile application interface for immunization safety. At the top, there is a status bar with signal strength, Wi-Fi, and battery icons, and the time 12:30. Below the status bar is a navigation bar with a back arrow, the word "Cartilla", a smiley face icon, and the letter "A:". The main content area is a white card titled "Preguntas específicas" with a question mark icon. The card contains two questions, each with two radio button options: "Si" and "No". The first question is: "¿Vacunado presenta reacción alérgica a neomicina, estreptomicina o polimixina B?". The second question is: "¿Ante la última aplicación de esta vacuna el vacunado presentó síntomas de reacción anafiláctica o bien encefalopatía?". Below the questions is a green button labeled "Finalizar". At the bottom of the card are two buttons: "Omitir" and "Siguiente". Below the card is a navigation bar with a "Hepatitis B" tab and four other tabs. At the very bottom is a green bar with four icons: "Búsquedas", "Cartas", "Análisis", and "Inmunización".

12:30

← Cartilla A:

? Preguntas específicas

¿Vacunado presenta reacción alérgica a neomicina, estreptomicina o polimixina B?

Si No

¿Ante la última aplicación de esta vacuna el vacunado presentó síntomas de reacción anafiláctica o bien encefalopatía?

Si No

Finalizar

Omitir Siguiente

Hepatitis B

Búsquedas Cartas Análisis Inmunización

- ▶ Vaccine-specific pre-vaccination questions

Immunization safety

Cartilla

Vacunas Para el niño

1° Dosis

2° Dosis

3° Dosis

4° Dosis

Refuerzo Adicional

Pentavalente Acelular

1 de 3 Por aplicar hoy

Pentavalente Acelular

Pentavalente Acelular 2° dosis

Fecha de la aplicación

Hoy

Lote biológico

Fecha de caducidad

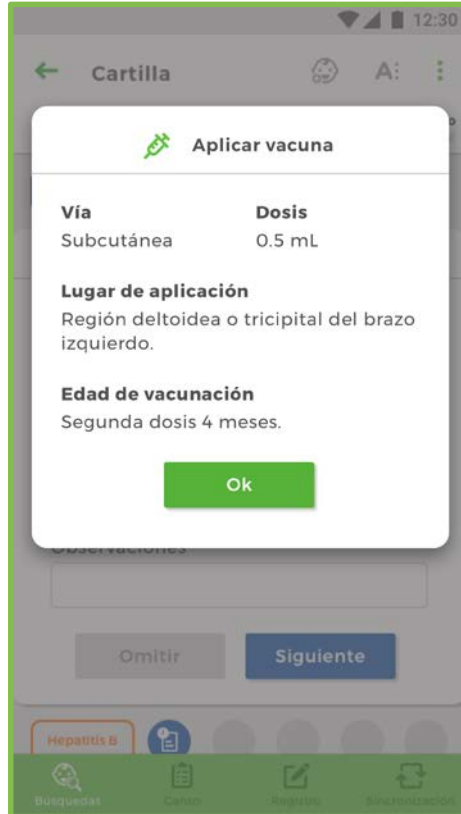
Observaciones

No aplicar

Aplicar

- ▶ Registration of relevant data for follow-up of adverse events

Immunization safety



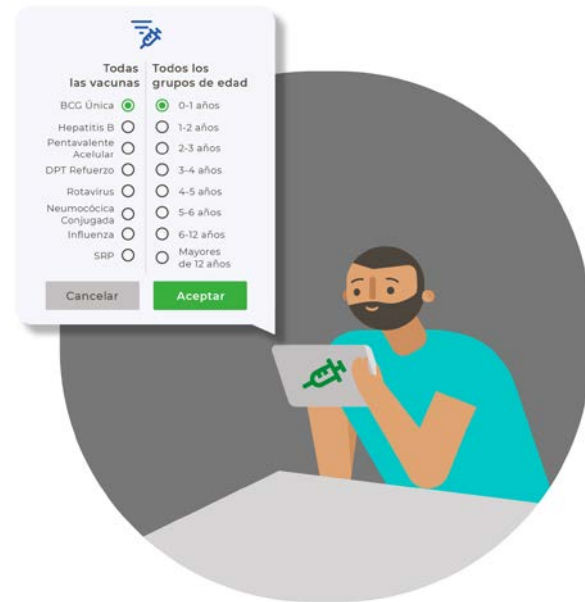
- ▶ Reminder of dose, administration site, recommended age, etc.

Organization of HCWs work-load

- ▶ HCWs spend up to 70% of their work-day in administrative tasks.
- ▶ EVC helps HCWs to organize and prioritize activities.



- ▶ Paper-less operation.
- ▶ Process standardization.
- ▶ Automatic report generation.



Aligning institutions in a Universal Health Program

- ▶ Mexico's fragmented health sector operates in many different ways leading to diverging results
- ▶ EVC enables unification of criteria to improve the impact of vaccination.



HOW FAR ALONG ARE WE?



Implementation of EVC in Mexico

- ▶ 1,983,001 Mexican children have now their EVC



Aguascalientes, Baja California Sur, Campeche, Colima, Chihuahua, Durango, Guanajuato, Hidalgo, Nayarit, Nuevo León, Querétaro, Quintana Roo, San Luis Potosí, Sinaloa, Sonora, Tlaxcala y Zacatecas.

El estado de Coahuila se encuentra en proceso de implantación con lo que el Sistema está operando ya en más de la mitad del territorio nacional.

Estados en operación: 17 de 32 (53.1%)

● Estados en operación

● Estados en proceso de implantación

Transparency and timeliness in the measurement of vaccine coverage

- ▶ The latest immunization coverage data reports published in Mexico: 2014 and 2015



Coberturas de vacunación

Coberturas de vacunación por entidad federativa.

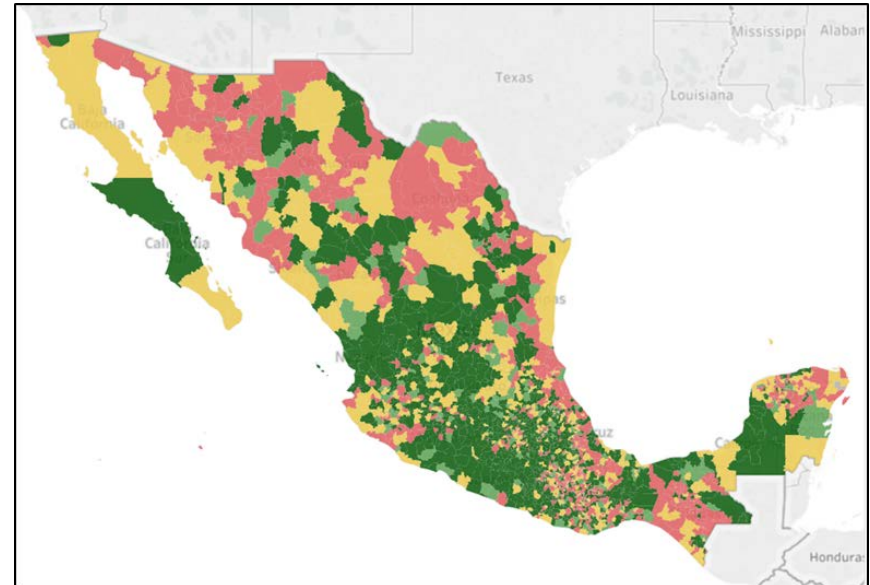
Autor
Centro Nacional para la Salud
de la Infancia y Adolescencia

Fecha de publicación
28 de septiembre de 2015

Contesta nuestra encuesta de satisfacción.



DPT3 coverage by municipality in Mexico PAHO, 2017



Transparency and timeliness in the measurement of vaccine coverage



Observatorio Mexicano de Vacunación



[Información general](#)

[Proporción de vacunas en niños menores de 1 año](#)

[Proporción de vacunas en niños de 1 año](#)

[Esquemas básicos completos](#)

[Vacunas No aplicadas](#)

Proporción de vacunas registradas en la Cartilla Electrónica de Vacunación

Información al 27 de abril de 2019

Niños registrados en la base de datos de CEV

Seleccionar filtros



Estado: QUINTANA ROO

Jurisdicción: CANCUN

Unidad de salud: CENTRO DE SALUD RURAL HOLB...

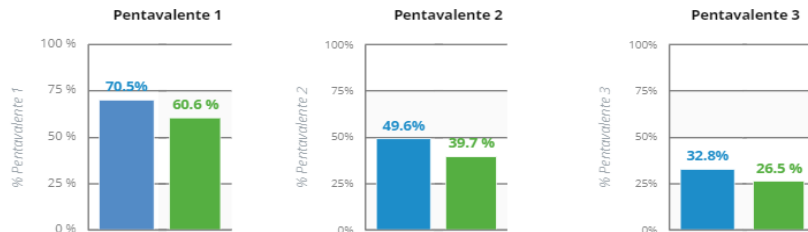
www.omevac.mx

Transparency and timeliness in the measurement of vaccine coverage

Proporción de *niños de 4 a 11 meses* de edad registrados en la base de datos de la CEV con vacuna *Pentavalente*

Información al 27 de abril de 2019

Visualización de información a nivel nacional



Acumulado
Con oportunidad

Fórmula de cálculo

Cálculo de gráficas de vacuna Pentavalente

Niños con la vacuna aplicada	158,588	136,440	89,167	71,452	42,088	33,924
Número de niños	225,092	225,092	179,925	179,925	128,251	128,251
Edad:	Penta 1: <i>de 4 a 11 meses</i>		Penta 2: <i>de 6 a 11 meses</i>		Penta 3: <i>de 8 a 11 meses</i>	

Reglas de vacunación de vacuna Pentavalente

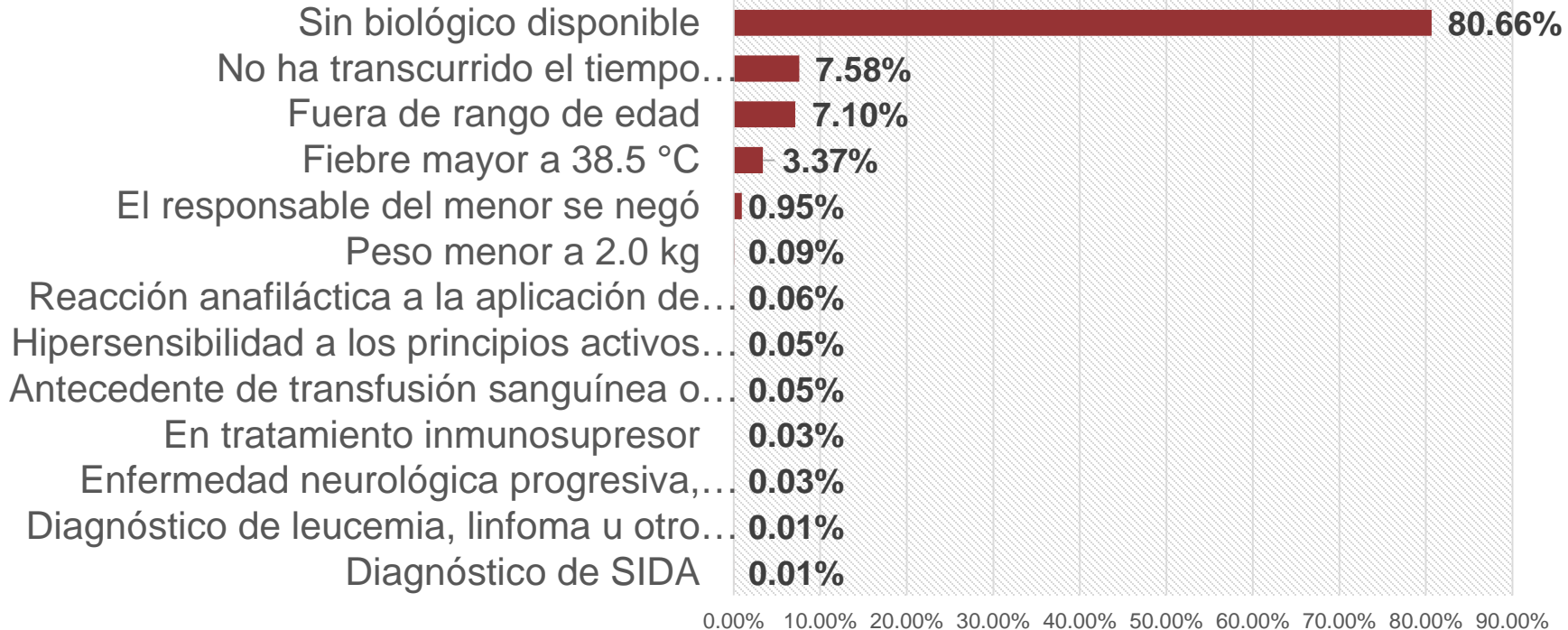


Proporción de vacunas aplicadas **acumuladas** y con **oportunidad**

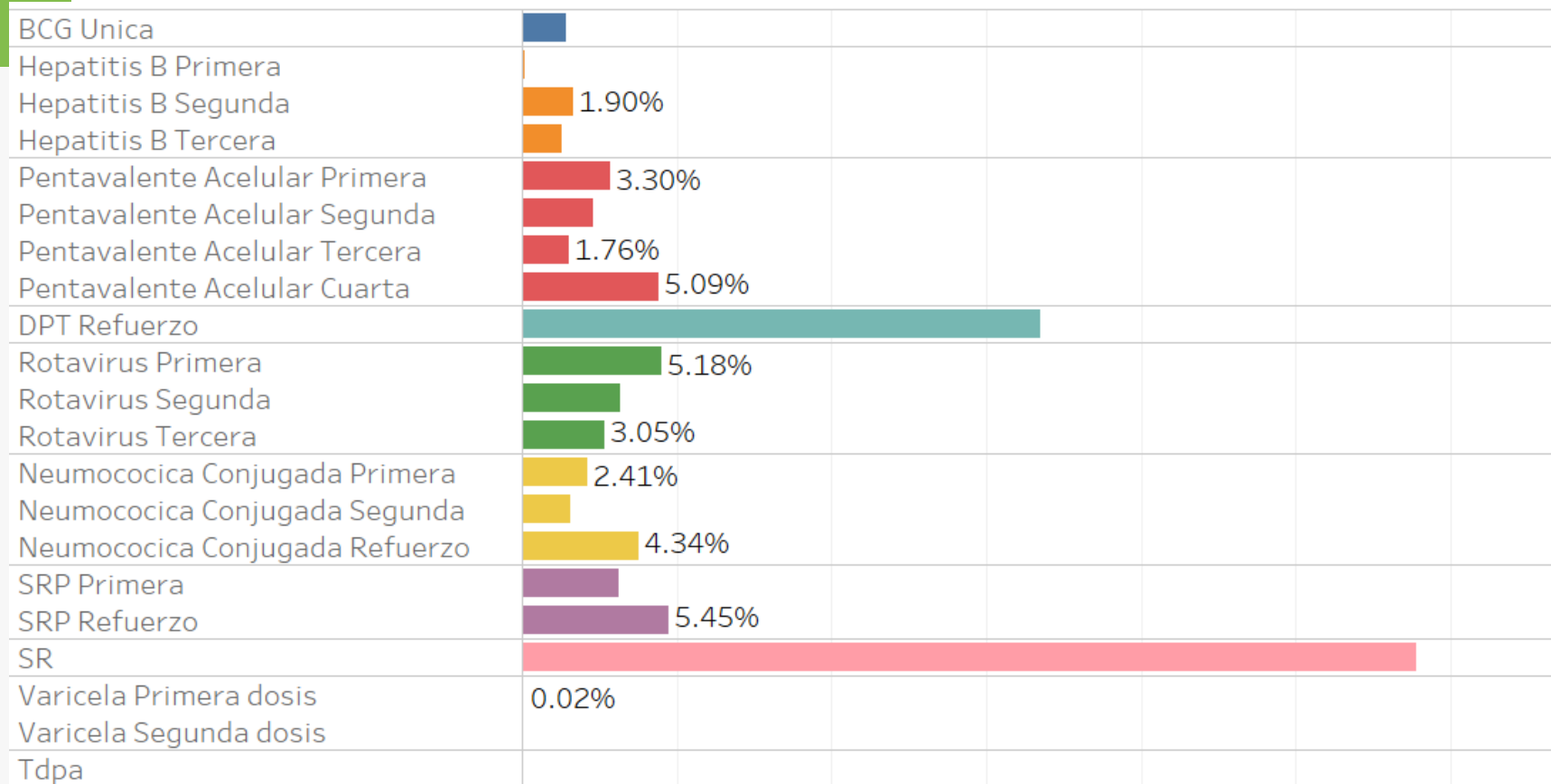
Reglas de Vacunación:
Momento ideal de aplicación de acuerdo con estándares nacionales e internacionales

Non-availability of vaccines – Reasons for non-administration

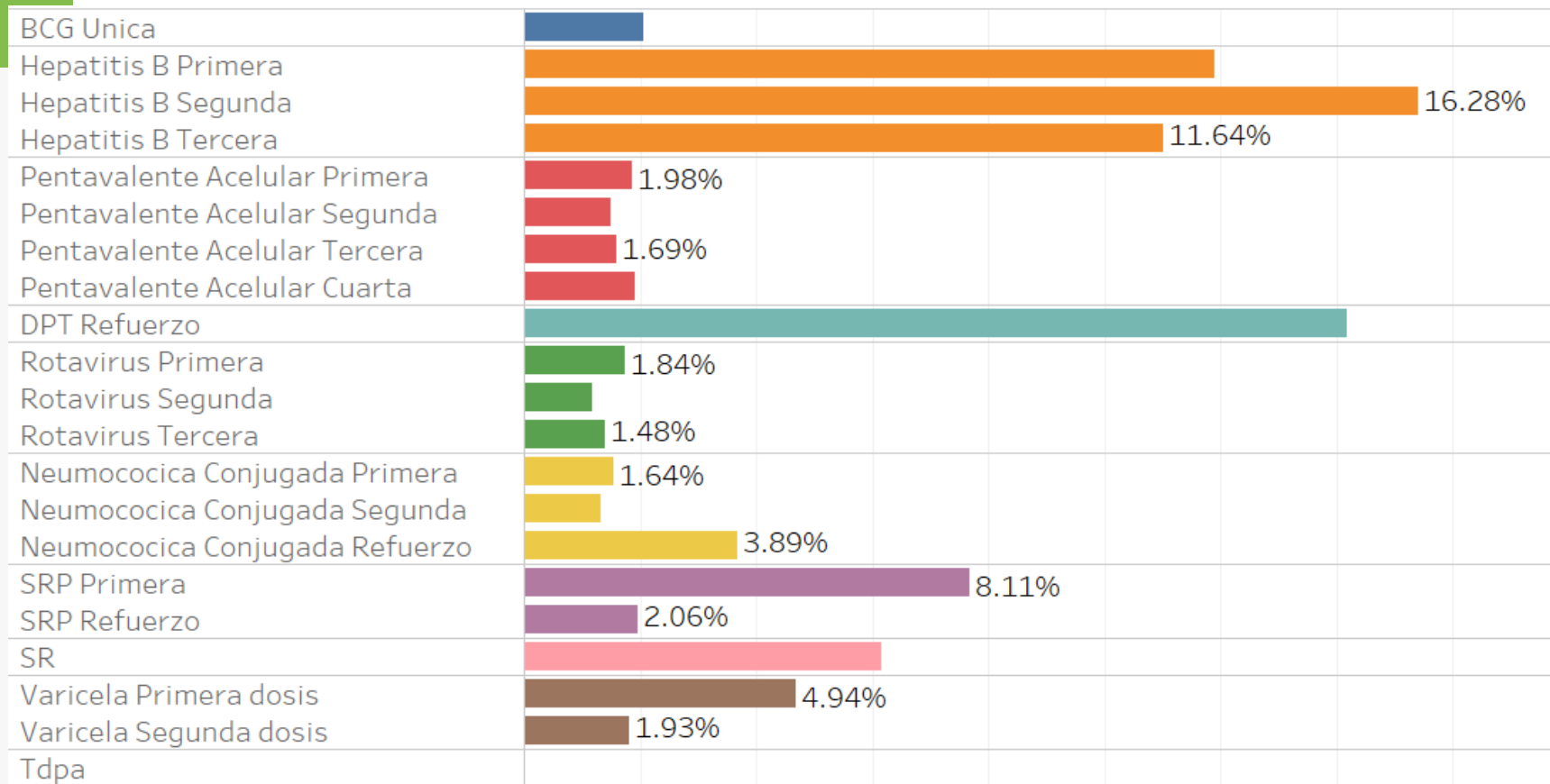
Motivo de la no aplicación de vacuna



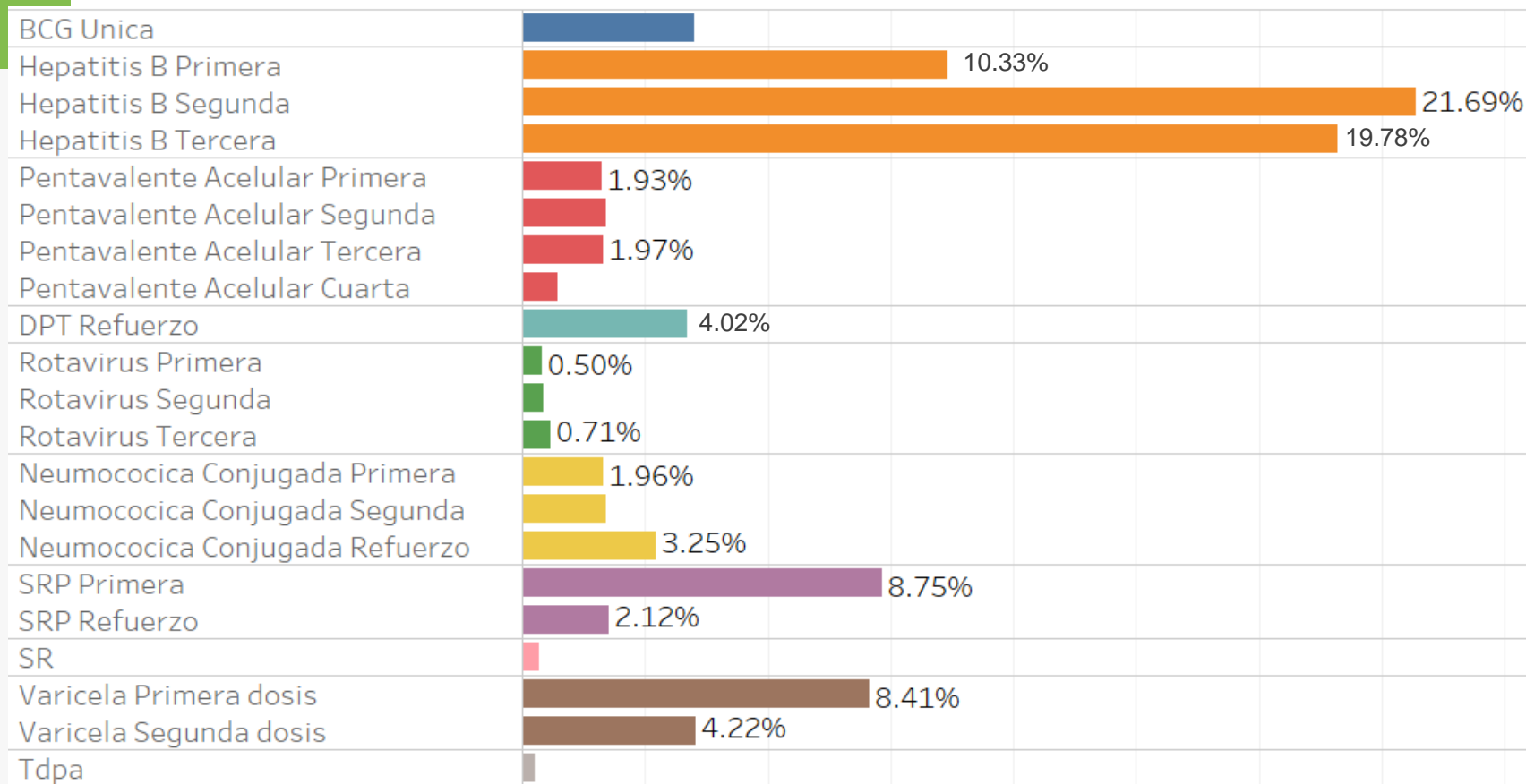
Unavailable vaccines – 2016



Unavailable vaccines – 2017



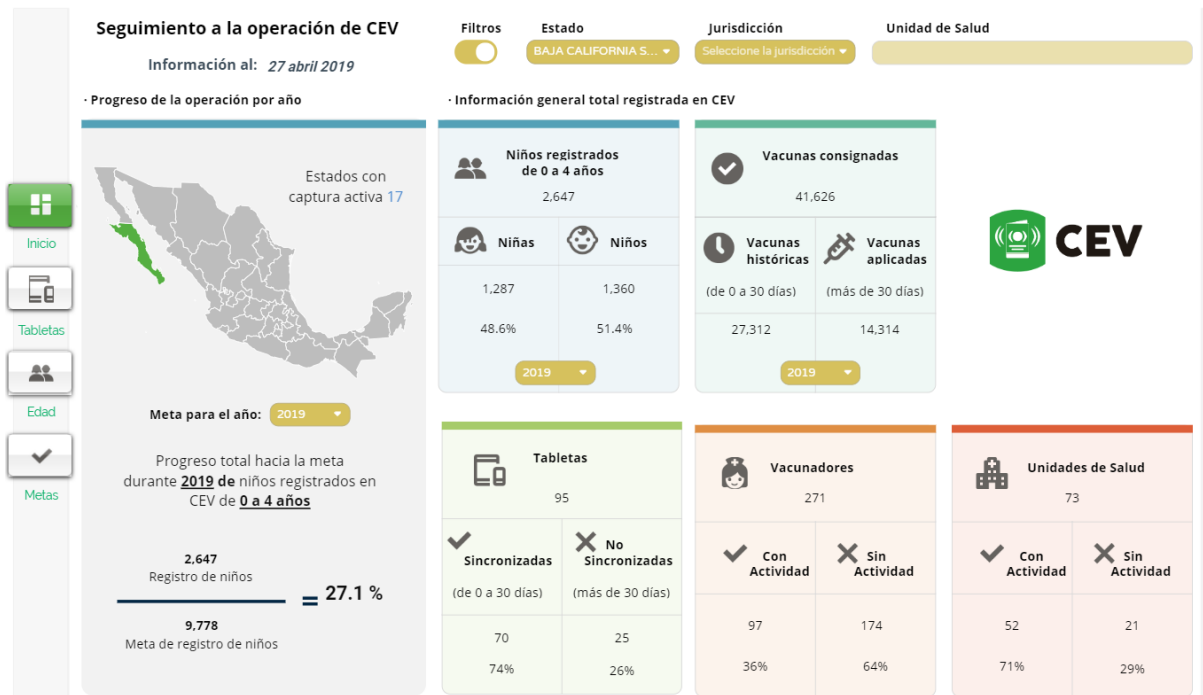
Unavailable vaccines – 2018



Management of immunization program resources at every level

- ▶ Automatic generation of performance reports

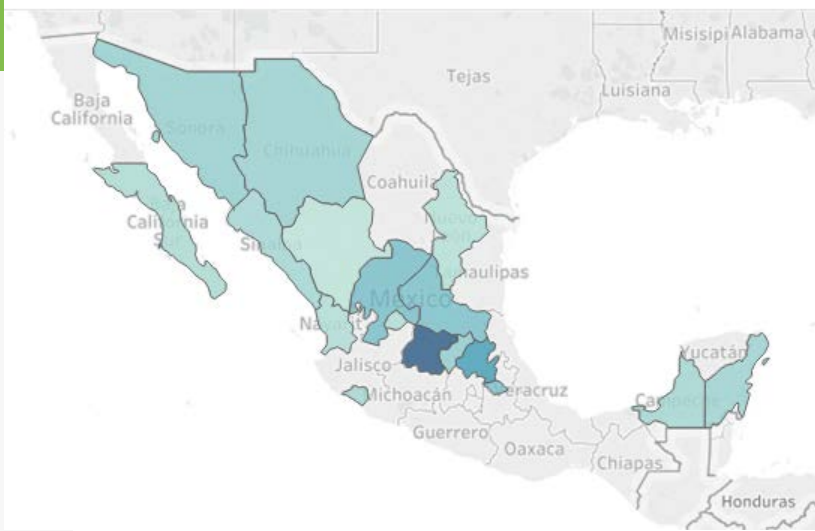
- ▶ Supervision and management in real time



OUR IMAGINATION IS THE
LIMIT!



People move...



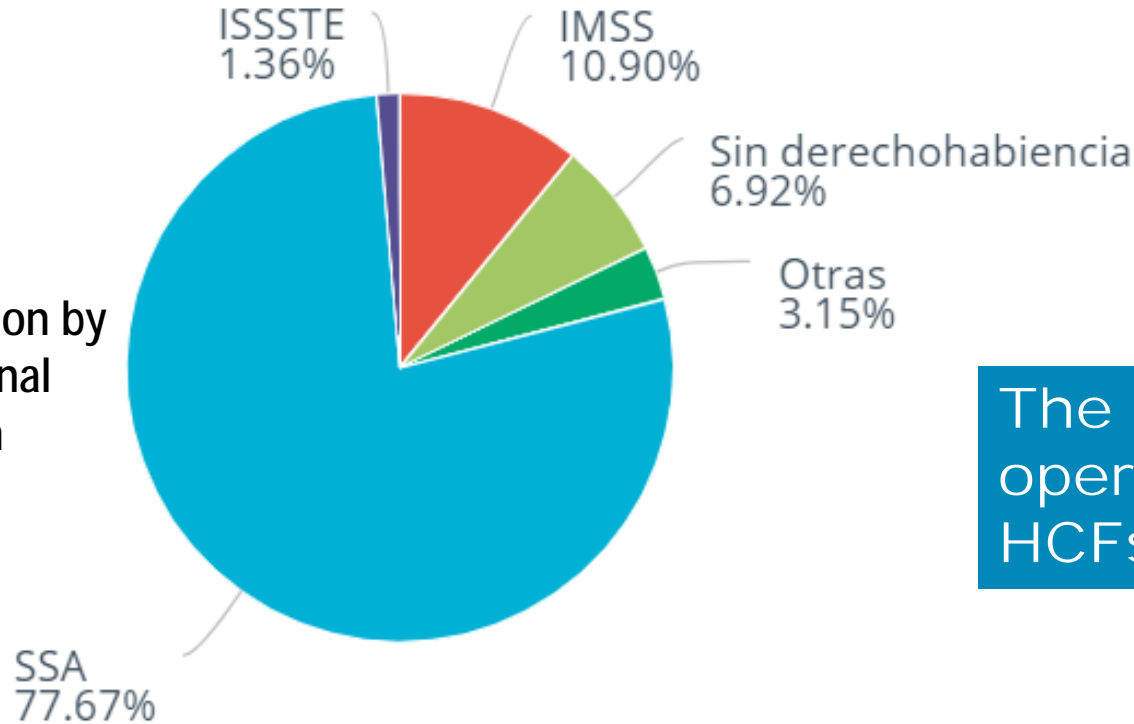
State of registration



State of residence

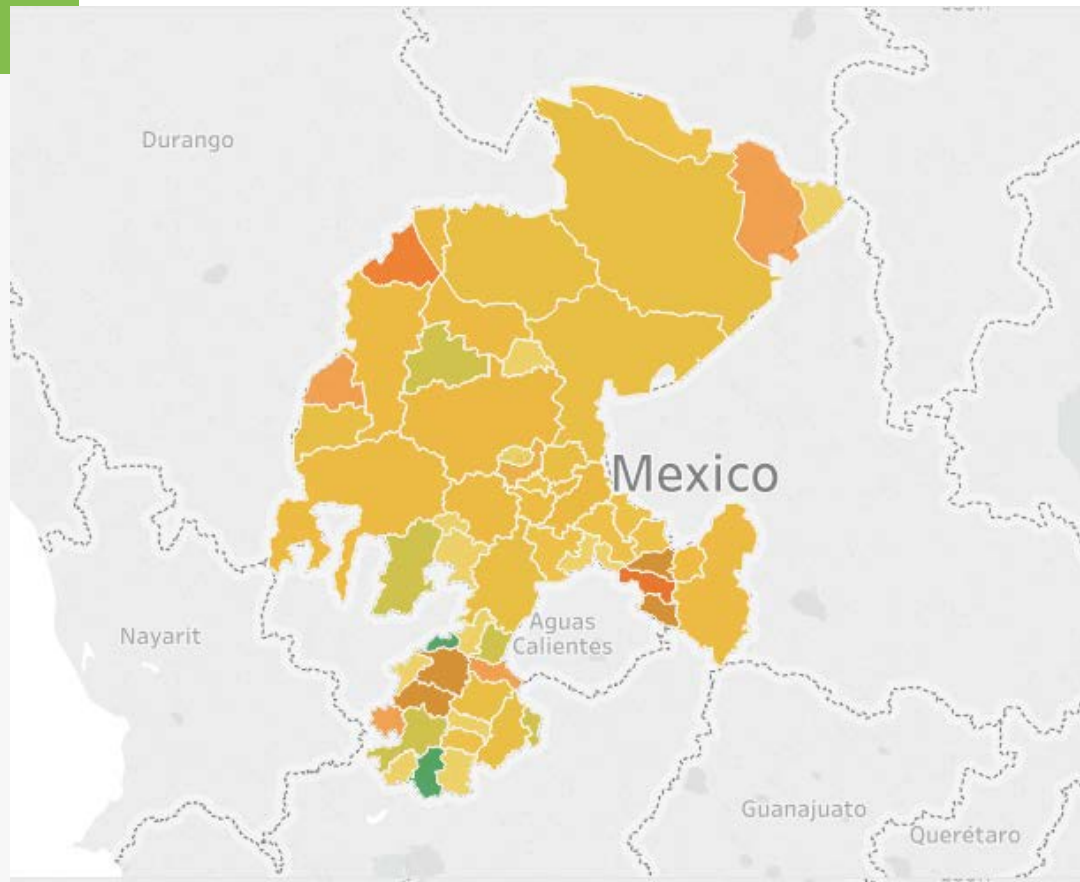
...and get vaccinated where it is convenient.

Distribution by
institutional
affiliation



The platform **ONLY**
operates in SSA
HCFs

Complete Vaccine Schedule by municipality of HCF in 1 YO. Zacatecas, Mexico. 2019



Percentage

0-20

21-40

41-60

61-80

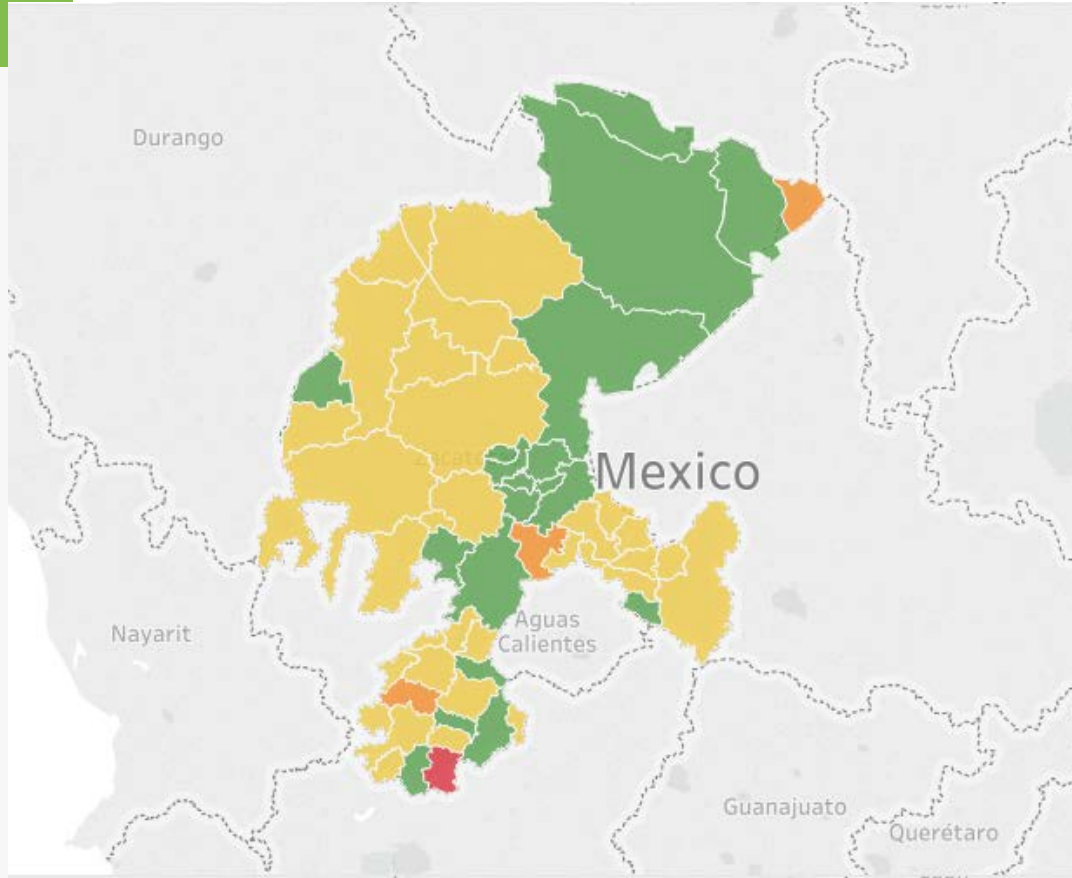
81-100

14 vaccines:

- BCG x1
- Hep B x3
- Penta x3
- Neumo x3
- Rota x3
- SRP x1

EVC, April 27, 2019

Non-availability of vaccines in HCF. Zacatecas, Mexico. 2019



Percentage

0-20

21-40

41-60

61-80

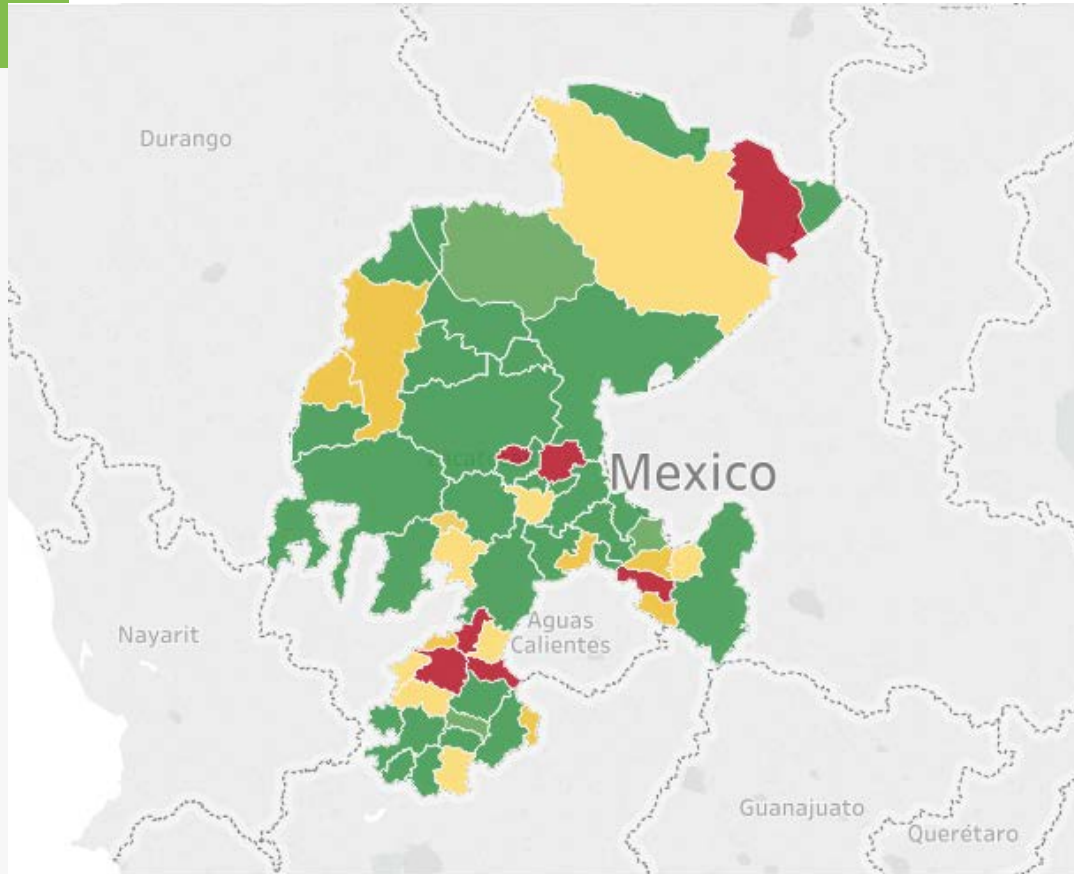
81-100

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EVC, April 27, 2019

Non-availability of vaccines in HCF. Zacatecas, Mexico. 2019



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14 vaccines:

- BCG x1
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EVC, April 27, 2019

**The goal: an effectively protected child
for an effectively protected community**



The EVC Team



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Thank you!