



17th TechNet Conference

Panama City, Panama | October 16-19, 2023

Immunization Programmes That Leave No One Behind

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Integrated services for greater reach

- Dr. Chizoba Wonodi, Johns Hopkins Bloomberg School of Public Health
- Dr. Bhrigu Kapuria, UNICEF Lebanon

October 17, 2023

The relationship between childhood zero dose and wasting in Madagascar, and the promise of integrated service delivery

Chizoba Wonodi, MBBS, MPH, DrPH

Johns Hopkins Bloomberg School of Public Health

- **Brooke Farrenkopf**, Johns Hopkins Bloomberg School of Public Health
- **Daniel Ali**, Johns Hopkins Bloomberg School of Public Health
- **Amos Okpe**, Direct Consulting and Logistics
- **Mbainke Livancliff**, Independent Consultant
- **Hosea Rakoto**, Independent Consultant
- **Razafiarijaona Andritahina Finona Miora**, Jhpiego
- **Jean Pierre Rakotovao**, Jhpiego
- **Katharine Bagshaw**, USAID
- **Habtamu Fekadu**, Save the Children



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Background

1. Zero dose children are those who have not received any vaccination from the routine immunization programs
2. These children likely face multiple deprivations, including acute malnutrition (wasting).
3. Madagascar, one of the 20 priority countries for the “Big Catch up” has a high prevalence of zero dose and wasting.
4. MOMENTUM Country and Global Leadership Project is working with Madagascar’s EPI to improve immunization and nutrition service integration

Study objectives

1

To describe the prevalence zero dose and wasting (separate and joint outcomes) among Madagascar children 12-35 months of age

2

To describe the geographic distribution and differences in zero dose and wasting (separate and joint outcomes)

3

To describe and compare the profile of the zero dose and wasted child

4

To describe the status of, challenges with, and solutions to immunization and nutrition service integration

Methods 1: DHS analysis

Data	Population	Outcome measures	Predictors
<ul style="list-style-type: none"> • Madagascar 2021 DHS analysis • N=4,662 observations had immunization data available and • N=2,338 observations with nutrition and immunization data available 	<ul style="list-style-type: none"> • Children 12-35 months • All regions of the country 	<ul style="list-style-type: none"> • Outcome 1: Zero dose – non receipt of BCG, polio, DTP, or MCV • Outcome 2: Wasting - ≥ 2 standard deviations below the average weight for height • Outcome 3: Zero dose & wasting 	<ul style="list-style-type: none"> • Demographic • Maternal • Health care access • Media access • Female autonomy

Statistical analysis

Descriptive:

Proportion zero dose, wasted, zero dose and wasted at national and regional level; and by predictor category

Correlation:

Bivariate and multivariate logistic regression, Chi square test, odds ratio of outcome by predictor level



Methods 2: Human-centered design

Participants

- National, regional and district level EPI managers
- Partners (WHO, Unicef)
- Facility-based vaccination providers, community leaders, caregivers

Process

- One-day workshop in Antananarivo
- Group work, feedback session
- Participants assumed one of four personas
- Discussions followed problem definition, solution ideation, prototype creation

Key questions

- What are the barriers to integration of immunization and nutrition
- What are the solutions to improve integration

Synthesis

- Thematic analysis by service delivery levels and pillars

Findings

Obj 1

- **Prevalence of the outcomes**
- Estimate the prevalence of zero dose vaccination, wasting, and stunting – separately and jointly

Obj 2

- **Regional differences and similarities**
- Looking at the distribution of zero dose and wasting across regions and the potential programmatic implications

Obj 3

- **Profile of wasted and zero dose children**
- Understanding the household-level sociodemographic characteristics of zero dose and wasting in children

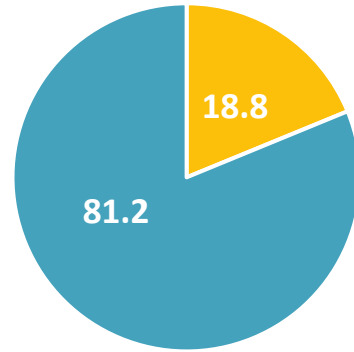
Obj 4

- **Describe the status of, challenges with and solutions to immunization and nutrition integration**

National prevalence of zero dose (18.8%) was twice that of wasting (9.3%). One in 4 children were either zero dose OR wasted; 2.2% were zero dose AND wasted

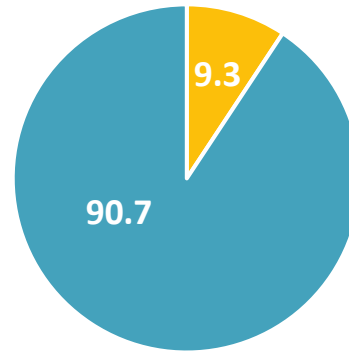
Zero dose, wasting, and stunting outcomes as separate outcomes

Zero dose, national prevalence



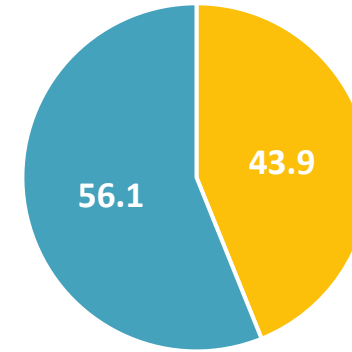
■ Zero dose ■ Not zero dose

Wasting, national prevalence



■ Wasted ■ Not wasted

Stunting, national prevalence

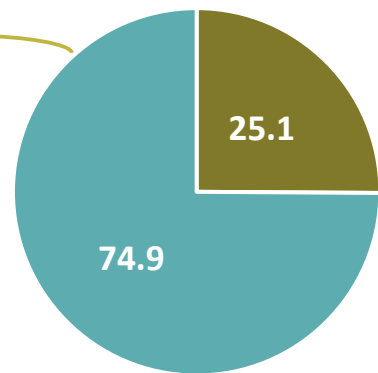


■ Stunted ■ Not stunted

While an extremely high proportion of children are stunted (43.9%), **our analysis will focus on the distribution of zero dose and wasting status**, as wasting can be addressed through immediate efforts. In addition, the risk factor profile of children who are zero dose and wasted is similar, which offers programmatic advantages.

Zero dose and wasting as joint outcomes

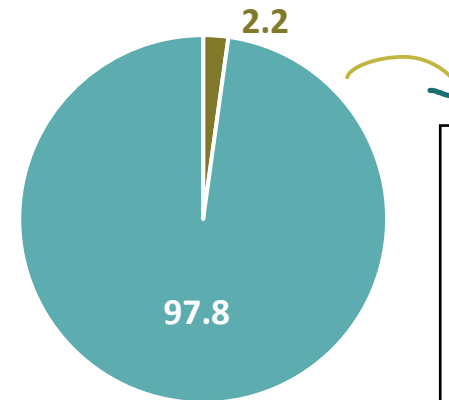
Children who are zero dose OR wasted



■ Wasted OR zero dose ■ Neither

1 in 4 Malagasy children are either zero dose or wasted.

Children who are zero dose AND wasted

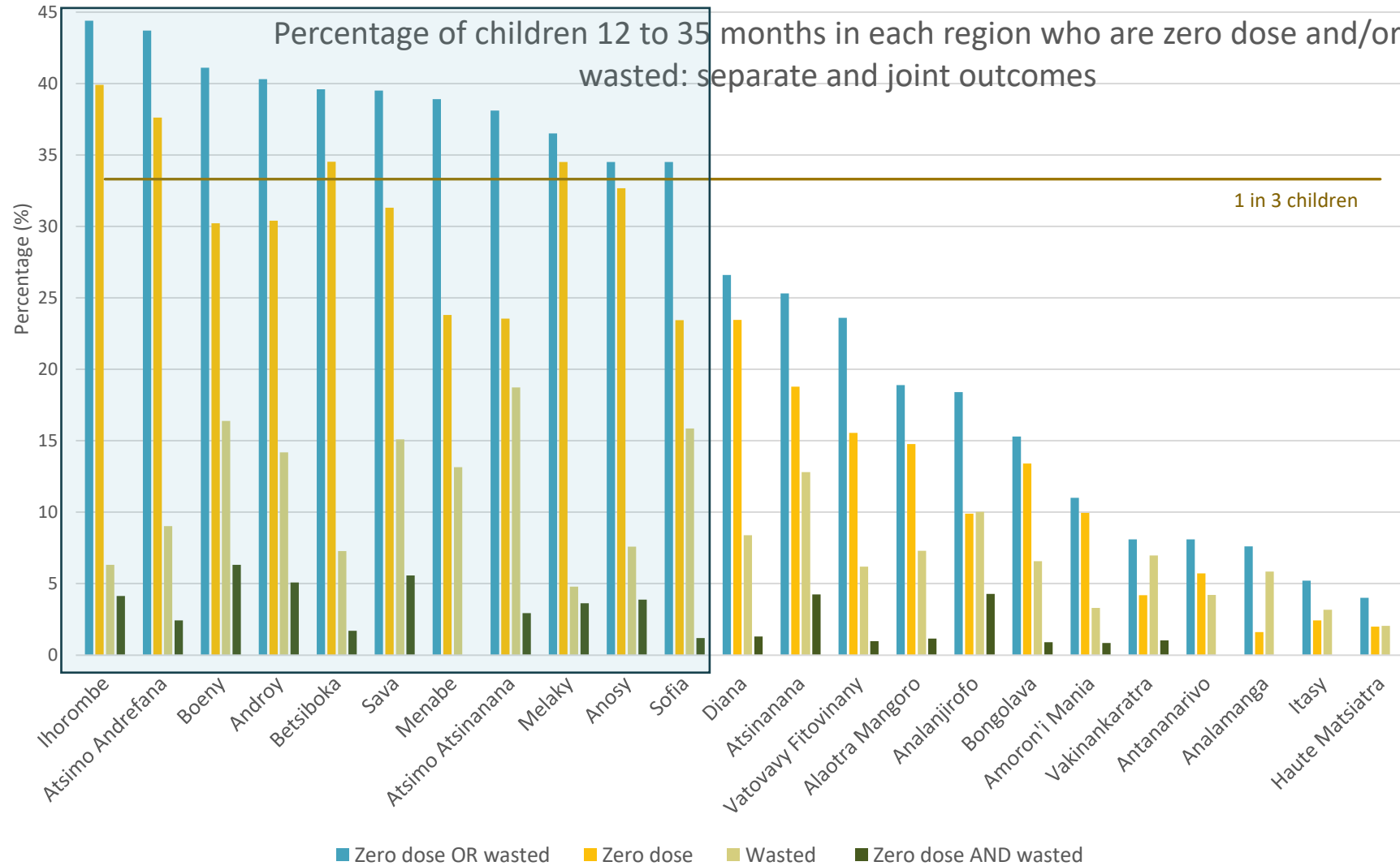


■ Acutely undernourished AND zero dose ■ Not both

While a small proportion of children are both zero dose and wasted (2.2%), these children are more likely to get vaccine-preventable diseases (VPDs) AND more likely to have severe outcomes and death from VPDs, **making them a highly vulnerable subset of the population.**

In nearly half of the regions, at least 1 in 3 children are either zero dose or wasted

50



Four typologies of immunization and nutrition gaps were created to identify priority regions and intervention focus

	Low wasting	High wasting		
High zero dose	<ol style="list-style-type: none"> 1. Ihorombe 2. Atsimo Andrefana 3. Betsiboka 4. Melaky 5. Anosy 6. Diana <p style="text-align: right; font-size: 24px; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</p>	<ol style="list-style-type: none"> 1. Boeny 2. Androy 3. Sava 4. Menabe 5. Atsimo Atsinanana 6. Sofia <p style="text-align: right; font-size: 24px; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">2</p>		
Low zero dose	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 1. Alaotra-Mangoro 2. Amoron'i Mania 3. Analamanga 4. Bongolava 5. Fitovinany </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 6. Itasy 7. Matsiatra Ambony 8. Vakinankaratra 9. Vatovavy </td> </tr> </table> <p style="text-align: right; font-size: 24px; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">3</p>	<ol style="list-style-type: none"> 1. Alaotra-Mangoro 2. Amoron'i Mania 3. Analamanga 4. Bongolava 5. Fitovinany 	<ol style="list-style-type: none"> 6. Itasy 7. Matsiatra Ambony 8. Vakinankaratra 9. Vatovavy 	<ol style="list-style-type: none"> 1. Atsinanana 2. Analanjirofo <p style="text-align: right; font-size: 24px; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">4</p>
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Type 1 – High ZD/Low Wasting
Regions should be top priority for ZD interventions

Type 2 – High ZD/High Wasting
Regions should be top priority for both ZD and wasting interventions

Type 3 – Low ZD/ Low Wasting
Regions should be lower priority

Type 4 – Low ZD/High Wasting
Regions should be top priority for wasting interventions

High – regions with zero dose/ wasting prevalence above national average
Low – regions with zero dose/ wasting prevalence below national average

Comparing risk factors for zero dose and wasting

A greater number of factors were correlated with zero dose status than with wasting. Zero dose status was reflective of healthcare access gaps

Demographic

- Place of residence
- Wealth quintile **ZD**
- Child sex
- No of children ever born

Maternal

- Maternal educational level **ZD** **W**
- Maternal age **W**

Healthcare access

- No of ANC visits **ZD**
- No of TT injection received
- Place of delivery **ZD**
- Child receipt of vit. A in last six months **ZD**

Media access

- Frequency of listening to radio **ZD**
- Frequency of watching television **W**

Female autonomy

- Decision on visit to family or relatives

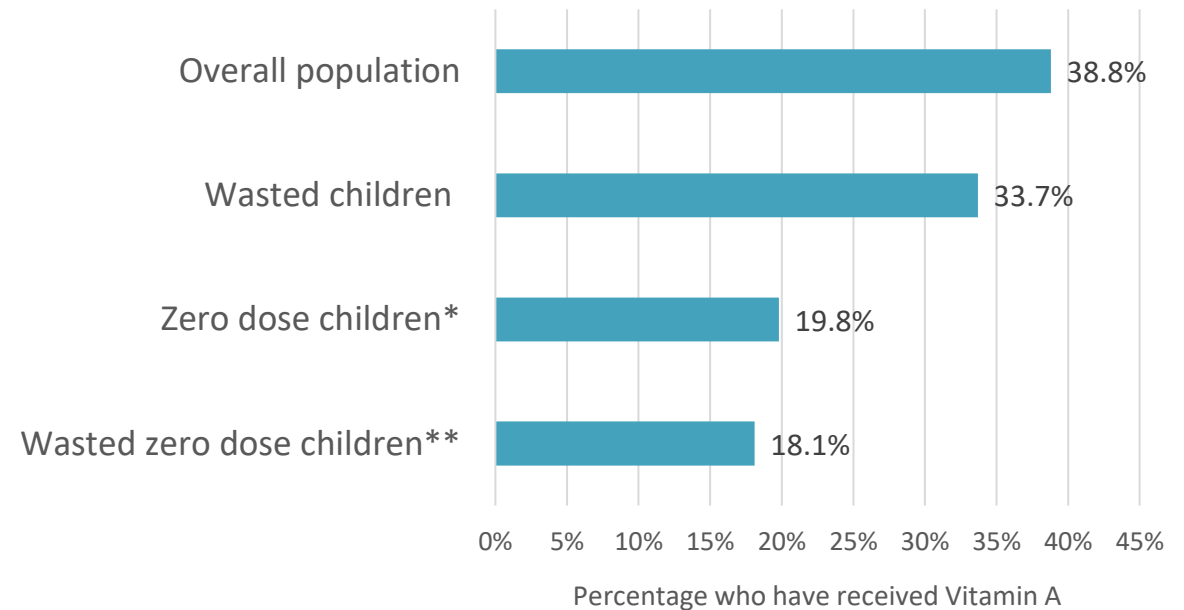
Wasted children have more access to Vitamin A than zero dose children. However, access to Vit A does not reflect access to food:

The uptake of Vitamin A is already low in Madagascar, and zero-dose children (both wasted and non-wasted) are nearly half as likely to receive Vitamin A supplementation compared to the general population of children aged 12-35 months.



Percentage of children who received Vitamin A in the past 6 months

Among children 12 - 35 months in each group



*Statistically significant difference in Vitamin A proportion between zero dose and vaccinated children ($p < 0.01$).

**Nearly statistically significant difference in Vitamin A proportion between wasted zero dose and non-wasted zero dose children ($p = 0.055$).

Findings from the HCD workshop: Immunization and nutrition integration in Madagascar is sub optimal

Current status of integration

- Nutrition and immunization services are integrated only in a few facilities
- Services integrated were:
 - Vitamin A supplementation,
 - Breast feeding counseling,
 - Growth monitoring,
 - Referral of severe acute malnourished children to the CMAM center
- Monthly meetings between immunization service providers and nutrition focal persons occur.

Key barriers to integration

- Availability of health workers is the biggest challenge for healthcare integration in Madagascar
- Lack of policies /guidelines and inadequate funding are also major barriers
- Inadequate materials, equipment and infrastructure

Recommended actions from the HCD workshop

Improve coordination –
monthly and quarterly
joint meetings at all levels

Map and leverage
opportunities for
partnerships with existing
food programs

Develop a roadmap for
integration of
immunization and
nutrition services

Train HCW in all HFs to
integrate services

Provide nutritional
supplements to caregivers
during immunization
sessions

Create demand for both
immunization and
nutrition services through
community leaders and
community engagement

Discussions 1

- Nearly 1 in 5 children are zero dose and nearly 1 in 10 children are wasted
- 1 in 4 children are either zero dose or wasted
- While only a small proportion of children are both zero dose and wasted (2.2%) , this represents the highest risk group
- 6 regions were identified as having high zero dose and high wasting



Photo credit: UNICEF

Discussions 2

- Factors associated with being zero dose, are not predictors of wasting except maternal education
- The profile of the zero dose child more strongly indicates limited access to healthcare compared to that of the wasted child.
- Integration of nutrition, immunization and food security services can be strengthened to address the dual problem of poor access to care and food



Photo credit: UNICEF

Conclusion:

1. We found a high prevalence of zero dose and wasting among children in Madagascar, with significant clustering of these vulnerabilities at the regional level.
2. Our quantitative findings identified the regions with the highest risk and biggest burden of both outcomes and make a strong case for integration of immunization and nutrition services.
3. Triangulating the survey with HCD findings suggests untapped opportunities to integrate across immunization, nutrition and food security in high burden regions that are served by existing food security programs.
4. Our findings should give the immunization and nutrition programs in the country the evidence to act, and the impetus to extend partnerships with the food distribution sector to address missed opportunities for integration and overcome the challenge of zero dose and wasting in the country.



Thank You!

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Chizoba Wonodi, MBBS, MPH, DrPH cwonodi1@jhu.edu

Immunization as Entry Point for Primary Health Care and Beyond Health Interventions

Process and Insights from an Integrated Approach in Lebanon

- Dr Bhrigu Kapuria (UNICEF)- Presenter
- Dr Randa Sami Hamadeh (Ministry of Public Health, Lebanon)
- Mr. Kassem Chaalan (Lebanese Red Cross)

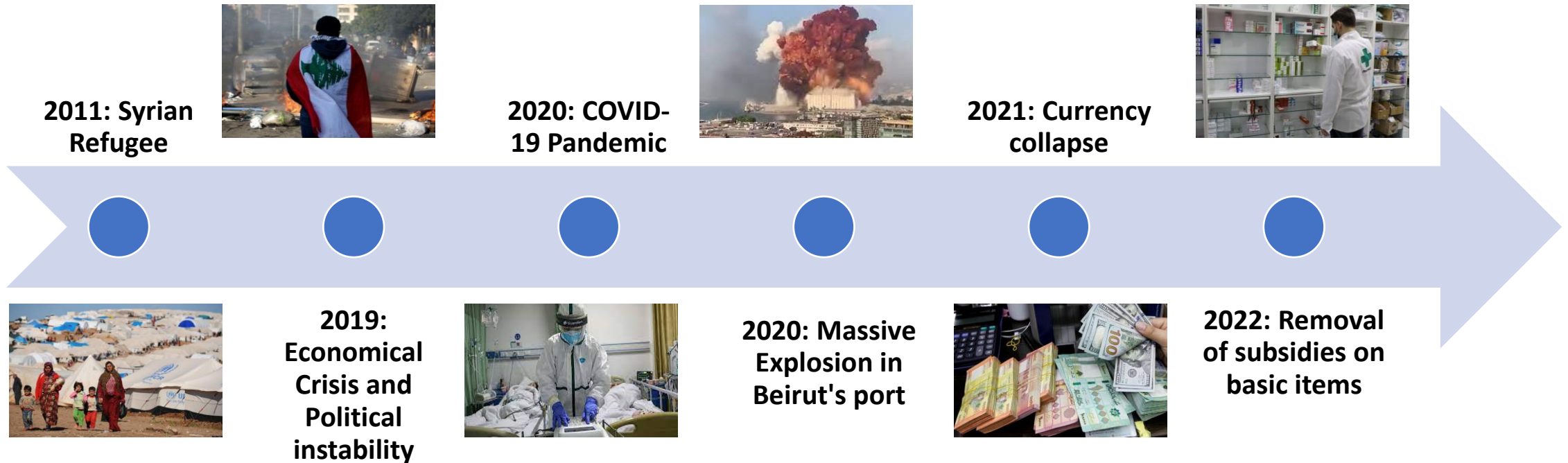
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Lebanon

The multiple crisis – chronic fragility

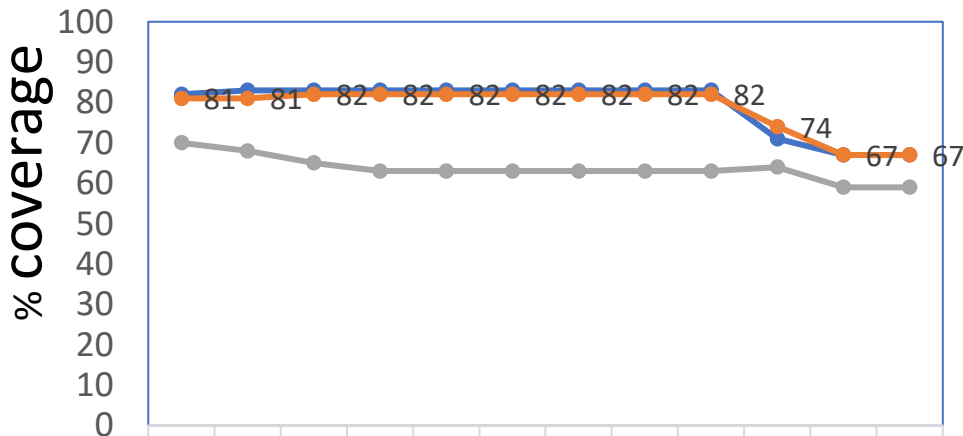


- As a result, 70% of Lebanese and more than 90% of Syrian Refugees living currently under the poverty line*
- Inflation rates touched 260% in 2023
- Currency lost its value by 98%; government budget lost its value
- Lebanon is recently classified as Low to Middle Income Country (LMIC)
- Since parliamentary elections in May 2022; the government resigned and currently is a caretaker with the post of President is vacant.

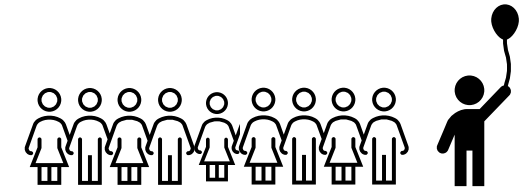
The Health and Immunization Criss



- Mass exodus of Doctors (40%) and Nurses (30%) and private sector becoming non-affordable and non-accessible
- More than 30% drop in vaccination coverage in public sector and 49% drop in the private sector
- Low immunization coverage leading to increased outbreaks of **Measles and risk of other VPDs and Polio**
- **1/3rd of infants missing even a single dose of measles-containing vaccine**
- Return of Cholera after 29 years indicating impact of economic collapse on Water, Sanitation and Health structures
- Substantial number of equipment dependent on Gas/Kerosene due to no electricity
- Health facilities running dark or on diesel generators to function with no electricity in the country
- Preventive health programs took a backseat for parents among competing priorities for basic survival



Every Third Child in Lebanon has missed their basic vaccination



Every Tenth Child in Lebanon has not received even a single does of any vaccine

Strategy Adopted

Strengthening PHCCs

Improving Quality and Trust

1. Practical Training of Nurses
2. Solarization of PHCCs
3. Solarization of the entire cold chain network
4. Upgrades in digital solutions for all aspects of Primary Health care including immunization



Bringing Services Closure to the Community

Integrated Outreach Immunization Services

- Community engagement to identify and mobilize missed children
- Provide vaccination services and use the opportunity to provide other preventive and promotive services

Immunization at Health Facilities

Sustained Quality Immunization services at EPI Points (PHCC/Dispensaries)

Bridging Access

Reaching most vulnerable communities

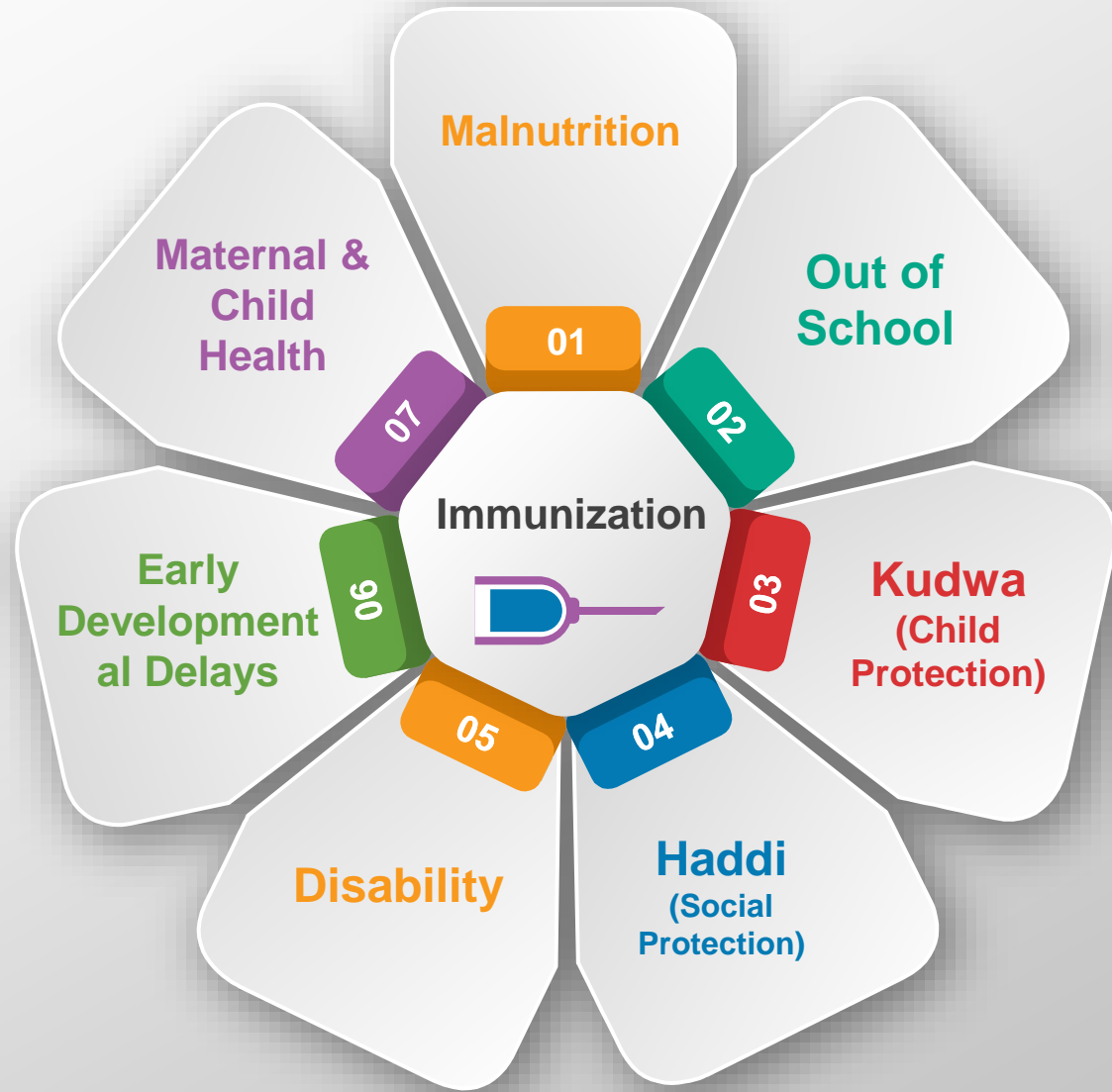
Vaccination at Community Level

Delivering vaccination at community level using mobile teams stationed at Municipalities, Public Buildings, Schools, Parks, ITS, Temporary Settlements etc.

Immunization as an Entry Point (IaEA)



Every child and parent/caregiver coming for vaccination at outreach sessions is also provided the following services (as appropriate)



Linkage with needed services at PHCC

Emergency Response (Cholera, Hep A, COVID-19)

Use of Digital Systems

Social and Behaviour Change

Nutrition

1. Malnutrition screening of children (6-59 months) – MUAC Tape
2. Referral linkage of identified malnourished children with PHCCs with treatment centres
3. Micronutrient Distribution

Education

1. Screening out-of-school children and localities with high numbers
2. Linking identified children for follow-up for school enrolment

Children with Disability

1. Vaccinating children with disability
2. Linking children with disability with relevant programs i.e. Corrective surgeries/prosthesis, schools, skill development etc

MNCH

Awareness of mothers/caregivers on breastfeeding, weaning, child care, identification and timely health seeking for basic child health disease etc.

ECD

1. Screening of young children on signs of developmental delay
2. Referring identified child with possible developmental delay for further examination and support

Social Policy

Most vulnerable children covered under Haddi (child grant) provided with age-appropriate vaccination and other integrated services thus ensuring program reach to most vulnerable communities

Health Emergencies

1. Cholera-related awareness, ORS distribution, and vaccine promotion
2. COVID-19 awareness, vaccine registration
3. Hep A outbreak- updating community of prevention

SBC

Utilizing the opportunity for Community Health Workers to interact on various health-related topics

IaEP- Achievements

Immunization

246,894 missed children and adolescents Vaccinated

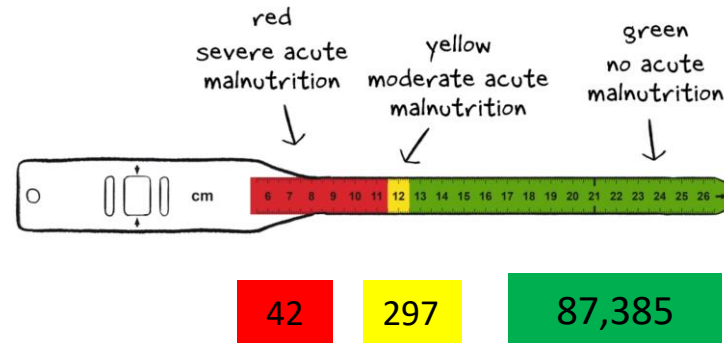


Out of School

1. Out of school children identified : **2,455**
2. Nationality: 278 (Lebanese), 2,167 (**Syrians**)

Data as of August 2023

Malnutrition



Children receiving Micronutrients : 4,640

Haddi (Social Assistance)

6,243 most vulnerable children covered under Haddi initiative provided with age-appropriate vaccination and other integrated services

Phased introduction of new interventions at different time periods



MNCH

798,125 caregivers reached with integrated messaging on Maternal, Newborn and Child health interventions

COVID-19

322,284 individuals reached with awareness generation related to prevention of COVID-19 and promotion of COVID-19 vaccination

Cholera

363,926 individuals reached with information related to Cholera prevention and control



Key Takeaways

Improving links between immunization program and other services (nutrition, education, ECD, MNCH) can support ensuring that each contact with a child for immunization acts as an 'entry point' for multiple other interventions in health and beyond health domains.

Integrated service delivery may reduce the costs of reaching hard-to-reach populations in the future

Well integrated healthcare systems are people centric, better responsive units, that can be easily leveraged for better outcomes during future pandemics

Every intervention has some unique pre-requisite to successfully reach the desired output however attempts should be made to create inter-linkages and gateways to connect the beneficiary with a host of other interventions



Thank You!

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