



17th TechNet Conference

Panama City, Panama | October 16-19, 2023

Immunization Programmes That Leave No One Behind

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Strengthening the cold chain and lessons learned during the Covid-19 pandemic

Octubre 19, 2023



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CHALLENGES IN DELIVERING THE COVID-19 VACCINE TO THE COUNTRY'S 5,570 CITIES

Thayssa Neiva da Fonseca Victor,

General Coordinator of Input Management of the Department of the National Immunization Program of the Ministry of Health of Brazil

October 19, 2023

BRAZIL

 **Population:** 203,062,512 people


Territory




Ranking by UF

1	São Paulo	44,420,459 (people)
two	Minas Gerais	20,538,718
3	Rio de Janeiro	16,054,524
4	Bahia	14,136,417
5	Paraná	11,443,208
6	Rio Grande do Sul	10,880,506
7	Pernambuco	9,058,155
8	Ceará	8,791,688
9	For	8,116,132
10	Santa Catarina	7,609,601

Quilombola and indigenous population

 1,327,802 quilombola people

 1,693,535 indigenous people

<https://censo2022.ibge.gov.br/panorama/indicadores.html>

NATIONAL OPERATIONAL PLAN FOR VACCINATION AGAINST COVID-19, BRAZIL

- **Covid-19 Vaccination Operationalization Plan (PNO):**
 - It began to be structured in August 2020.
 - By priority axes according to WHO recommendations.
 - CETAI - Technical Advisory Chamber on Immunization and Communicable Diseases¹.
 - PNO – Publications: from December 2020 to September 2022;



¹ GAB/SVS Ordinance No. 28, of September 3, 2020.

² Technical Documents - <https://www.gov.br/saude/pt-br/coronavirus/vacinas/plano-nacional-de-operacionalizacao-da-vacina-contra-a-covid-19>

NATIONAL OPERATIONAL PLAN FOR VACCINATION AGAINST COVID-19, BRAZIL

Processing axes

- Epidemiological situation
- Update on vaccines under study
- Budget tracking
- Campaign operationalization
- Pharmacovigilance
- Post-marketing follow-up studies.
- Information system
- Monitoring, Supervision and Evaluation
- Communication
- Campaign closing



¹ GAB/SVS Ordinance No. 28, of September 3, 2020.

² Technical Documents - <https://www.gov.br/saude/pt-br/coronavirus/vacinas/plano-nacional-de-operacionalizacao-da-vacina-contra-a-covid-19>

NATIONAL OPERATIONAL PLAN FOR VACCINATION AGAINST COVID-19, BRAZIL

Processing axes

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- Information system
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Main discussions:

- Risk assessment
- Definition of priority groups
- Denominator update
- Pharmacovigilance protocol
- PNO and Campaign monitoring indicators
- Interval between doses
- Vaccine Coadministration
- Genomic sequencing (vaccine failures)
- AEFI or ESAVI Rapid Response Team
- Vaccination strategies



1 GAB/SVS Ordinance No. 28, of September 3, 2020.

2 Technical Documents - <https://www.gov.br/saude/pt-br/coronavirus/vacinas/plano-nacional-de-operacionalizacao-da-vacina-contra-a-covid-19>

PRIORITY GROUPS WITH VACCINE OFFER



60 years or older
institutionalized

100%
156.878
thousand
people



Institutionalized
people with
disabilities

100%
6.472
thousand
people



People with
90 years
or more

100%
893.873
thousand
people



Workers
of health

100%
6.649.307
thousand
people



Indigeno
us
villages

100%
413.739
thousand
people



Population of
85 to 89 years

100%
1.299.948
thousand
people



Population of
80 to 84 years

100%
2.247.225
thousand
people



Population of
75 to 79
years

100%
3.614.384
thousand
people



Traditional towns and
communities
(bank)

100%
286.833
thousand
people



Traditional towns
and communities
quilombola

100%
1.133.106
thousand
people



Population of
70 to 74 years

100%
5.408.657
thousand
people



Population of
65 to 69 years

100%
7.349.241
thousand
people



Population of
60 to 64 years

100%
9.383.724
thousand
people



Security and rescue
forces and armed
forces

31,6%
948.292
thousand
people

NATIONAL VACCINATION CAMPAIGN AGAINST COVID-19, BRAZIL

COVID-19 Vaccine Distribution

- Attention to priority populations defined in the National Operational Plan
- Proportional to the target groups in each Federated Unit
- Depends on the number of doses available
- I consider the two-dose vaccination schedule and the interval time.



¹ Portaria GAB/SVS No. 28, dated September 3, 2020.

² Technical Documents - <https://www.gov.br/saude/pt-br/coronavirus/vacinas/plano-nacional-de-operacionalizacao-da-vacina-contra-a-covid-19>

NATIONAL VACCINATION CAMPAIGN AGAINST COVID-19, BRAZIL

COVID-19 Vaccine Distribution

- Started January **18, 2021** – **6 million doses** (Sinovac/Butantan)
- Currently, vaccines against COVID-19 are being distributed in Brazil:
 - Coronavac (Butantán);
 - Comirnaty (Pfizer)
 - Baby (6m to 4a)
 - Pediatric (5th to 11th)
 - Bivalent (+12 years)
 - Recombinant Covid-19 Vaccine (Janssen)

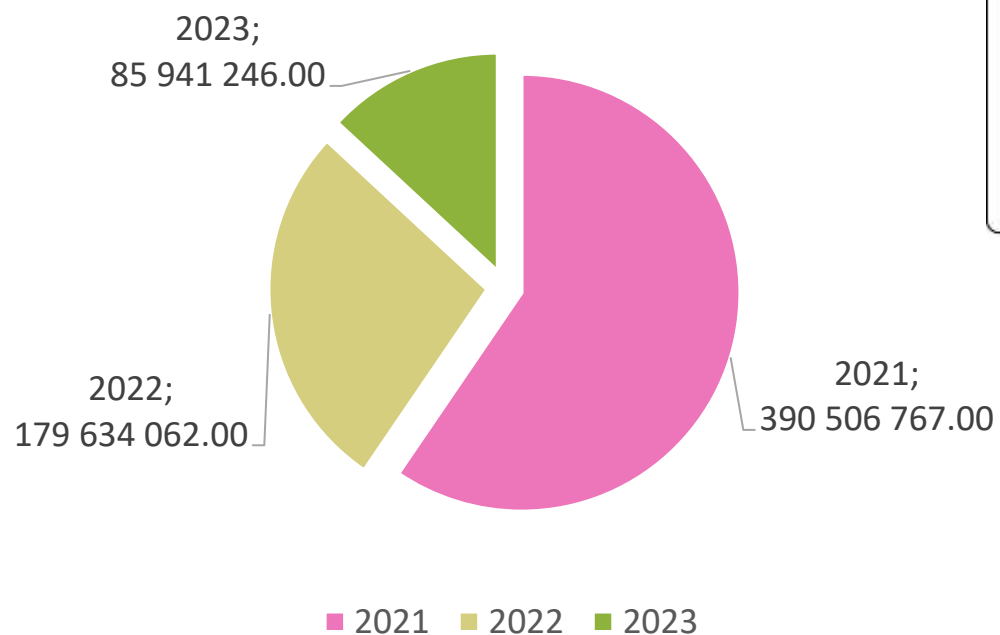


¹ Portaria GAB/SVS No. 28, dated September 3, 2020.

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NATIONAL VACCINATION CAMPAIGN AGAINST COVID-19, BRAZIL

COVID-19 Vaccine Distribution



Total: 656.082.075



YEAR	Applied Doses
2021	339.928.150,00
2022	163.293.643,00
2023	34.738.719,00
TOTAL	537.960.512,00

MAIN CHALLENGES PRESENTED BY STATES

- Inadequate physical structure;
- Use of domestic refrigerators;
- Insufficient cold rooms for greater storage capacity;
- Adapt vaccination services to care for patients with Covid-19;
- Instability of the electrical grid;
- Lack of Generator/Nobreak for maintenance of the electrical network;
- Transport with adequate refrigeration.



MAIN CHALLENGES PRESENTED BY STATES

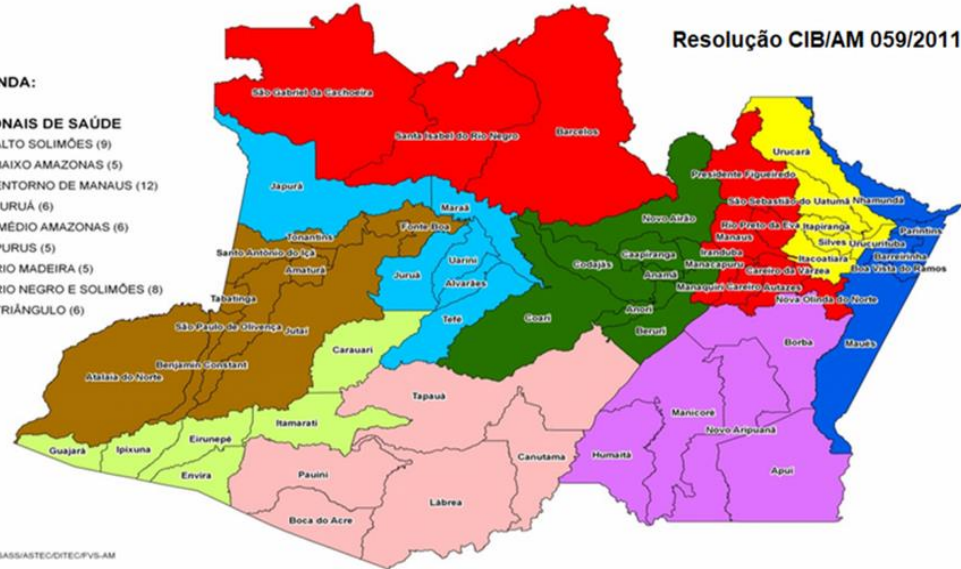
- Lack of adequate equipment and supplies for the storage of immunobiologicals (thermometer, refrigerator, thermal box);
- Insufficient human resources;
- Health professionals with insufficient training;
- Need for preventive and corrective maintenance of equipment;
- Air conditioning without maintenance contract;



LEGENDA:

REGIONAIS DE SAÚDE

- ALTO SOLIMÕES (9)
- BAIXO AMAZONAS (5)
- ENTORNO DE MANAUS (12)
- JURUÁ (6)
- MÉDIO AMAZONAS (6)
- PURUS (5)
- RIO MADEIRA (5)
- RIO NEGRO E SOLIMÕES (8)
- TRIÂNGULO (6)



Resolução CIB/AM 059/2011

AMAZONAS

Area	1.559.256 km²
Dimension with northern region	40,70%
Dimension with National Territory	18,40%
Population density	2,53 hab/km²
Population	3.941.175 pessoas
Regional Health	

Population with great diversity.

Indigenous population



CABOCLOS



RIBEIRINHOS (river bank)



Photos; Brazilian Health Ministry

Strategic Input Transportation Logistics, Brazil.



Photos; Brazilian Health Ministry

Support from PAHO (PAHO)

PRODUCT	AMOUNT	CAPACITY IN LITERS	SUPPLIER
Cold Boxes	90 boxes with 24 gel coils each box	20L	B Medical
Thermos cold packs	144 sendo (4 by Dsei) 576 (Gelox for cx 2.7L)	2.7L 0.6L	NILKAMAL
Cold Boxes cold packs	34 (quantity requested) 816 (Gelox for cx 7L)	7L 0.4L	
Syringes – covid19	418,564,000 units	(0.3CC, 0.5CC e 1CC)	Diversos

PRODUCT	Laboratory	presentation	Quantity to send by APO (DOSE)
COVID19 COVAX-AISA/SE vaccine	Astrazeneca	1 dose	9.122.400
COVID19 COVAX-AISA/SE vaccine	Astrazeneca	10 dose	2.187.100
COVID19 COVAX-AISA/SE vaccine	SINOVAC (coronavac)	1 dose	3.916.800



INVESTMENT IN STRUCTURING THE COLD CHAIN INFRASTRUCTURE

74 Ultra Low Temperature (ULT) Freezer



	MS/OPAS		Unidos pela Vacina (UpV)
PROCESS	Delivered and installed		Delivered and installed
ABILITY	549L	816L	590L
TOTAL	66	8	54

54 Ultra-Low freezers Donated by United for the Vaccine (UpV) Accenture



20L boxes

Gracias! Thank you Obrigada!



Thayssa Neiva da Fonseca Victer

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MINISTÉRIO DA
SAÚDE





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Strengthening the cold chain and lessons learned during the covid-19 pandemic

Sandra Milena Aparicio Fuentes, National Institute of Health of
Colombia

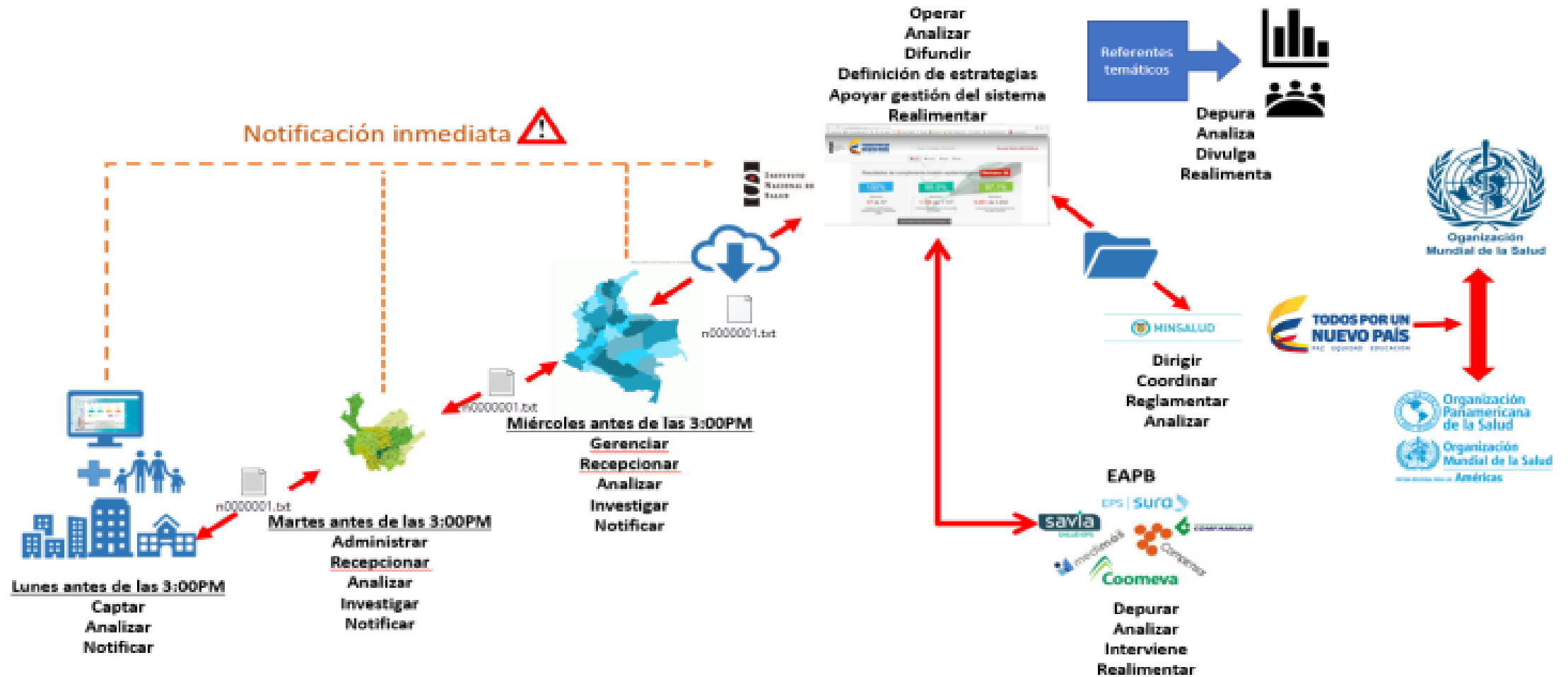
October 19, 2023

A timely response to address the COVID-19 pandemic

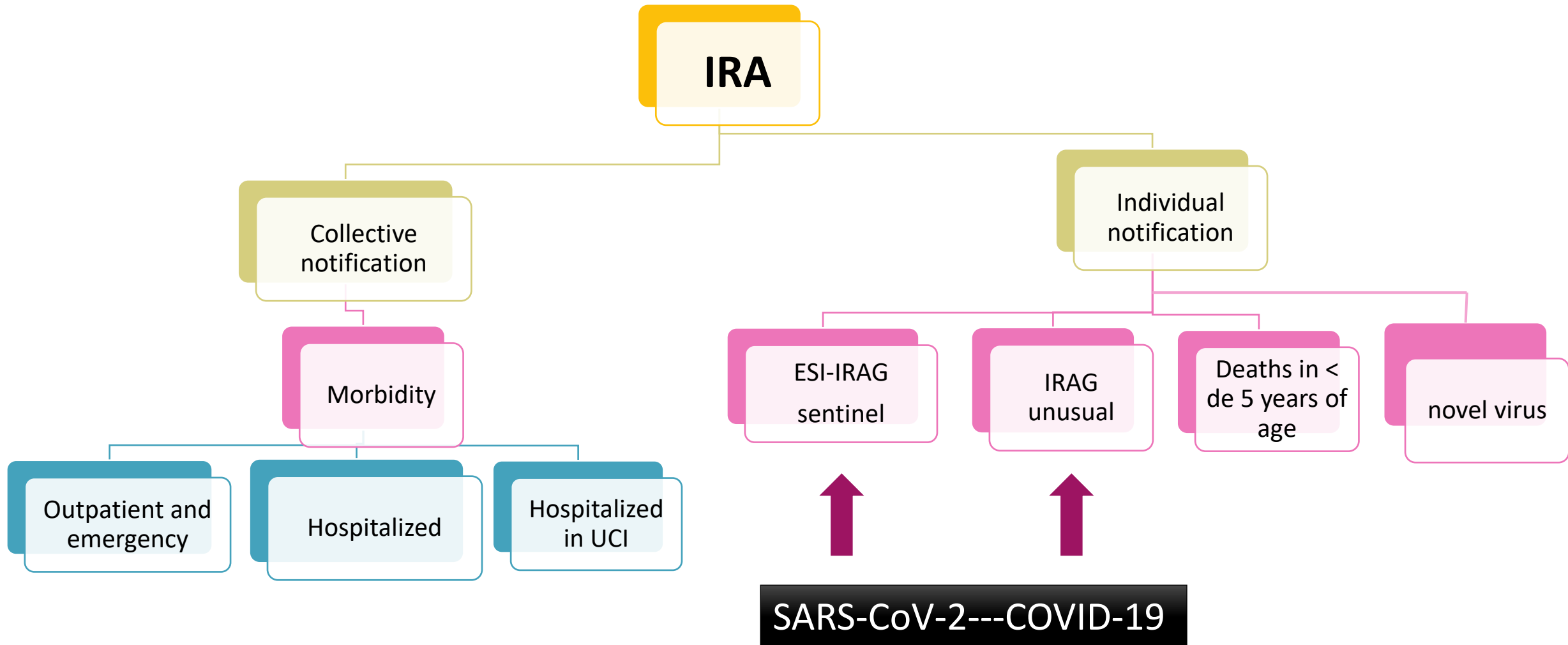


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National public health surveillance system Colombia



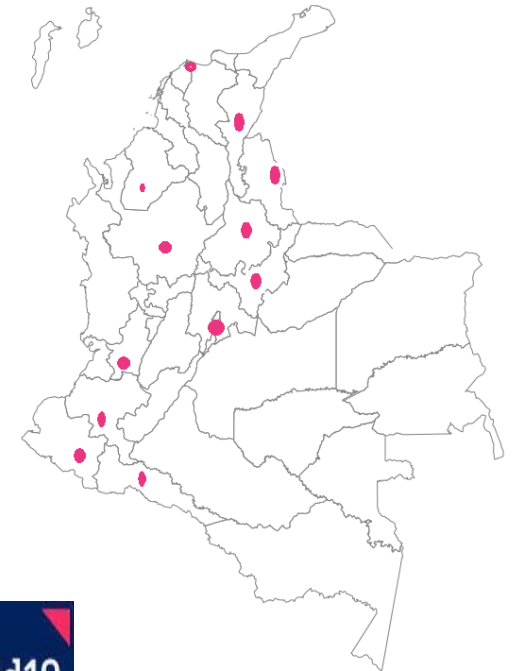
Acute Respiratory Infection Surveillance Strategy in Colombia



Real time information COVID-19 Colombia 2020-2023



SISMUESTRAS
Registro Nacional de pacientes y resultados



**NATIONAL
REPORTING BASE
COVID-19**



Real time information COVID-19 Colombia 2020-2023



REPORTE DIARIO COVID



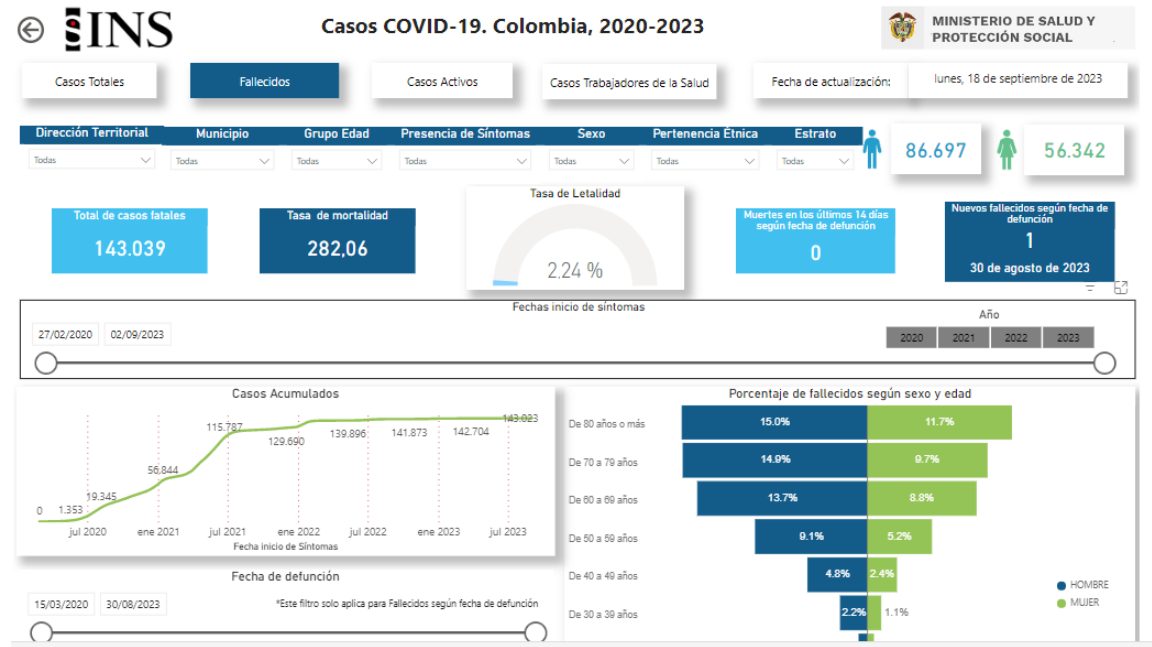
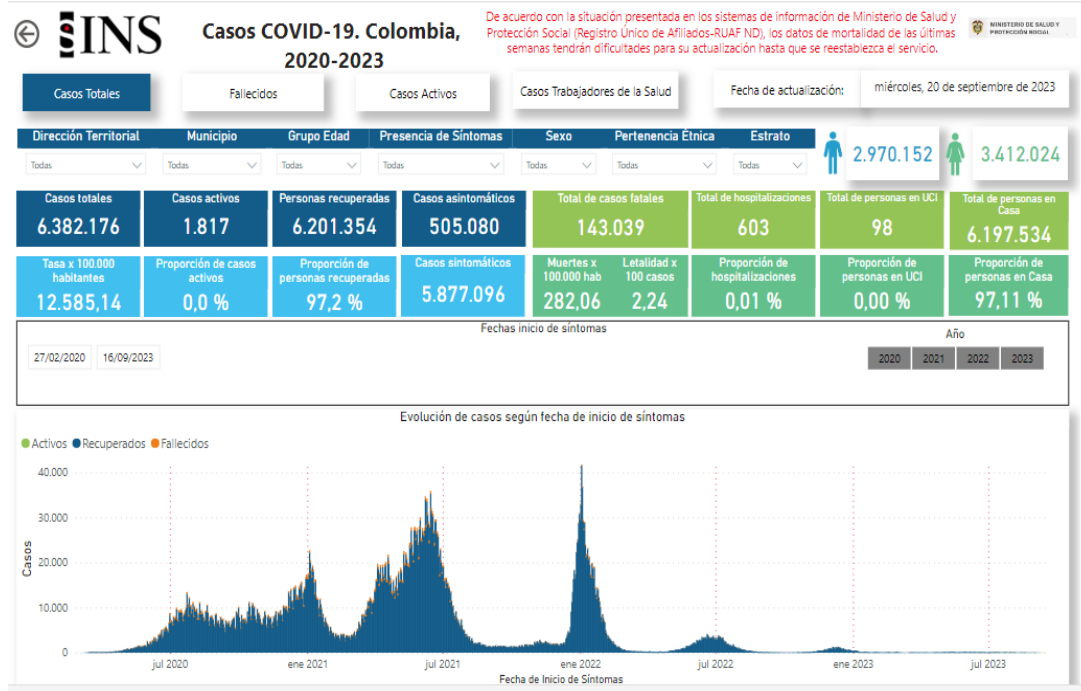
1/01/2022

	31/12/2021	1/01/2022
Nuevos Positivos	10401	12415
Total acumulado	5157440	5169856
Total hospitalizados	1320	1336
Total en UCI	480	490
Total recuperados	4970713	4974212
Por PCR	823950	826733
Por tiempo clinico	4146763	4147479
Total en casa	5003358	5015671
Fallecidos nuevos	41	44
Total fallecidos	129942	129986
Total en casa no recuperado	36732	45542
Total activos	38196	47046
Pruebas realizadas día	56746	77202
PCR	29705	35222
ANTIGENO	27041	41980
Total descartados	24465133	24529920

IDES_SISMUESTRAS_PCR_LAG >

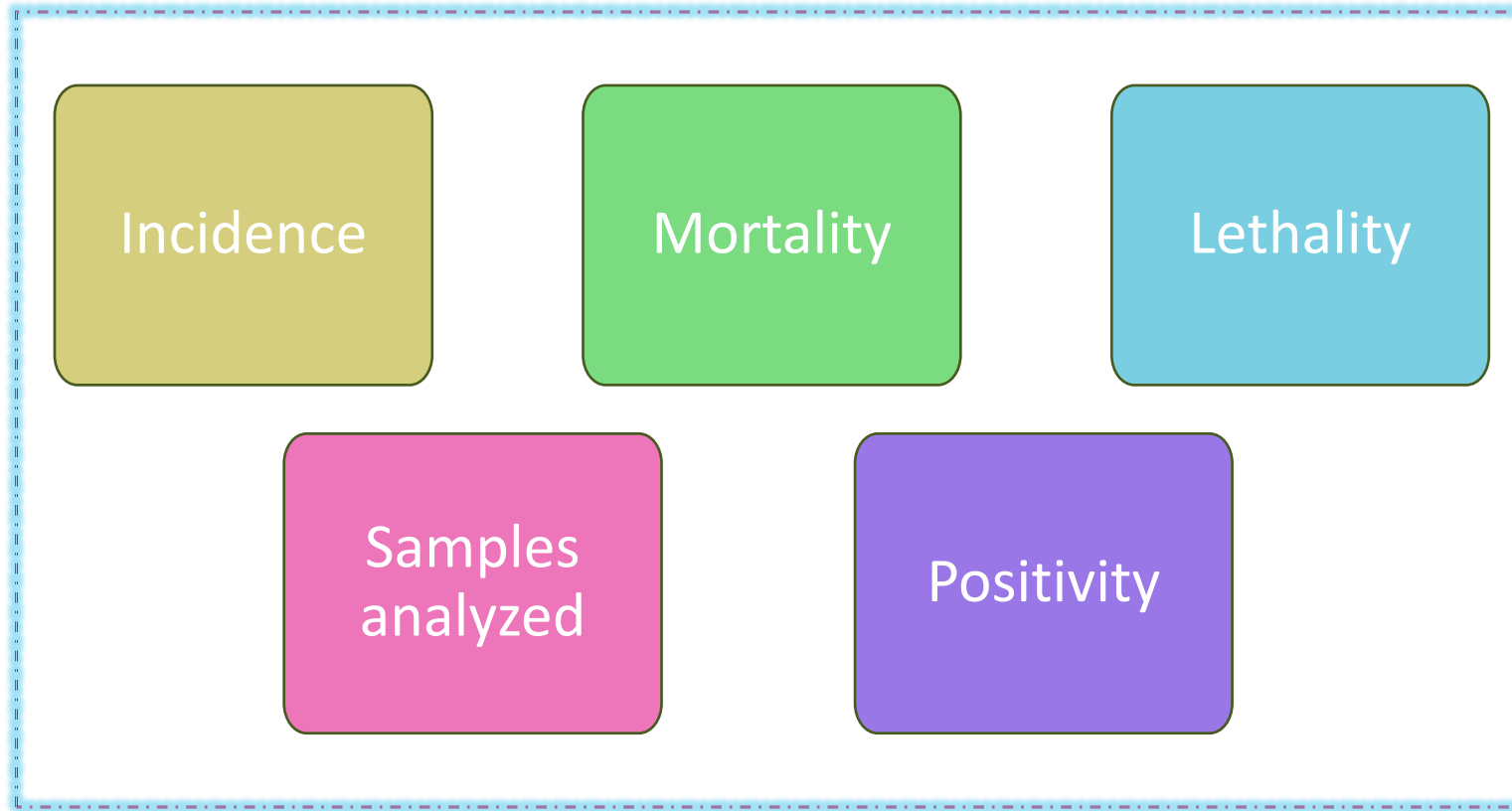
Nombre	Estado	Fecha de modificación	Tipo	Tamaño
AMAZONAS	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
ANTIOQUIA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
ARAUCA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
ATLANTICO	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
BARRANQUILLA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
BOGOTA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
BOLNAR	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
BOYACA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
BUENAVENTURA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CALDAS	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CALLI	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CAQUETA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CARTAGENA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CASANARE	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CAUCA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CESAR	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CHOCO	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CONSOLIDADOS	🔵 R	5/04/2023 1:52 p. m.	Carpeta de archivos	
CORDOBA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
CUNDINAMARCA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
GUAINIA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
GUAJIRA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
GUAVIARE	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
HUILA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
MAGDALENA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
META	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
NARIÑO	🔵 R	5/04/2023 1:52 p. m.	Carpeta de archivos	
NORTE SANTANDER	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
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SANTANDER	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
STA MARTA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
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TOLIMA	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
WALLE	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
VAUPES	🔵 R	23/09/2023 6:00 a. m.	Carpeta de archivos	
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Control panels COVID-19 Colombia 2020-2023

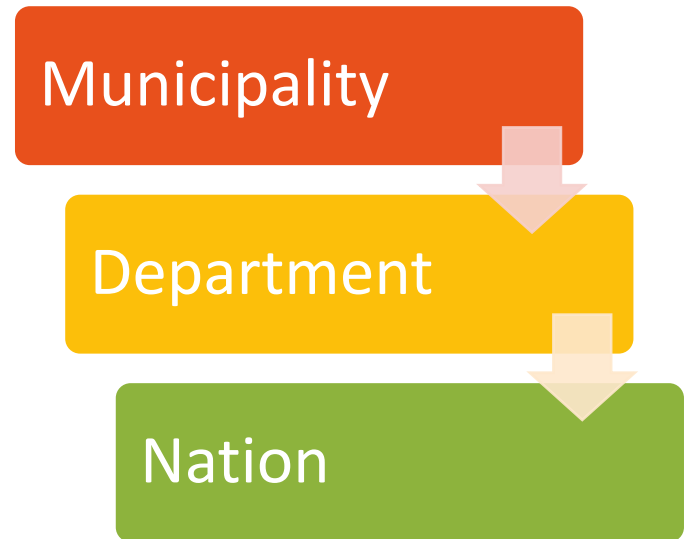


<https://portalsivigila.ins.gov.co/>

Indicadores y afectación COVID-19 Colombia 2020-2023



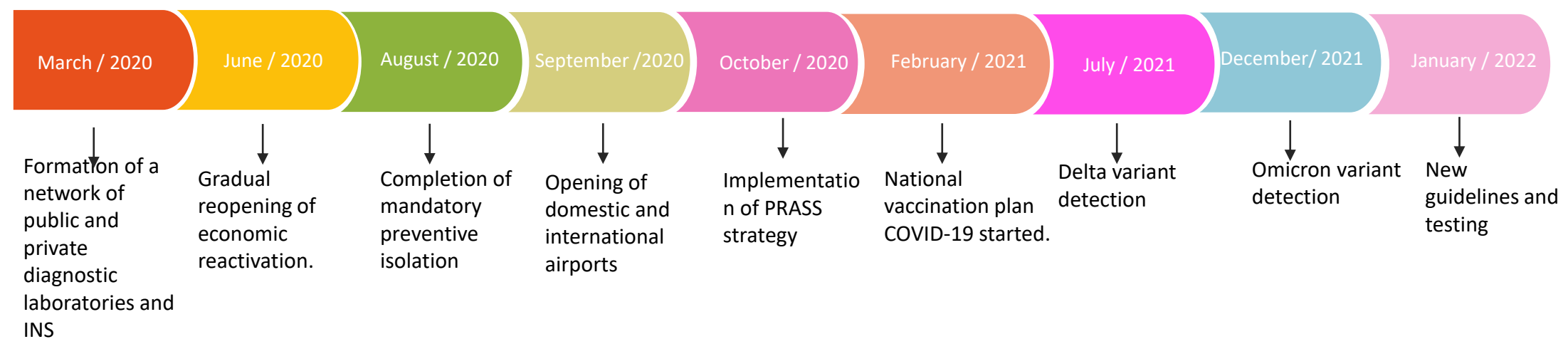
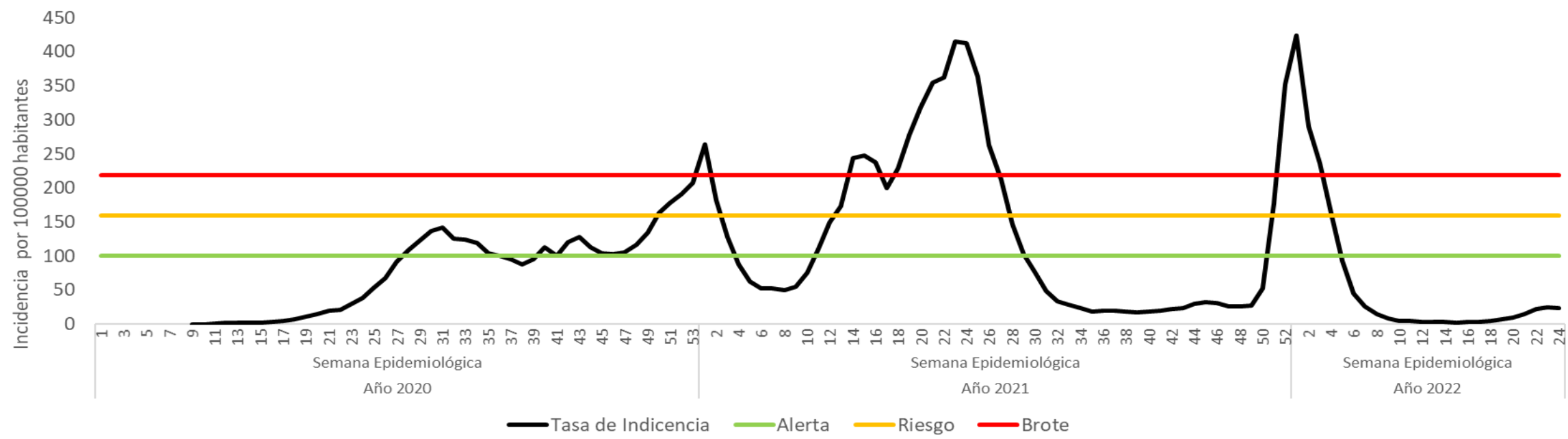
Levels



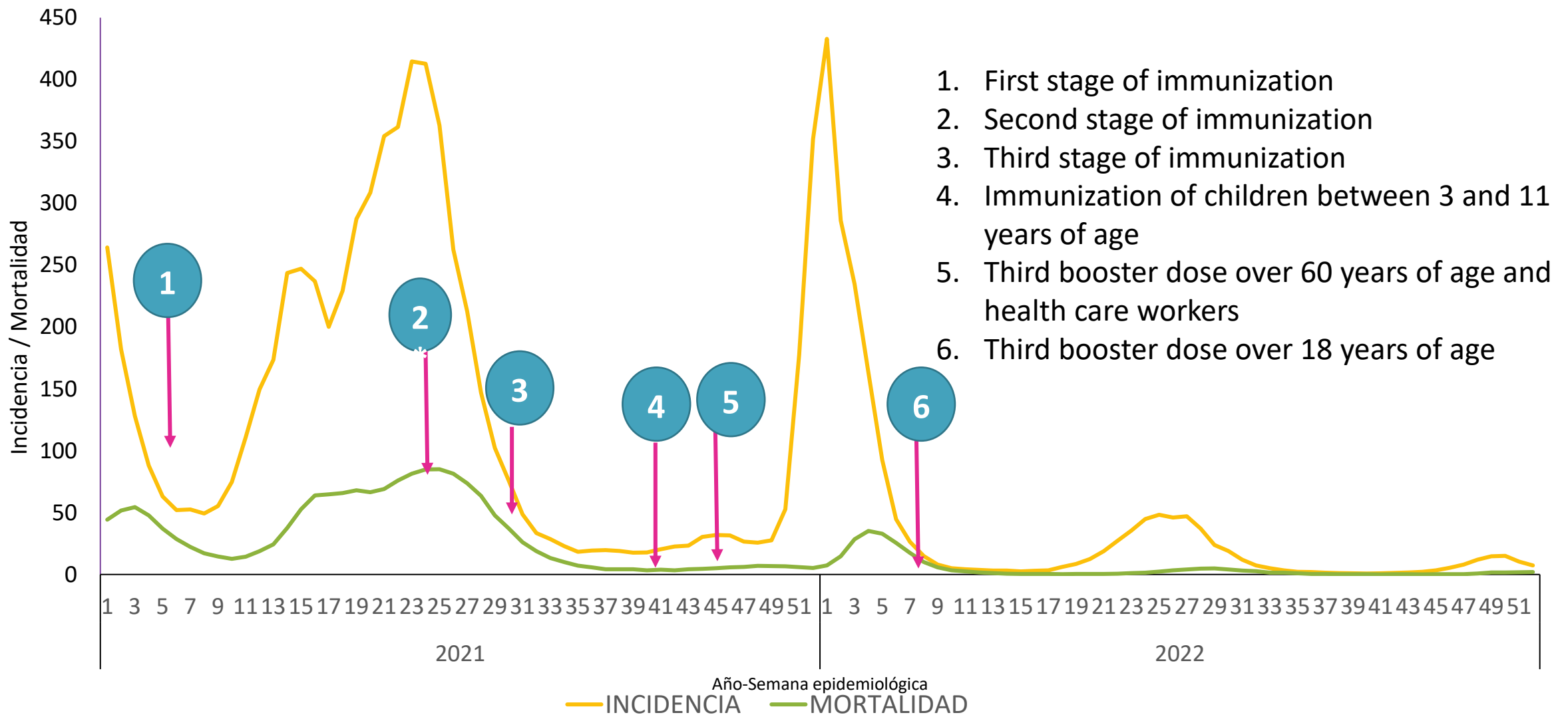
Prioritized populations COVID-19 Colombia 2020-2023

- Health care personnel
- Indigenous population
- Afro-Colombian population
- Pregnant women and newborns
- Foreign nationals
- Conglomerates

COVID-19 behavior in Colombia, 2020-2022



COVID-19 behavior in Colombia, 2020-2022



At the present time COVID-19 Colombia



Conclusions COVID-19 Colombia 2020-2023

- The articulation of different institutions and/or information systems was very important for the generation of information and with this to be able to analyze the behavior of the event at all levels of action in real time.
- The information made it possible to make decisions on the actions to be taken in each of the phases of the COVID-19 pandemic.
- It is necessary to continue with the actions of detection, reporting, prevention and control of cases and outbreaks of COVID-19 according to the recommendations of the emergency committee.



GRACIAS ENORMES

A toda esa otra línea de frente que estuvo en la contención y la mitigación del Covid-19 con la población, con los datos diarios, con las acciones en comunidad.

Muchas gracias a los profesionales y técnicos de la vigilancia en salud pública, de los laboratorios, de los dispositivos de terreno y a los equipos de vacunación.

Entendemos lo que se expusieron, el tiempo que dedicaron al trabajo noche a noche y los momentos que perdieron con sus familias.

Nos sentimos orgullosos e inspirados.

#ORGULLOSAMENTE INS



Thank You!

Sandra Milena Aparicio Fuentes,

saparicio@ins.gov.co



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Chilean experience in strengthening the cold chain, lessons learned in pandemic

M.Sc. Juan Pablo Rodríguez Santana, Ministry of Health of Chile

October 19, 2023



General characteristics



One of the longest countries in the world (4.300 Km)

Wide variety of climates

19.629.590 inhabitants (INE projection 2023)

Central Level: Immunization Department

Intermediate: 26 Vaccine and Immunoglobulin Depots (DVI)

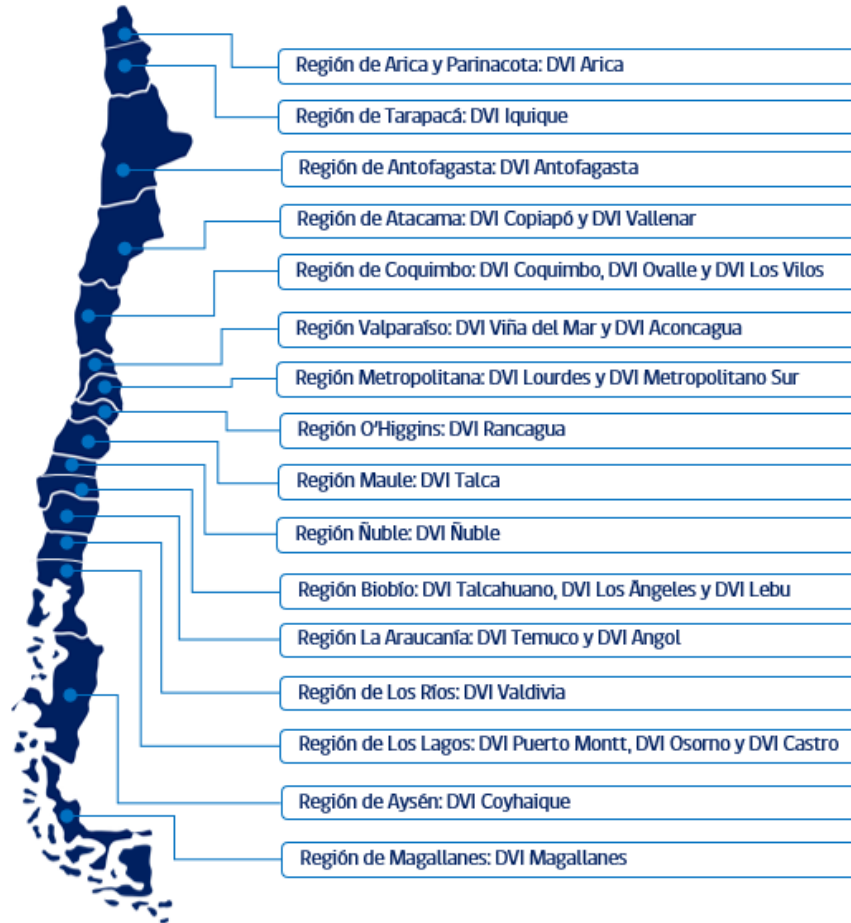
Locally: 2.500 vaccination centers

Strengthening the Cold Chain in intermediate level



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Strengthening the intermediate level



26 Vaccine and Immunoglobulin Depots (DVI) (since 2010)



Telemetry system with remote monitoring (since 2010)

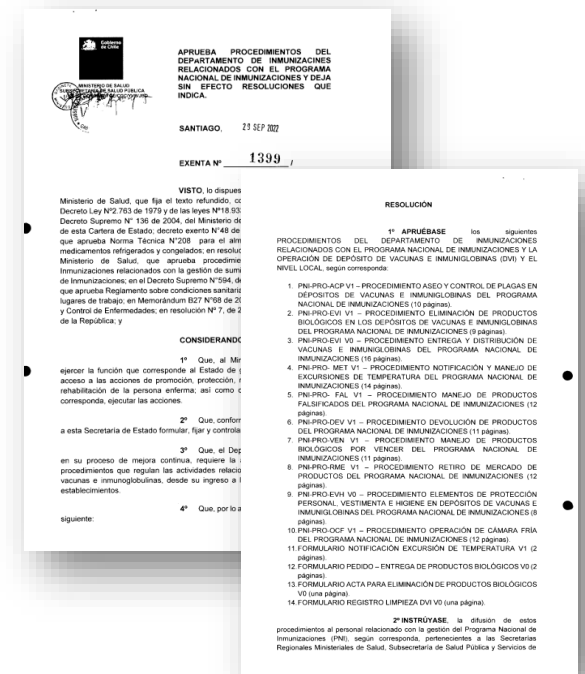
Strengthening the intermediate level



ISO 9001:2015
certification
(since 2018)



Storage area
qualification
(since 2019)



Development of standardized
procedures
(since 2020)

Strengthening the intermediate level



Infrastructure strengthening
(since 2020)



Herramientas fundamentales para la gestión en los
Depósitos de Vacunas e Inmunoglobulinas (DVI)



Procedimientos estandarizados para
Depósitos de Vacunas e Inmunoglobulinas



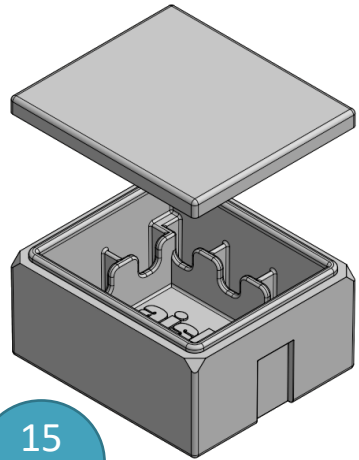
Creation of a continuous training plan
(since 2020)

Strengthening the Cold Chain in locally level

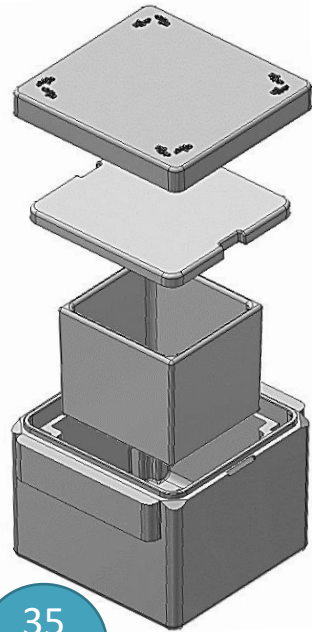


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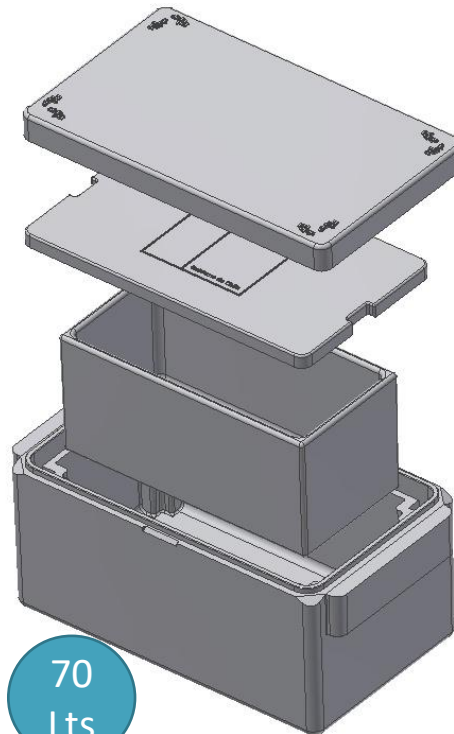
Strengthening the locally level



15
Lts

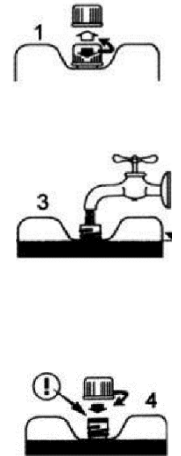


35
Lts



70
Lts

Design and acquisition of passive isothermal containers



Standardization of Refrigerant Units

Strengthening the locally level



Incorporation of thermographs for temperature traceability

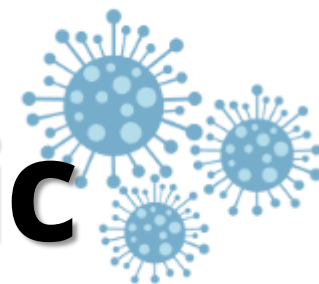


Injection of resources for the acquisition of clinical refrigerators PAHO Technical Cooperation



Formalization of regulatory aspects for the cold chain

Lessons learned in pandemic



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1.- The cold chain transcends refrigeration (2°C a 8°C)

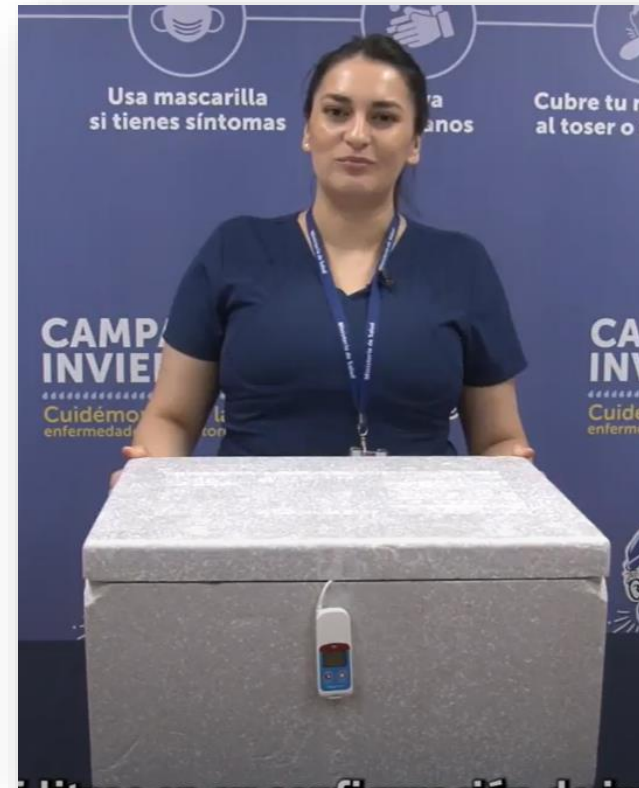
6 Clinical freezers



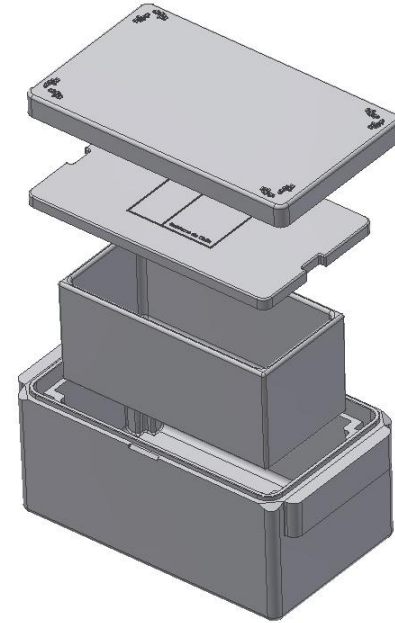
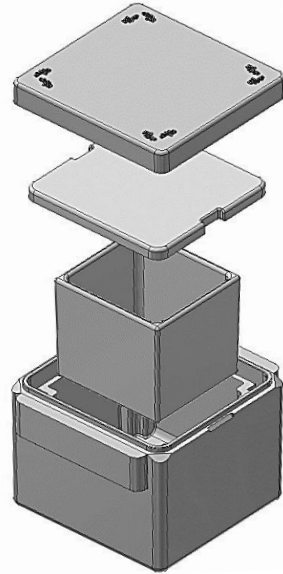
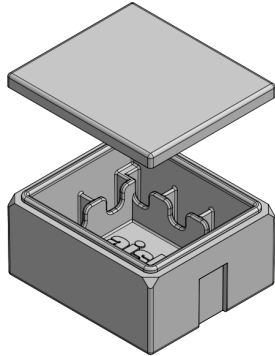
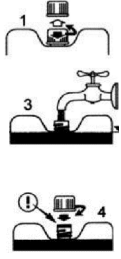
20 Clinical ultra freezers



2. Temperature traceability as a key element



3. Qualified transportation: Efficiency and safety



4.

4. Normative regulation as continuous improvement

 **PROCEDIMIENTO GESTIÓN DE LA CADENA DE FRÍO PARA PRODUCTOS DEL PNI EN LOS NIVELES EJECUTORES** 

Código: PNI-PRO-GCF Versión: 0

**DEPARTAMENTO DE INMUNIZACIONES.
DIVISIÓN DE PREVENCIÓN Y CONTROL DE ENFERMEDADES
SUBSECRETARÍA DE SALUD PÚBLICA.
PROCEDIMIENTO
GESTIÓN DE LA CADENA DE FRÍO PARA PRODUCTOS DEL PNI
EN LOS NIVELES EJECUTORES**

Elaborado por	Revisado por	Aprobado por
 Juan Pablo Rodríguez Encargado nacional de la Cadena de Frío Departamento de Inmunizaciones	 Mariana Bertoglio Asesora Departamento de Inmunizaciones	 Fernando González Escalona Jefe División de Prevención y Control de Enfermedades

Fecha de Publicación: 26 JUL 2023

 **PROCEDIMIENTO OPERACIÓN, MANTENIMIENTO Y LIMPIEZA DE ULTRACONGELADORES DEL PNI** 

Código: PNI-PRO-OML Versión: 0

**DEPARTAMENTO DE INMUNIZACIONES
DIVISIÓN DE PREVENCIÓN Y CONTROL DE ENFERMEDADES
SUBSECRETARÍA DE SALUD PÚBLICA.
PROCEDIMIENTO OPERACIÓN, MANTENIMIENTO Y LIMPIEZA
DE ULTRACONGELADORES DEL PROGRAMA NACIONAL DE
INMUNIZACIONES.**

Elaborado por	Revisado por	Aprobado por
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**No cold chain
no immunization**



¡Muchas gracias!



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