TechNet-21
The Technical Network for Strengthening Immunization Services

July 14th, 2022

Risk and mitigation strategies for managing Covid-19 vaccines in the supply chain and CCE strategies used

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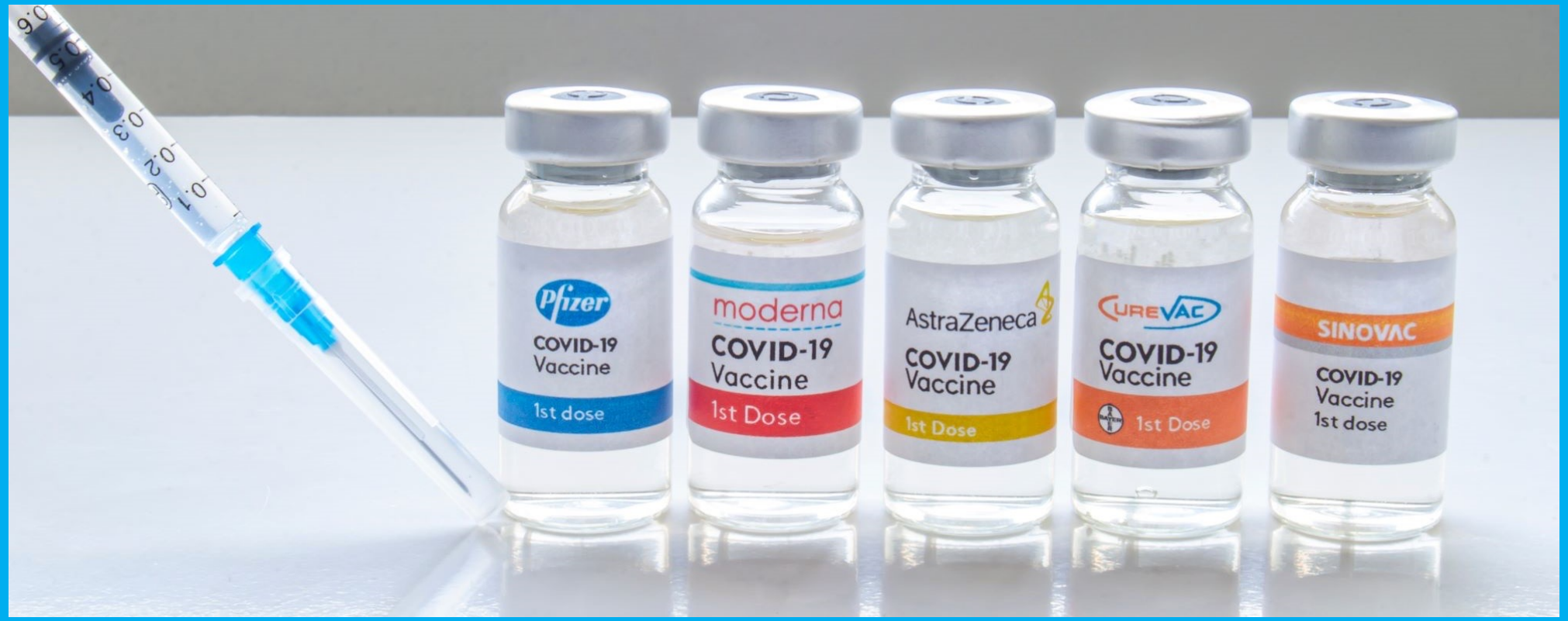
Managing COVID-19 vaccine shipments at the national level



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Managing COVID-19 vaccine shipments at the national level

Risk and short-term mitigation strategies for managing COVID-19 vaccine supplies with available cold chain capacities

Background

- Countries have seen an increase in availability of COVID-19 vaccines putting pressure on country systems
- Short shelf-life is an additional risk
- For an effective rollout of COVID-19 vaccine, cold chain systems need to be supported by:
  - Increased demand and uptake
  - Vaccination planning and rollout
  - Stock management planning
  - Effective distribution systems

Purpose

To raise awareness on the complexities and considerations of managing arriving COVID-19 vaccine shipments within the **context of available cold chain space, high volume of shipments and lower vaccine absorption rates**

Challenges

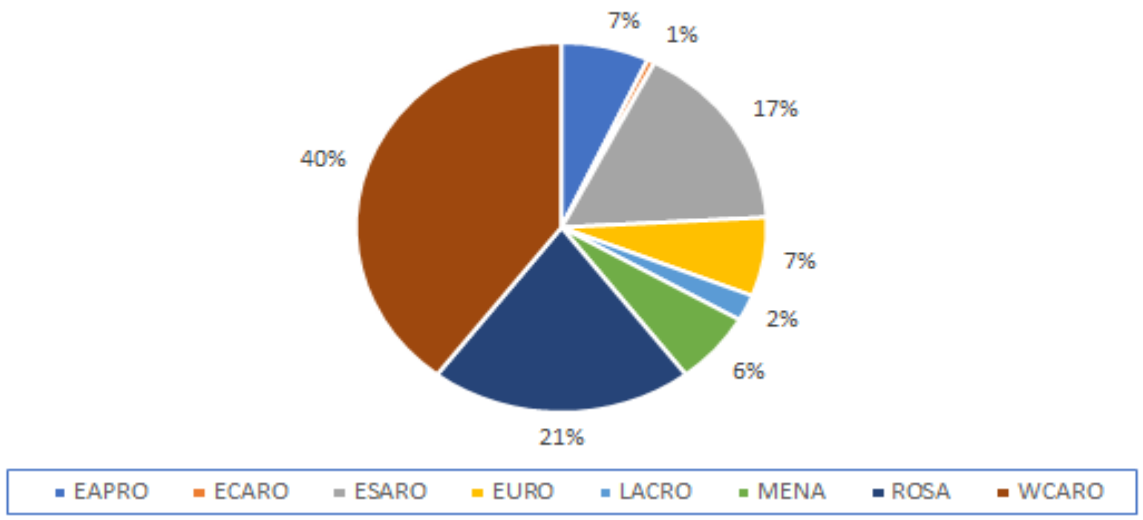
- Increasing supply of vaccine deliveries, bilateral agreements, distribution and low absorption issues resulting in cold chain capacity constraints
- Due to global pandemic longer lead times, CCE availability, delivery and commissioning is affected

Mitigation Strategy

- **Vaccine supply should be demand driven i.e. to be linked to absorption rate**
- **Detailed plan for managing shipment of COVID-19 vaccine using existing vaccine storage capacities**
- **Supply chain interventions**
    - Calculate and secure storage capacities for RI stocks
    - Ensure cold chain space is available at national level for up-coming shipment of COVID-19 (see guide on next slide)
    - Ensure timely availability of COVID-19 vaccine distribution plan from national level to service delivery level for incoming shipments
    - Preposition vaccine if needed at sub-national or last distribution point or increased frequency of vaccine distribution
- Alternate storage solutions
    - Rent private sector cold chain storage if feasible (UNICEF guidance available)
    - Refrigerated containers may be available as last resort and would require continuous temperature monitoring;

WICR site readiness is critical for timely deployment of WICRs

Distribution of WICR by Region



To ensure timely deployment of WICR, it is critical that all sites are assessed and cleared for WICR installation

SITE READINESS CHECKLIST FOR WALK IN COLD ROOMS and FREEZER ROOMS

Country:		Date:	
Region:		Name of staff	
District:		Organization/Unit	
Site Name:		Inspection No:	

CHECK 1: Adequacy of space to accommodate the cold room

Physical space: Kindly input information on cold rooms to be procured and measure available space in Length, width, and height for accommodating cold rooms (Measure), also indicate status of floor.

Type (WICR/WIFR)	*Size (m3)*	*Levelled floor*	*Space (metres)*	Comments
		☐ Yes ☐ No	L: W: H:	
		☐ Yes ☐ No	L: W: H:	
		☐ Yes ☐ No	L: W: H:	
		☐ Yes ☐ No	L: W: H:	
		☐ Yes ☐ No	L: W: H:	
Ventilation: What is the ventilation status - Clearance at sides and rear is a minimum of 0.6 m wide? *(Observe)*			☐ Good ☐ Poor	
Building, roof, ceiling: Is the roof and ceiling in good condition completely free from leaks? *(Observe)*			☐ Free from leaks ☐ Leaks existent	
Door/Entrance: Measure door entrance dimensions (Measure)			W: H:	

Key process and stakeholders involved in WICR site readiness assessment and confirmation

1	2	3	4	5
PD shares checklist & ODP	Site assessment conducted	PMT/MoH confirms	CO, PMT/MoH updates ODP	CO shares documents
PD shares checklist and WICR ODP with CO	CO engages PMT/MoH to conduct site assessment	PMT/MoH confirm site readiness and signs offs	ODP updated as final validation	CO shares checklist, pictures and ODP to PD

Types of challenges

- Delays in completing assessments on time.
- Absence of visual evidence to confirm site readiness
- Absence of PMT/MoH sign offs
- ODP not systematically updated after readiness assessments

Mitigation

- Engage NLWG/MoH early enough, obtain sign offs
- Consistently document and share visual evidence/pictures on site readiness.
- Update ODP after completion of site readiness assessment

Estimating cold chain space needed at national level for COVID-19 vaccine

Each dose of COVID-19 vaccine would need storage volume of:

+2 to +8ºC	-20ºC	-86ºC
4.63cm³ per dose	3.86cm³ per dose	2 to 3cm³ per dose

The estimates may vary by vaccine brand and manufacturer, refer to WHO sizing tool for planning the cold chain volumes needed if vaccine volume per dose is different than mentioned above

How much cold chain space is needed at National level for COVID-19 vaccine (+2 to +8ºC and -20ºC)?

1. ☞ Refer to table on the right to make vaccine storage arrangement for upcoming shipment of COVID-19 vaccine

   👍 No action needed if vaccine storage space is sufficient at national store or at *private leasing* for upcoming shipment

2. ✋ **Recommended actions for situation with limited cold chain space for upcoming shipment of COVID-19 vaccine.**
   - ✋ Ramp-up vaccination strategy
   - ✋ Explore distributing vaccine in stock at national level to lower levels
   - ✋ NLWG to review shipment plan considering absorption and expiry dates

Size of walk-in cold rooms or freezer rooms	Can accommodate vaccine for approximately (Target population)	Number of doses including 5% of wastage rates*
$5m^3$	161,082	322,165
$10m^3$	312,402	624,805
$-15m^3$	417,944	835,887
$20m^3$	528,681	1,057,362
$30m^3$	736,377	1,472,754
$40m^3$	981,836	1,963,672
$60m^3$	1,527,300	3,054,601
$80m^3$	1,963,672	3,927,344
$90m^3$	2,263,012	4,526,025
$120m^3$	2,945,508	5,891,016
$160m^3$	3,927,344	7,854,688

Source: WHO/V&B/02.34 Cold chain sizing tool of WHO version June 2020

* This is indicative estimate wastage rate, this is subjective to country's own wastage rates

How much space do I need at a national store for COVID-19 vaccine (+2 to +8ºC or -20ºC)?

👉 Refer to upcoming shipment of COVID-19 vaccine and number of doses expected to arrive, NLWG are encouraged to map cold chain needs by size of shipment, as an example below:

Number of doses arriving with upcoming shipment	Suitable cold chain equipment	Number of units needed to accommodate the vaccine
Up to 300,000 doses	Shipment can be managed with Ice Lined refrigerator (ILR) of 200 liters or higher capacity (or freezer for -20ºC vaccines)	one ILR for every 50,000 doses
Up to 1.5 million doses	Can be managed with cold room of 30 m^3 size	One cold room of 30 m^3 size
For two million doses and above	Cold room of 40 m^3	Need one cold room of 40m^3 for every two million doses of COVID-19 vaccine

How much cold chain space is needed at national level for COVID-19 vaccine? (for vaccines stored at -86°C)

1. ☞ Refer to table on the right to make vaccine storage arrangement for incoming shipment of COVID-19 vaccine

   👍 No action needed if vaccine storage space is sufficient at national store or alternate arrangements with other departments for upcoming shipment

2. ✋ **Recommended actions for situation with limited Ultra Cold Chain space for upcoming shipment of COVID-19 vaccine.**
   - ✋ Ramp-up vaccination strategy
   - ✋ Explore distributing existing stocks of UCC to lower levels
   - ✋ NLWG to review shipment plan considering absorption and expiry dates

Ultra cold chain freezers	Gross storage capacity (liters)	Can accommodate vaccine for approximately (Target population)	Number of doses* including 0% of wastage rates**
Haier, DW-86L828J	828	168.480	336,960
Haier, DW-86L578J	578	119.340	238,680
Haier, DW-86L100J	100	16.380	32,760
Stirling SU780XLE	780	179.595	359,190
Stirling ULT25NEU	25	4.095	8,190
B-Medical U701	747	168.480	336,960

* As per guidance from manufacturers

** This is indicative estimate wastage rate as per recommendation in Sizing tool, this is subjective to country's own wastage rates

Temperature Monitoring of COVID-19 Vaccines

- The majority* of COVID-19 vaccine is supplied **without** a Vaccine Vial Monitor (VVM) sticker, therefore:
  - It is the responsibility of the country to monitor the temperature of COVID-19 vaccine from point of arrival in the country and up to point of utilization of vaccine (vaccination centers)
  - The staff responsible for handling the COVID-19 vaccine for packing, distribution and storage must be sensitized on temperature sensitivities of each type of COVID-19 vaccine introduced in the country
  - National logistics working groups, national cold chain managers must establish procedures for reporting temperature excursions of COVID-19 vaccine and decision-making process on either using the vaccine after the excursion or discarding the vaccine, depending on level of excursion and advise from national COVID-19 committee or similar technical decision-making authority in the country

* COVID-19 vaccine from Sinopharm comes with VVM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TEK KULLANIMLIK U-100 INSULIN
Q&A session

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Experiences in the Americas on how countries are managing the multiple COVID-19 vaccines in the cold chain?

Experiences in the Americas on how countries are managing the multiple COVID-19 vaccines in the cold chain?

Nora Lucia Rodriguez
Regional Advisor – Cold Chain Operations

14 July 2022

Immunization Unit
Pan-American Health Organization

Advances in COVID-19 vaccination in the Americas

1.91b

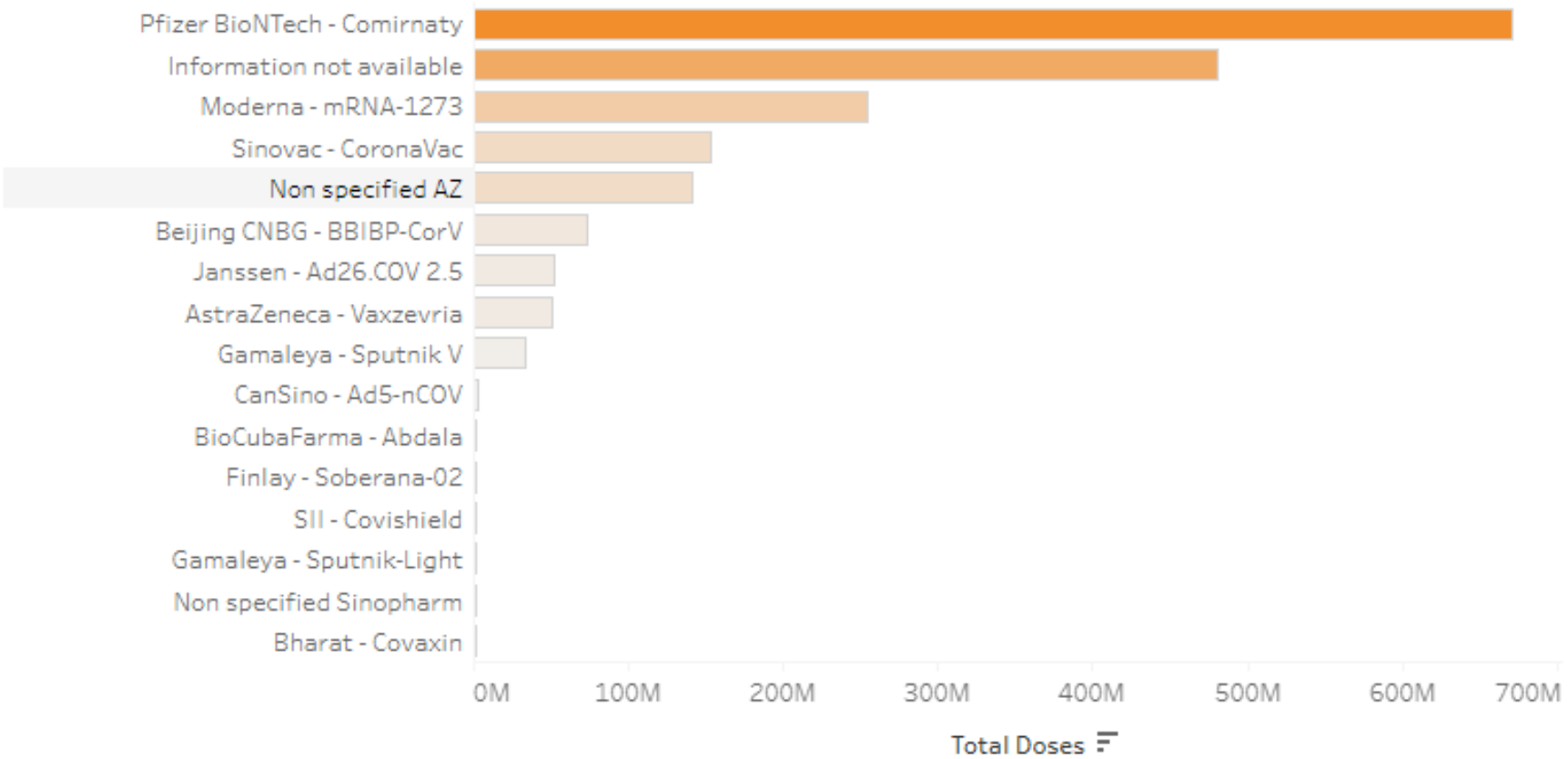
Number of COVID-19 vaccine doses administered in the Americas

68.7%

Proportion of fully vaccinated persons in countries of Latin America and the Caribbean

Data transmitted from countries to PAHO and available on the respective official websites. Regional COVID-19 vaccination dashboard: https://ais.paho.org/imm/IM_DosisAdmin-Vacunacion.asp

Doses of Covid-19 vaccines administered by Manufacturer



WHO SAGE Interim Recommendation	*Pfizer – BioNTech BNT162b2*	*Moderna – mRNA-1273*	*Astra Zeneca – Oxford University AZD1222*	*Janssen – Ad26.COV2.S*	*Sinopharm – BBIBP-CorV*	*Sinovac – CoronaVac*	*Bharat – Covaxin*	*Novavax – CoV2373*	*CanSinoBIO – Ad5-nCoV-S*
Vaccine platform	Messenger RNA	Messenger RNA	Viral Vector (Adenovirus)	Viral Vector (Adenovirus)	Inactivated whole virus vaccine	Inactivated whole virus vaccine	Inactivated whole virus vaccine	SARS-CoV-2 spike protein nanoparticle	Viral Vector (Adenovirus)
Storage requirements	Ultra Cold Chain: -85°C to -60°C. Stable up to 6 months. Freezer: -20°C (2 weeks) Thawed: 2°C to 8°C (31 days)	Freezer: -25°C to -15°C: Thawed: 2°C to 8°C (30 days)	Refrigeration: 2°C to 8°C. Stable up to 6 months, or date of expiration.	Freezer: -25°C to -15°C: (24 months) Thawed: 2°C to 8°C (4.5 months)	Refrigeration: 2°C to 8°C	Refrigeration: 2°C to 8°C	Refrigeration: 2°C to 8°C	Refrigeration: 2°C to 8°C	Refrigeration: 2°C to 8°C

PAHO-IM technical assistance for the deployment of Covid-19 vaccines to Member States

Technical assistance for strengthening cold chain operations

1. Technical support to 31 Member States

- Update cold chain equipment inventories.
- Estimate additional storage and transport capacities for Covid-19 vaccines.
- Analysis of the requirements and technical specifications for refrigeration equipment, ultra-low temperature freezers(ULT), temperature monitoring devices for advising Member States.
- Funds from Canada, USG and WHO were transferred to **31 countries** for cold chain operations and purchase of cold chain equipment (CCE). **Aprox. $16,679,883.00**

2. Training workshops for health workers (Regional: 5. Sub-regional: 6. National: 30)

- Estimation of additional storage and transport capacities. Cold chain, supply chain, logistics operations and vaccine handling.
- Management of ultra low temperature (ULT) equipment and vaccines and ULT temperature monitoring devices (Technical Specs, installation, maintenance) and other emergency approved Covid -19 vaccines.
- Management of medical waste at all levels.

3. Technical assistance to 6 countries supported by COVAX/GAVI for the acquisition of refrigeration equipment

- Training in the use and on how to fill out the CCEIGA and SC-Sizing tools and the application to summit to COVAX/GAVI. **The achievements** were that all **proposals were accepted,** and the equipment were delivered to countries. (HON-NIC-GUY-ELS-BOL-HAI).

Activities implemented at country level for managing Covid-19 vaccines in the cold chain

The following activities were implemented:

1. ULT vaccines required:
    a. Calculated the number of doses to be stored and distributed at ULT.
    b. Evaluated the technical specifications of the infrastructure which complied for the installation of ULT Freezers.
    c. Developed guidelines on the management, installation of ULT Freezers and use of PPE.
    d. Stablished strategic distribution and vaccination sites where vaccines can be stored at ULT.
    e. Evaluated the capacity for production of dry ice.
    f. Syringe: Administration of a dose (0.3CC) of Pfizer vaccine, and pediatric dose (0.25CC)
2. Developed guidelines on the management and handling of ULT vaccine and other Covid-19 vaccines.
3. Conducted training workshops.
4. Implementation of COVID-19 National Deployment and Vaccination Plans (NDVP). This support provided operational guidance for the deployment, management and administration of COVID-19 vaccinations at national and local levels.

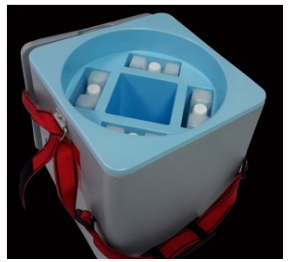
Quantities of cold chain equipment purchased for 31countries, as of July 11th, 2022 with funds from Canada and USG

- Supported 31 countries and territories with the expansion of cold chain capacities for storing and distribution of Covid-19 vaccines and strengthening operations.
- PAHO has purchased:

REFRIGERATORS AND FREEZERS	COLD ROOMS	COLD CHAIN SUPPLIES (TMD, Cold Boxes, Vaccine Carriers)	SAFETY BOXES 5L
438	7	12,972	279,700

Status as of 11th July, 2022

61% of the Canada funds and 71.31% of the USG funds have been implemented



PAHO

In partnership with Canada

Countries experiences for the deployment of Covid-19 vaccines

Challenges in the use of Covid-19 vaccines in the cold chain (1)

1. Introducing Pfizer vaccine with a profile which required very different handling and storage, when compared to routine EPI vaccines.
2. Reception and use of various Covid-19 vaccines with different presentations (vial size), characteristics and temperature storage.
3. Different Covid-19 vaccines have different shelf life requiring very good inventory management.
4. Reducing Wastage Rate:
   - Different vial sizes
   - Immunization session size
   - Different time for discarding an opened vaccine vial
   - Hesitancy- lack of demand
5. Management information systems for maintaining products visibility at all levels (Number of doses, expiration date, date of discarding on unused doses, traceability).

Challenges in the use of Covid-19 vaccines in the cold chain (2)

6. Integrating Covid-19 vaccines with the use of routine immunization vaccines
7. The use of multiple Covid-19 vaccines in every country poses programmatic challenges. These new vaccines, not all of which have WHO-EUL approval, require countries to enhance surveillance efforts for all COVID-19 vaccines to monitor safety and impact.
8. Delays on the production of cold chain equipment.
9. Delays in the shipments of the CCE, because of the lack of shipping vessels and containers.

Experiences at country level

Major highlights

1. Expansion of the storage capacity at central, regional and municipal warehouses.
2. Acquisition of ultra-low temperature Freezers, given that counties did not have this type of equipment
3. Training of Health workers in the management of equipment to store ultra-low temperature vaccines including the management and handling of vaccines at ULT.
4. Assure that all vaccines arrive on time, number of doses ordered and at the right temperatures
5. Acquisition of sufficient personal protective equipment for handling ultra-low temperature vaccines
6. The timely approach to address misinformation, myths, rumors for obtaining high vaccination coverage in the eligible population.
7. Assure a sustained communication strategy which is updated and funded.

Lesson learnt (1)

1. Keep inventories of cold chain equipment up to date to identify the gaps for the additional storage and distribution capacities required.
2. Have advance information on the characteristics, presentation and storage temperatures of the vaccines for allowing better management of CC and SC operations, as well as the preparation of national guidelines.
3. Plan ahead to assure sufficient HCW are available and trained.
4. Pandemic planning requires:
   - An assessment of infrastructure, logistics and equipment for storage and distribution of vaccines at all levels.
   - Good management for developing forecast to have timely supplies (syringes, diluents) to support vaccination activities.
5. Introduce for routine use new technologies for monitoring new vaccines and ULT vaccines.

Lesson learnt (2)

6. Keep up to date Management Inventory Information System for managing inventories of vaccines and supplies, as well as to permit traceability of vaccines and supplies. (expiration date, temperature excursions, wastage rate, number of doses received and distributed by health facilities).
7. Emergency plans should:
   - Be updated and exercises carried out.
   - Have an estimated budget in order to assigned sufficient funds in a timely manner to carry out all activities.
8. Maintain permanent training of HCW in the handling of new vaccines to properly store and distribute Covid-19 vaccines.
   - Emphasizing wastage rate reduction and monitoring shelf life of opened vial vaccine
9. Maintain a data base of new CCE for improving cold chain infrastructure.
10. The Covid-19 Pandemic provided opportunities to acquire new CCE technologies. (Refrigerators, freezers, Remote Temperature Monitoring Devices, ULT Freezers, freeze-free thermal containers) at all levels.

Thank You

PAHO Pan American Health Organization World Health Organization Regional Office for the Americas PAHO 120th Anniversary

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The Technical Network for Strengthening Immunization Services

COVAX: an opportunity to strengthen national cold chain systems in LAC

COVAX: an opportunity to strengthen national cold chain systems in LAC

TechNet meeting

14 July 2022

Today's agenda

1. Introduction to the Latin America and Caribbean Region (LAC)
2. Cold chain equipment (CCE) procurement at LAC
3. COVAX CCE initiative
4. Japan MoFA grant
5. Vaccine stock management initiative

1. Vaccine coverage in LAC

As of May 2022, appr. **12 billion doses** have been administered worldwide, **BUT inequities persist**.

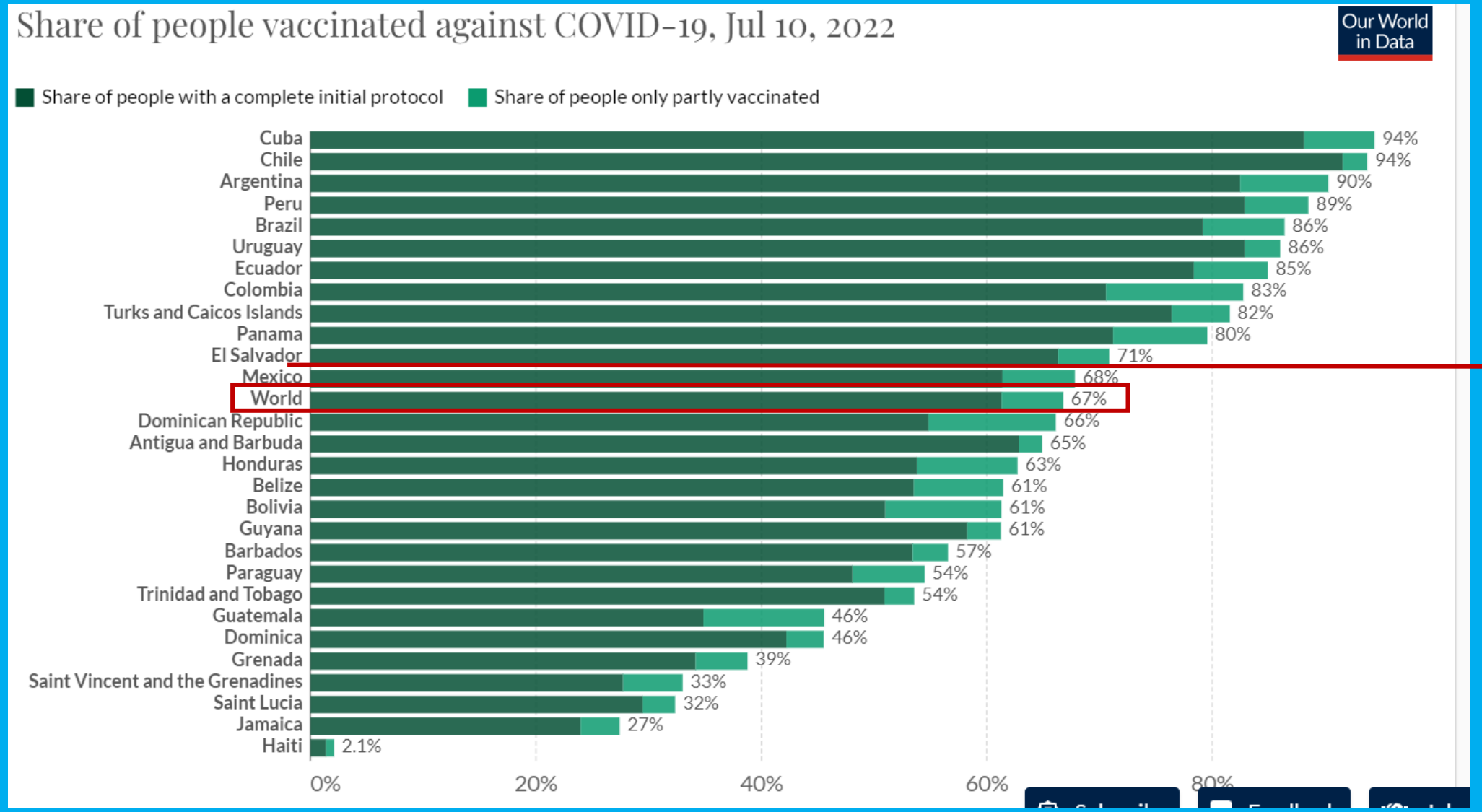
77% of the population in LAC vaccinated with at least one dose.

68% of the population in LAC has received at least the primary series.

40% of the population in LAC has received one booster.

Sources: WHO & PAHO vaccine coverage dashboard

Vaccine coverage per country in LAC – July 2022



70%

Source: Our World In Data

2. CCE procurement at UNICEF

- UNICEF procures CCE for transport and safe storage of vaccines in the form of:
  - ➢ Mains Powered (on-grid) Refrigerators & Freezers
  - ➢ Solar Direct Drive Refrigerators & Freezers
  - ➢ Walk-in Cold Rooms & Freezer Rooms
  - ➢ Vaccine Carriers & Cold Boxes
  - ➢ Temperature Monitoring Devices
  - ➢ Voltage Regulators & Stabilizers

- CCE procurement:
  - ✓ 2019: $85m (LAC est. ≃ $2.5m)
  - ✓ 2020: $103.8m (est.) (LAC est. ≃ $5m)
  - ✓ 2021: $204.9m (LAC est . ≃ $26m) in 16 countries

Refrigerators & freezers

≃24m - 2021

Cold boxes

>$1m - 2021

Vaccine carriers

$155k - 2021

Temp. monitors & loggers

$508k - 2021

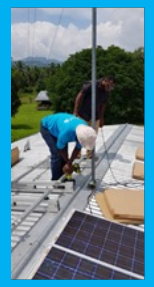
UNICEF Supply & Logistics role for Covid in LAC

In LAC, the mandate for vaccine procurement is within PAHO, with UNICEF holding a supporting role that varies between countries, from communications to active cold chain interventions

2020: the Covid response focused on supplying protection (PPE), diagnostics and therapeutics

2021: together with its supporting role, UNICEF was increasingly called out by governments to provide ancillary products (syringes, safety boxes, vaccine carriers, cold rooms, etc.)

Covid response was an entry point for UNICEF in LAC to help governments to strengthen their health systems and influence the efficiency of national supply cold chains, incl. oxygen provision



3. COVAX Cold Chain Equipment (CCE) in LAC

- In LAC, UNICEF has been supporting the procurement of cold chain equipment in 6 AMC countries (Bolivia, El Salvador, Guyana, Haiti, Honduras and Nicaragua).
- A total of 1,2 M USD have been allocated to countries through GAVI funding.
- Areas of support: procurement of cold rooms, remote temperature monitoring devices (RTMDS), refrigerators and freezers and cold chain packaging systems.

COVAX CCE in Honduras

- Strengthened infrastructure of 18 national warehouses: procurement of 18 refrigerators and 8 freezers.
- Strengthened PHC infrastructure: procurement of 1425 vaccine carriers and 5760 freeze packs.
- Procured 1289 temperature monitoring devices, 2 million vaccine cards, 80,000 COVID-19 vaccine certificates and 6800 alcohol gels.

COVAX CCE in Honduras

Refrigerated trucks on the road from Tegucigalpa to San Pedro Sula, in Honduras, to transport the 1.5 million doses of COVID-19 vaccines donated via COVAX's dose-sharing mechanism.

Ana, 11 years old, and her mother after being vaccinated with the first dose of the COVID-19 vaccine at the educational center where she studies. UNICEF supports the Secretary of Health through the COVAX mechanism and the donation of Cold Chain supplies.

4. Japan MoFA grant: providing support beyond AMC

- Japan´s support to UNICEF in Latin America and the Caribbean has increased significantly since 2020.
- In 2021, Japan was the third largest donor in terms of direct contributions to the region following the United States and the European Union.
- Japan has been one of UNICEF´s largest donors in the Health sector, focusing on supporting the COVID-19 vaccine roll out through cold chain strengthening, but also to support to regular immunization and health system strengthening in Venezuela, Haiti and Cuba.
- However, Japan has also been a strong partner to UNICEF to support emergency response efforts with a strong focus on WASH in the aftermath of hurricanes Eta and Iota (2020) as well as the Haiti earthquake (2021).

Japan's support to Cold Chain Strengthening

<u>1st Contribution (May 2021)</u>:
US$11.11M covering Guatemala, Haiti, Jamaica, Nicaragua, Paraguay and Venezuela.

<u>2nd Contribution (February 2022)</u>:
US$10M covering Belize, Bolivia, Colombia, Dominican Republic, Ecuador, El Salvador and Honduras.

Total support from Government of Japan to UNICEF for Cold Chain Strengthening:
US$21.11M covering 13 countries in Latin America and the Caribbean.

Key Activities supported

- Procurement and installation of walk-in-coolers, freezers, ice-lined refrigerators, solar and ultra-cold equipment.
- Passive containers such as cold boxes, vaccine carriers or ice packs for transporting vaccines to service delivery points at primary health centres/posts.
- Temperature monitoring devices and other supplies for vaccine stock management.
- Kits and spare equipment for CCE maintenance and voltage stabilisers.
- Generators to ensure electricity for vaccine storage, especially in rural areas.
- Refrigerated vehicles to enhance capacity for vaccine distribution.
- Other small-scale supplies related to cold chain management.
- Expansion of existing vaccine storage facilities to increase vaccination capacity.

5. Vaccine stock management initiative

Regional level

- An information management was hired to conduct specific country evaluations and assessments of their vaccine stock management systems.
- Based on this mapping exercise, recommendations are being elaborated on how to best improve and harmonize digital systems for stock management and registry.

Country level

- 3 vaccine stock management experts have been deployed to priority countries (Haiti, Guyana) to improve stock management activities and systems. Additional support is being recruited in El Salvador.

Thank you!

Gracias!

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Strategies to optimize the distribution and use of COVID-19 vaccine

Gobierno de Reconciliación y Unidad Nacional
El Pueblo, Presidente!

MINSA

República de Nicaragua

Dirección General Vigilancia para la Salud

Programa de Inmunizaciones

Estrategias para optimizar la distribución y el uso de vacunas

14 de julio 2022

Introducción

El Despliegue de Vacunación contra la COVID-19, ha sido un reto para el Programa de Inmunizaciones, **por las nuevas tecnologías para la producción de vacunas con diferentes presentaciones almacenamiento, distribución, disponibilidad simultánea de diferentes tipos de vacuna**, grupos poblacionales diferentes a los tradicionales y la implementación de medidas de bioseguridad estrictas en el marco de la pandemia.

Aunado a esto se debió atender la demanda de la población, con abastecimiento limitado, pandemia en el país en fase aguda, capacitación y entrenamiento del personal de todos los niveles, desarrollo de un sistema nominal, campaña de comunicación para generar demanda responsable y promover el cuido, distribución de la vacuna a todos los niveles, proceso de aplicación a la población objetivo y vigilancia de la seguridad de la vacunas.

Plan de Despliegue de la vacunación contra COVID-19

Objetivo General

- Contribuir al control de la pandemia de la COVID-19 a nivel nacional, a través de la vacunación basado en el marco de valores del Grupo de Expertos en Asesoramiento Estratégico en inmunización (SAGE)y el análisis epidemiológico nacional

Objetivos Específicos

Objetivos de la primera fase

- Reducir la mortalidad específica por COVID-19.
- Reducir la incidencia de casos graves de COVID-19.
- Proteger el talento humano en salud.

Objetivos de la segunda fase:

- Reducción del contagio.

Priorización de la población a proteger

Primer abastecimiento vacunas contra COVID-19 marzo 2021

III y IV Etapa

- **Población de 18 a 49 años**
- **Embarazadas y lactantes**
- **Población de 2 a 17 años**

II Etapa

- **Adultos de 50 a 59 años.**
- **Personal en trabajos esenciales bomberos, migración, aduana, ejército, policía y otros**

I Etapa

- **Personas con enfermedades crónicas de base : Enfermedad Renal Crónica, cardiópatas, oncológicos**
- **Adultos mayores de 60 años**
- **Personal de Salud de primera línea**

ESTRATEGIAS DE VACUNACION IMPLEMENTADAS

- Basados en el bajo volumen de dosis abastecidas, se implementó un Equipo Nacional de Vacunación, el cual bajo un cronograma se movilizada a los 19 SILAIS del país y a los 153 municipios, integrado por un Coordinador General y 10 brigadas (con 10 miembros cada una que tiene la responsabilidad de digitación, vacunación y vigilancia de posibles eventos adversos), esto duro un periodo de 6 meses.

- Con un mayor abastecimiento de dosis, tipo de vacuna, esquema de aplicación y fechas de vencimiento de la vacuna entregada, desde octubre 2021 se implementó una vacunación intensiva , incluía horario nocturno y fines de semana, con actividades:

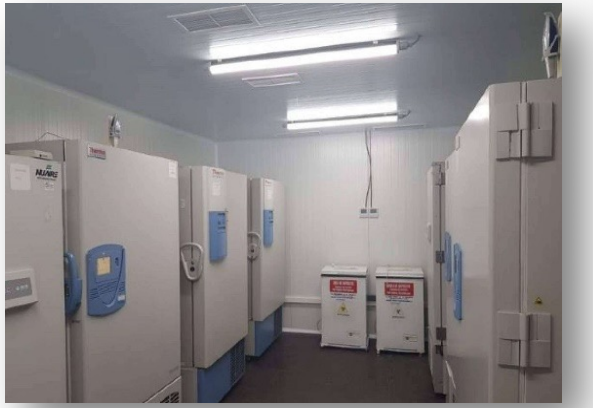
- Vacunación intramuro: en servicios de salud atención 1ria y 2ria.
- Vacunación extramuros: casa a casa, brigadas, vacunación escolar, puestos fijos y móviles en sitos de mayor afluencia de personas, vacunación en empresas y ferias de salud.

Fortalecimiento de la Cadena de frío para una distribución con calidad

Ante la necesidad de ampliar y mejorar los procesos de la cadena de frío y suministros , el país realizó las siguientes actividades:

- Uso y actualización de herramienta de brecha y análisis de equipos de la cadena de frío.
- Aumento de la capacidad frigorífica en nivel nacional, SILAIS , municipios y puestos de salud, con la adquisición de equipos de diversas fuentes de financiamiento, que aún continua.
- Contar con equipos de ultrabaja temperatura.
- Adquisición de vehículos refrigerados.
- Construcción de banco en SILAIS Managua, dotado de dos cámaras frías y planta de emergencia.
- Ampliación de los sistemas remotos de temperatura a nivel de municipios.
- Uso en todos los niveles de termómetros electrónicos de registro continuo de 30 días.
- Establecimiento de rutas de distribución, que garantizaran el adecuado almacenamiento, distribución y aplicación de la vacuna en todo el territorio nacional.

Cadena de frío y distribución



RUTA # 1

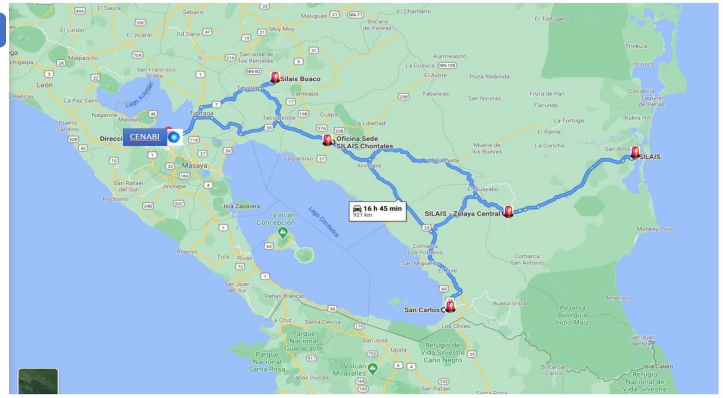
MINSA CENTRAL, SILAIS BOACO, SILAIS CHONTALES, SILAIS ZELAYA CENTRAL, SILAIS RIO SAN JUAN, MINSA CENTRAL

Km: 3,100 Km
Hora: 16 : 45.00
Tiempo de descarga: 40:00 minutos, cada SILAIS

Camión de 9.5 Toneladas

Km. X galón 35

Recursos humanos: 2



RUTA # 2

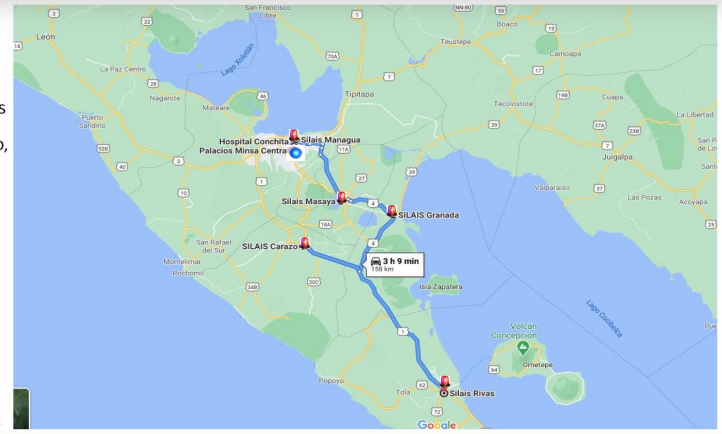
MINSA CENTRAL, SILAIS MANAGUA, SILAIS MASAYA, SILAIS GRANADA, SILAIS RIVAS, SILAIS CARAZO, MINSA CENTRAL

Km: 158 Km
Hora: 3: 09.00
Tiempo de descarga: 40:00 minutos, cada SILAIS

Camión de 9.5 Toneladas

Km. X galón 35

Recursos humanos: 2



RUTA # 3

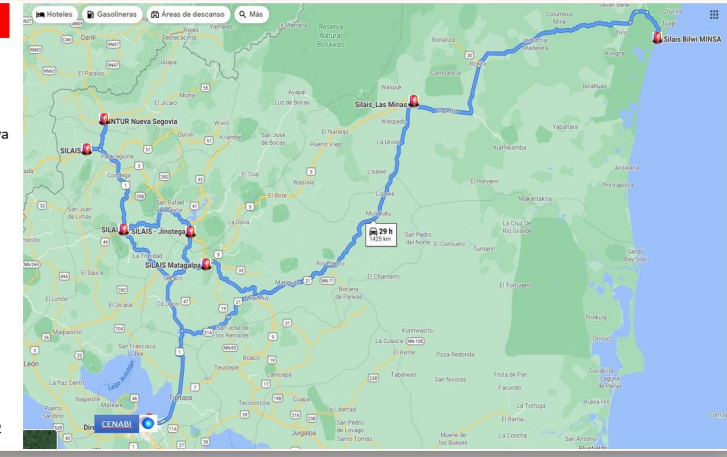
MINSA CENTRAL, SILAIS Matagalpa, Jinotega, Estelí, Nueva Segovia, Madriz, Minas, Bilwi MINSA CENTRAL

Km: 1425 Km
Hora: 29 : 00: 00
Tiempo de descarga: 40:00 minutos, cada SILAIS

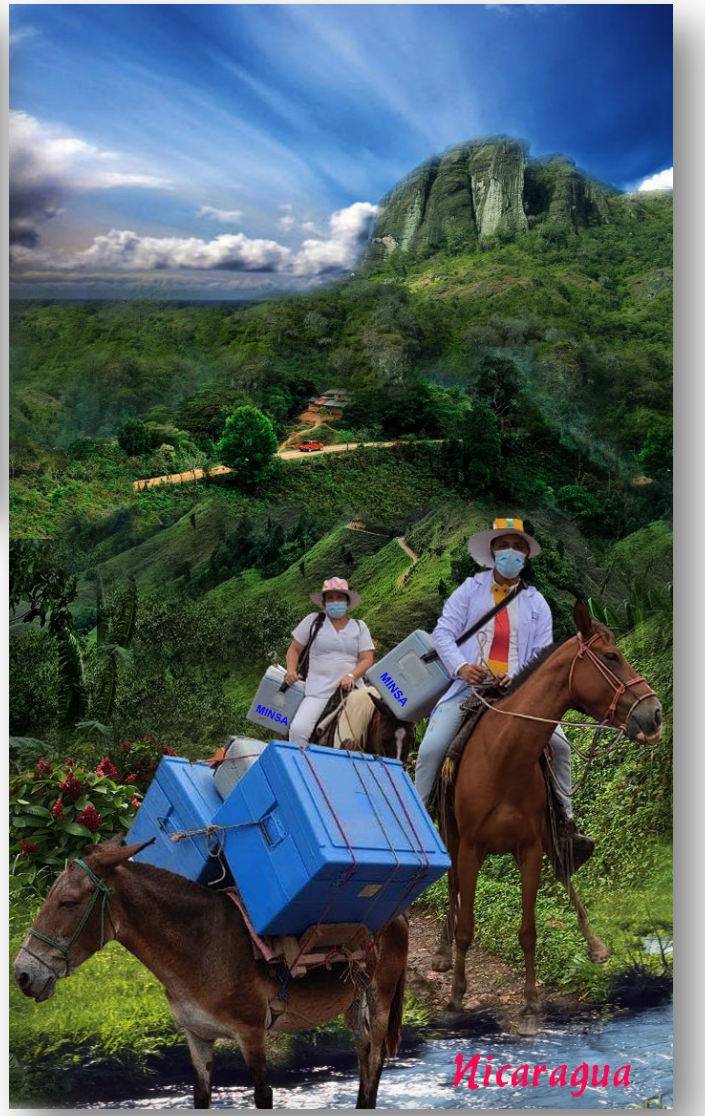
Camión de 9.5 Toneladas

Km. X galón 35

Recursos humanos: 2



Vacunacion contra el Covid - 19



Individualmente, somos una gota.
Juntos, somos un océano.

TechNet-21
The Technical Network for Strengthening Immunization Services

Questions & Answers