

Using Routine Immunization to Eliminate Measles & Rubella: Time for a change?

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What is Routine Immunization?

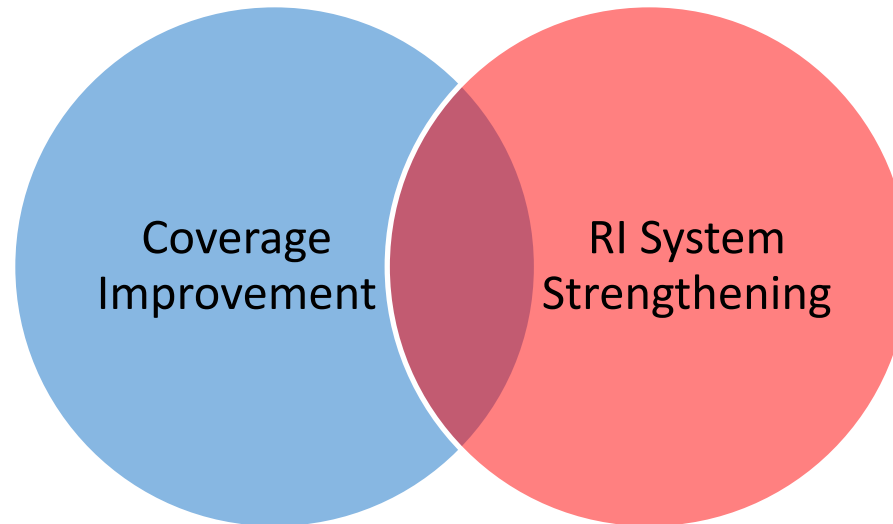
What is Routine Immunization?

Wiki Answers website

- **No standard definition**
 - **Hard to define**
 - **Means different things to different people**

What is Routine Immunization?

- **Coverage Improvement?**
 - **Global targets**
 - **90% national MCV1 coverage in all countries**
 - **80% MCV1 coverage in every district**
 - **Coverage improvement = RI system strengthening?**

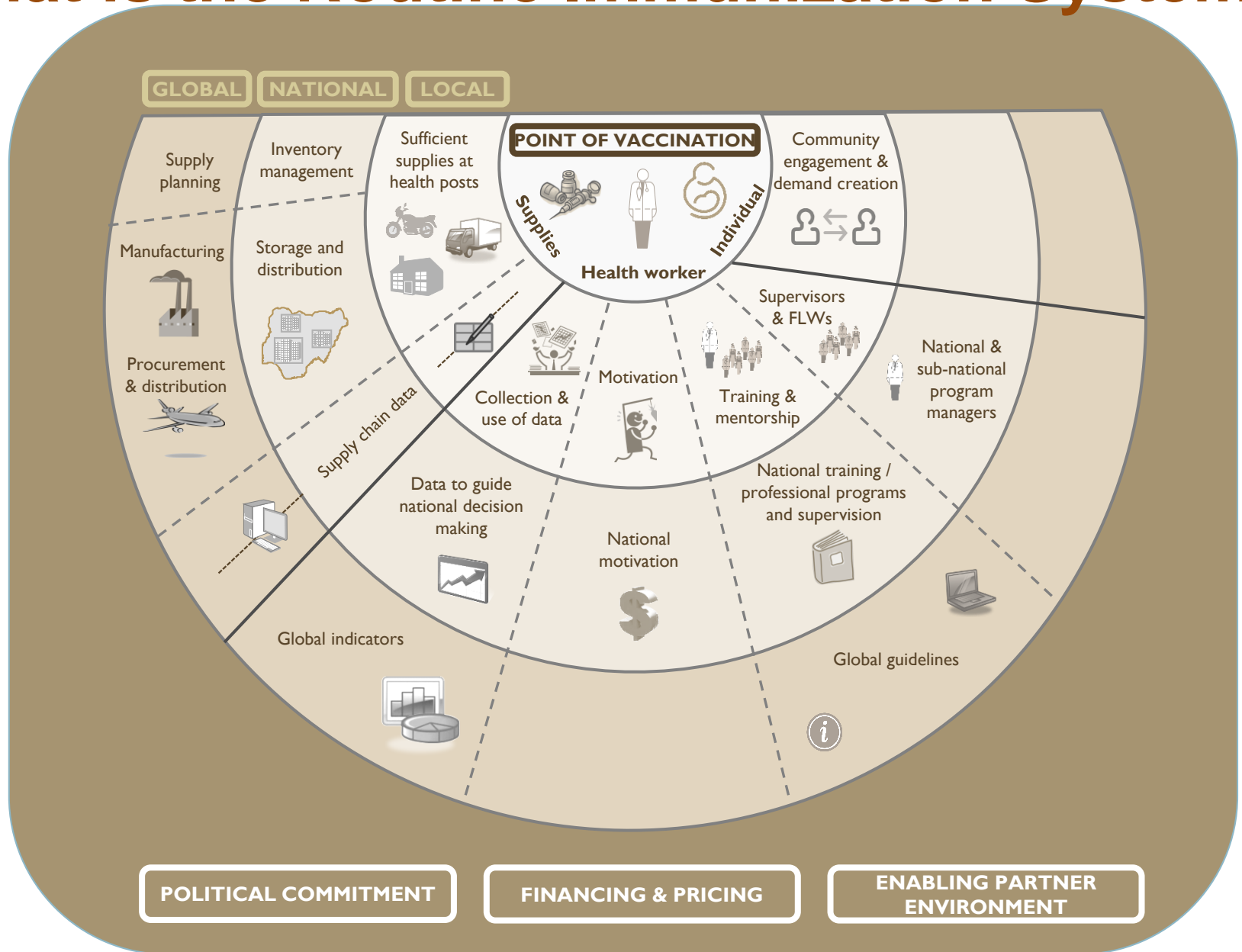


What is Routine Immunization?

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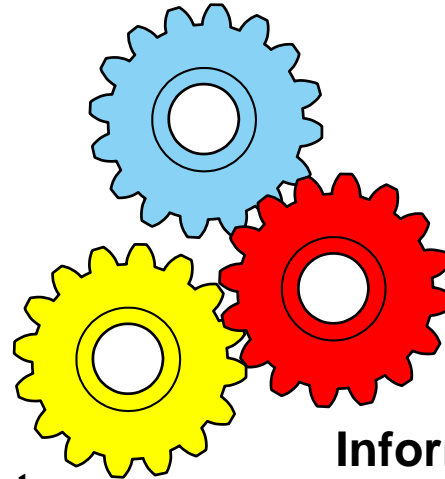
- No standard definition
 - Hard to define
 - Means different things to different people
- **Sum of human and logistical activities/events to ensure the regular delivery & uptake of vaccines & the monitoring of their positive & adverse impact**
 - Implies the "regular" delivery, i.e., known schedule, of EPI vaccines
 - **Fixed posts &/or outreach**
 - Part of a larger plan
 - Not time limited
 - Goal to provide needed vaccines to all eligible persons and to successive birth cohorts

What is the Routine Immunization System?



What is the Routine Immunization System?

Bring quality vaccine and supplies to vaccination site



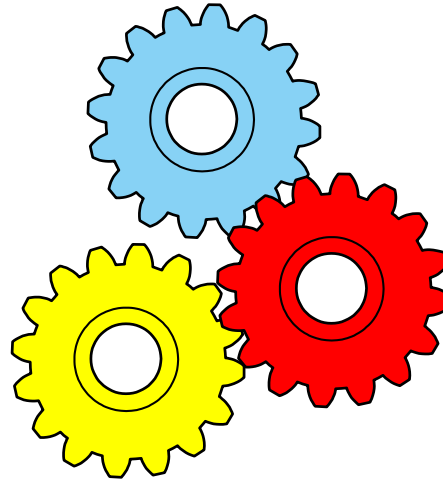
Bring trained vaccinators to vaccination site

Informed caregiver brings child to vaccination site



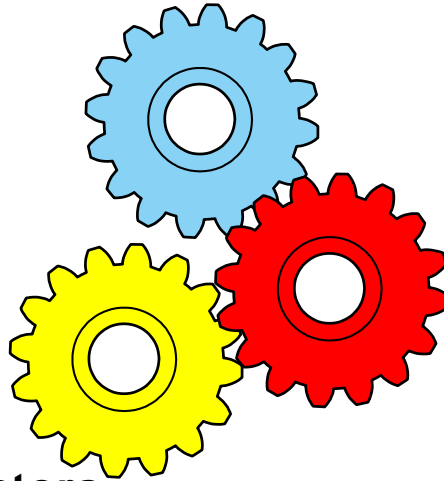
What is the Routine Immunization System?

Bring quality vaccine and supplies to vaccination site



1. **National procurement**
2. **Inventory management**
3. **Cold chain**
4. **Logistics / Distribution**
5. **Vaccine Forecasting**

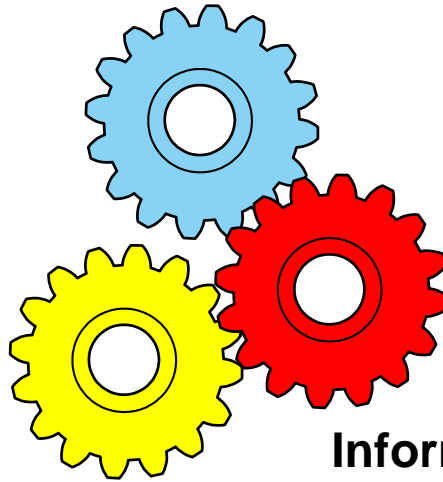
What is the Routine Immunization System?



**Bring trained vaccinators
to vaccination site**

- 1. Human resources**
- 2. Training / Mentorship / Capacity building**
- 3. Supervision**
- 4. Motivation**

What is the Routine Immunization System?

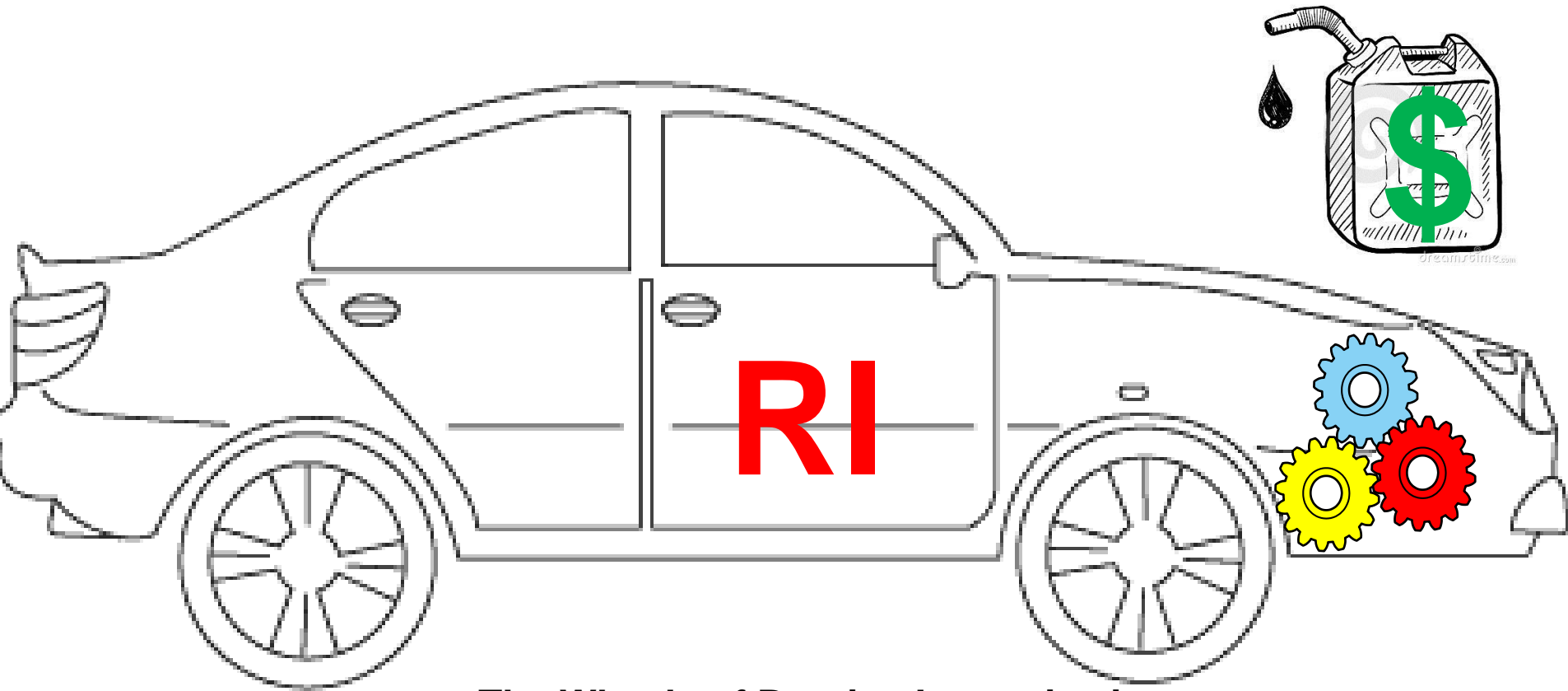


**Informed caregiver brings
child to vaccination site**

1. **Community engagement**
2. **Social mobilization**
3. **Communications**



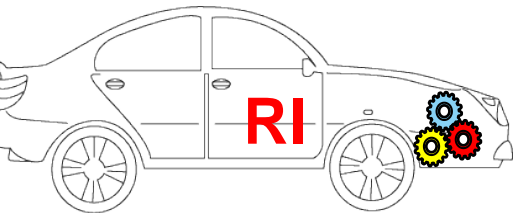
What is the Routine Immunization System?



The Wheels of Routine Immunization

1. Political commitment
2. Enabling partner environment
3. Monitoring and use of data
4. Planning and Management

What is the Routine Immunization System?



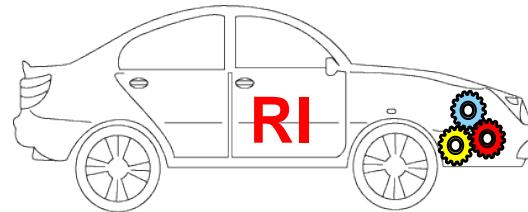
50%

80%

90%

The RI Road
(Coverage)

What is the Routine Immunization System?



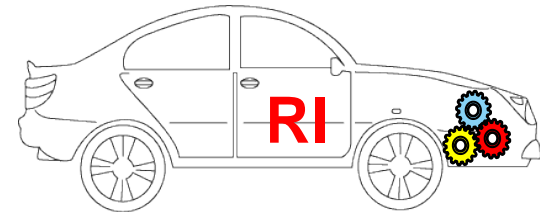
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**The RI Road
(Coverage)**

What is the Routine Immunization System?



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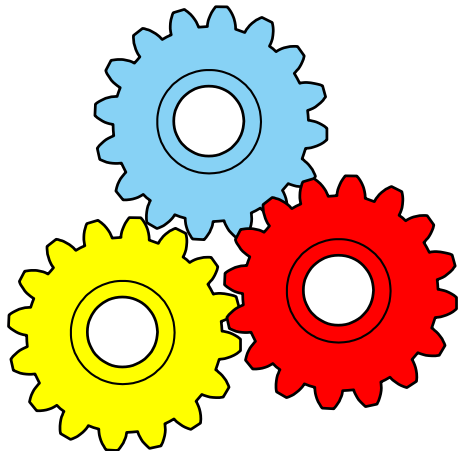
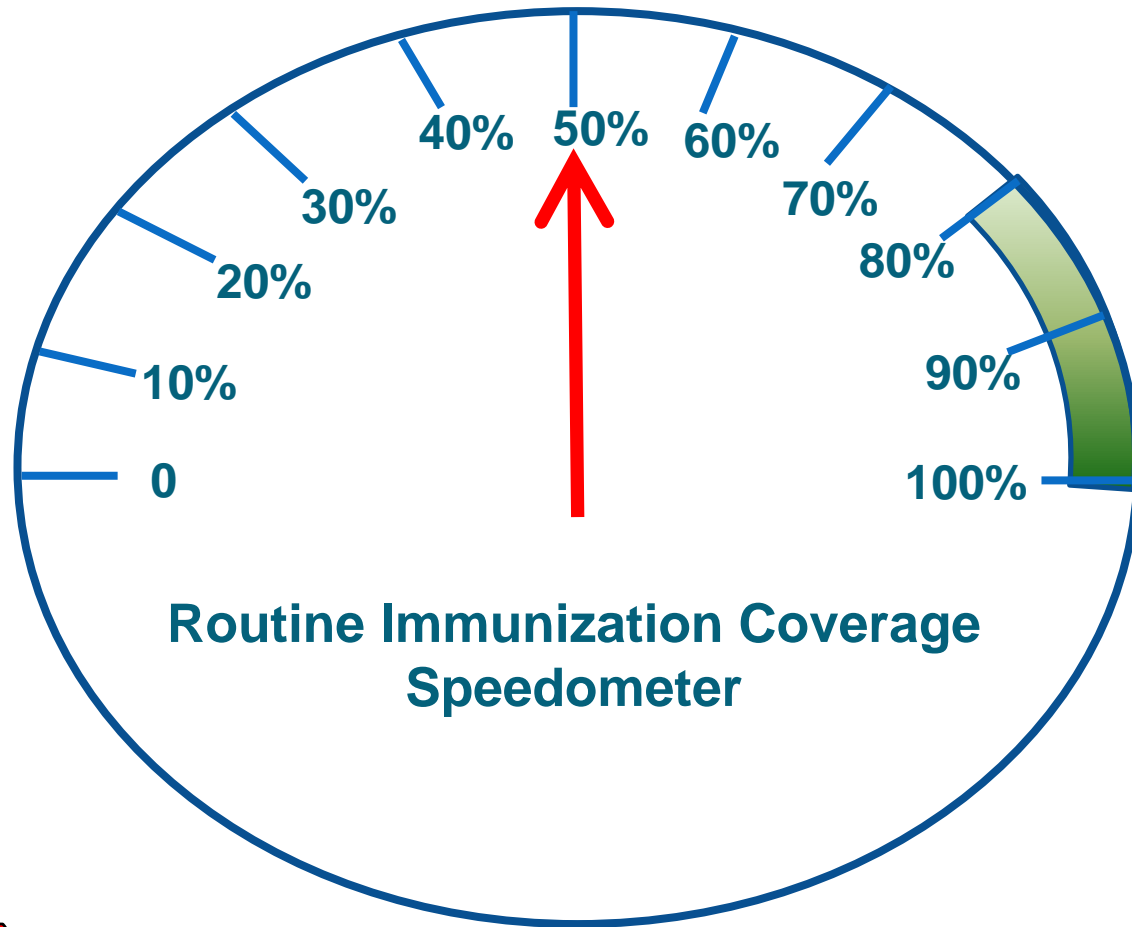
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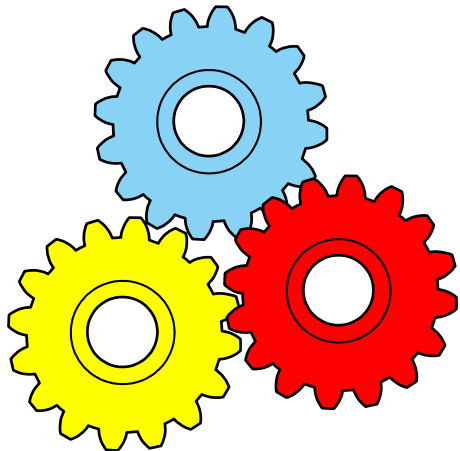
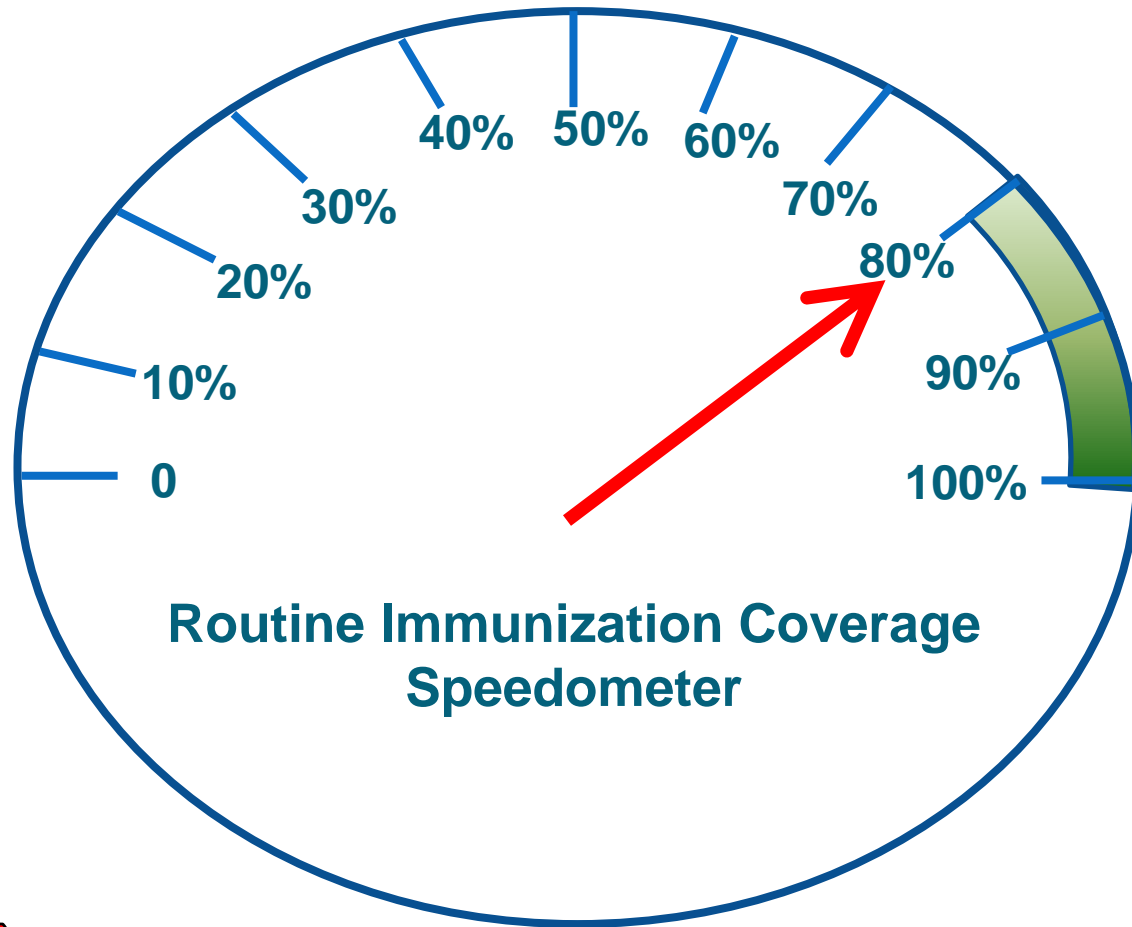
The RI Road
(Coverage)

RI coverage shouldn't be a destination or endpoint

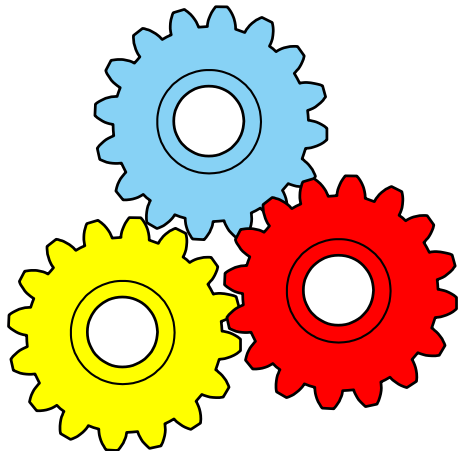
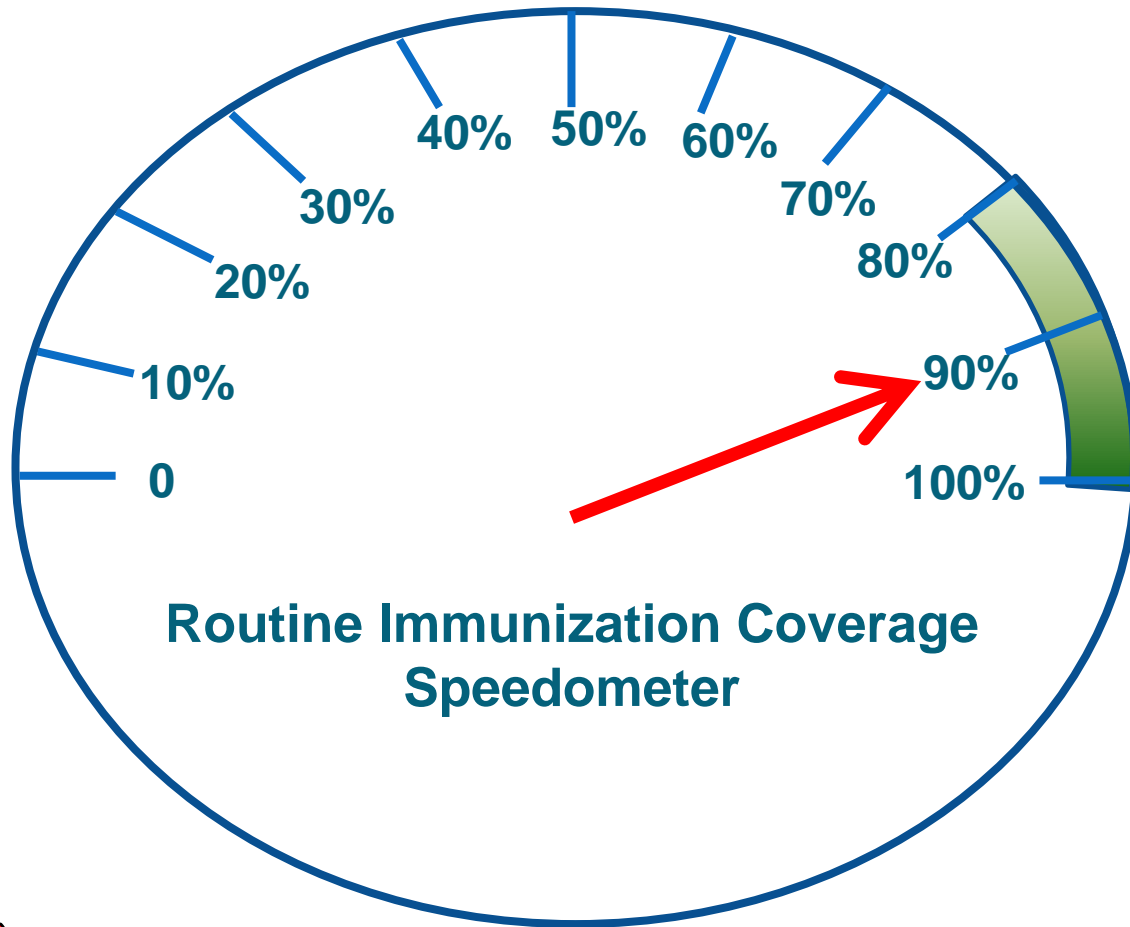
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What is the Routine Immunization System?



Goal is to ATTAIN and SUSTAIN RI coverage

Synergy between Routine Immunization and Measles & Rubella Elimination

**Measles/Rubella
Elimination**

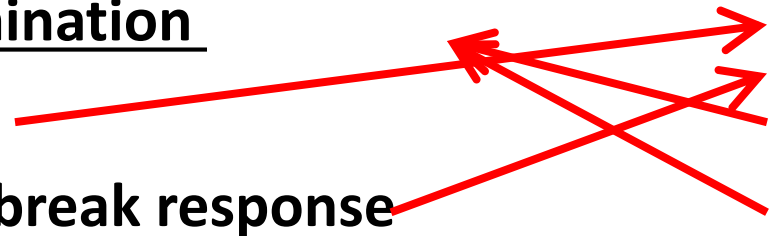
SIAs

Outbreak response


**Routine Immunization
Strengthening**

MRCV1

MRCV2



Challenges to Increase MRCV Coverage

- **Missed opportunities**
 - **Fear of wastage**
 - **Fear of stockout**
 - **False contraindications**
- 
- Reluctance to open vial**
- **Weak platform for vaccination in 2nd year of life**

Missed Opportunities

Policies/Practices

Measles vaccine on specific days to increase session size (weekly or monthly)

Require minimum number of children to open vial

Limit vaccinations to <12 month olds

Consequences

Missed opportunities (turn away children on other days?)

Missed opportunities (turn away children of smaller sessions)

Missed opportunities (turn away older children)

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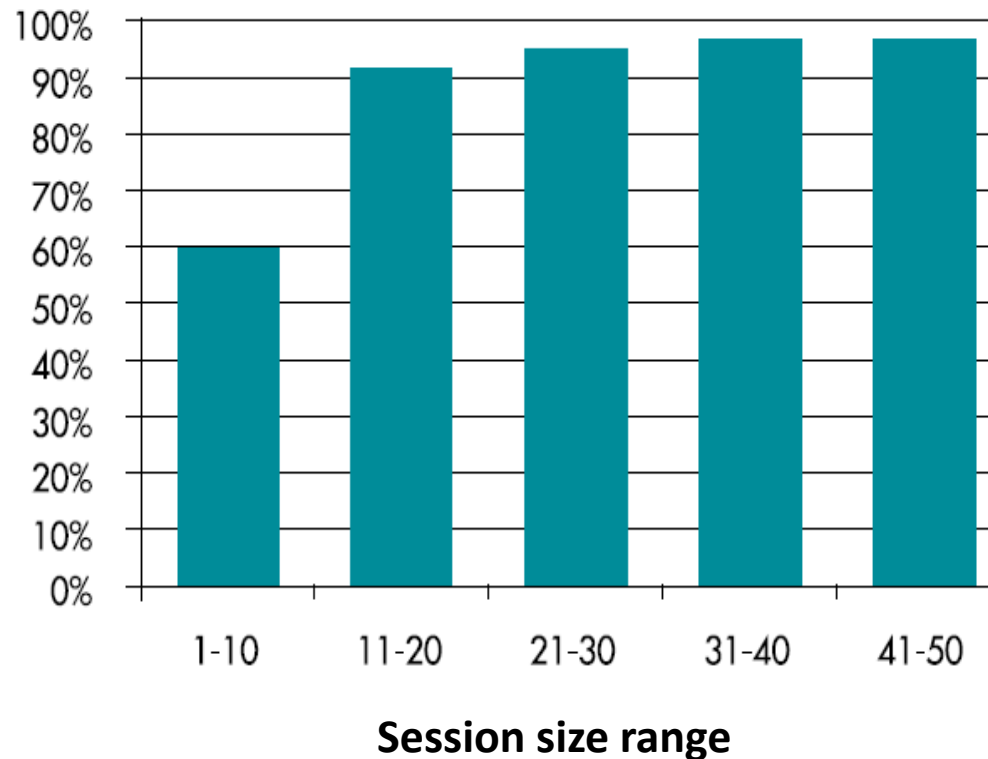
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Opening Vial: Impact on Coverage

Coverage by session size if health worker opens 10 dose vials only for sessions where $\geq 50\%$ of doses will be used (≥ 5 eligible children present)



Practices Related to Wastage

	<u>Cambodia</u> <u>(95% MCV1 coverage)</u>	<u>Nigeria</u> <u>(57% MCV1 coverage)</u>
Average measles vaccine wastage rate in health centers	58%	19%
Average number of children before opening measles vaccine vial	2.2	6.2
Proportion of parents saying they were turned away for vaccination	4%	30%

How to reduce the threshold to open a vaccine vial?

Source: unpublished data, 2011 Nigeria CDC/WHO/NPHCDA study, 2013 Cambodia WHO/CDC/MOH study in nationally representative samples of health facilities

Wastage and Vial Size

For 1 dose schedule

Vial size	Estimated wastage rate	Estimated wastage factor
Single dose	<5%	1.05
5 doses/vial	30–40%	1.43–1.67
10 doses/vial	45–60%	1.82–2.50

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- **Weak platform for vaccination in 2nd year of life**

Vaccination in 2nd Year of Life

Benefits to Stronger Platform in 2nd Year of Life

- 1) Higher coverage of second dose of measles-containing vaccine (MCV2) / DTP booster doses
- 2) Catch-up (higher coverage) of antigens offered in first year of life (*e.g.* DTP, MCV1)
- 3) Strong platform for newer vaccines (*e.g.* malaria)
- 4) Opportunities to integrate with other health interventions

MCV2 Schedules in 2012

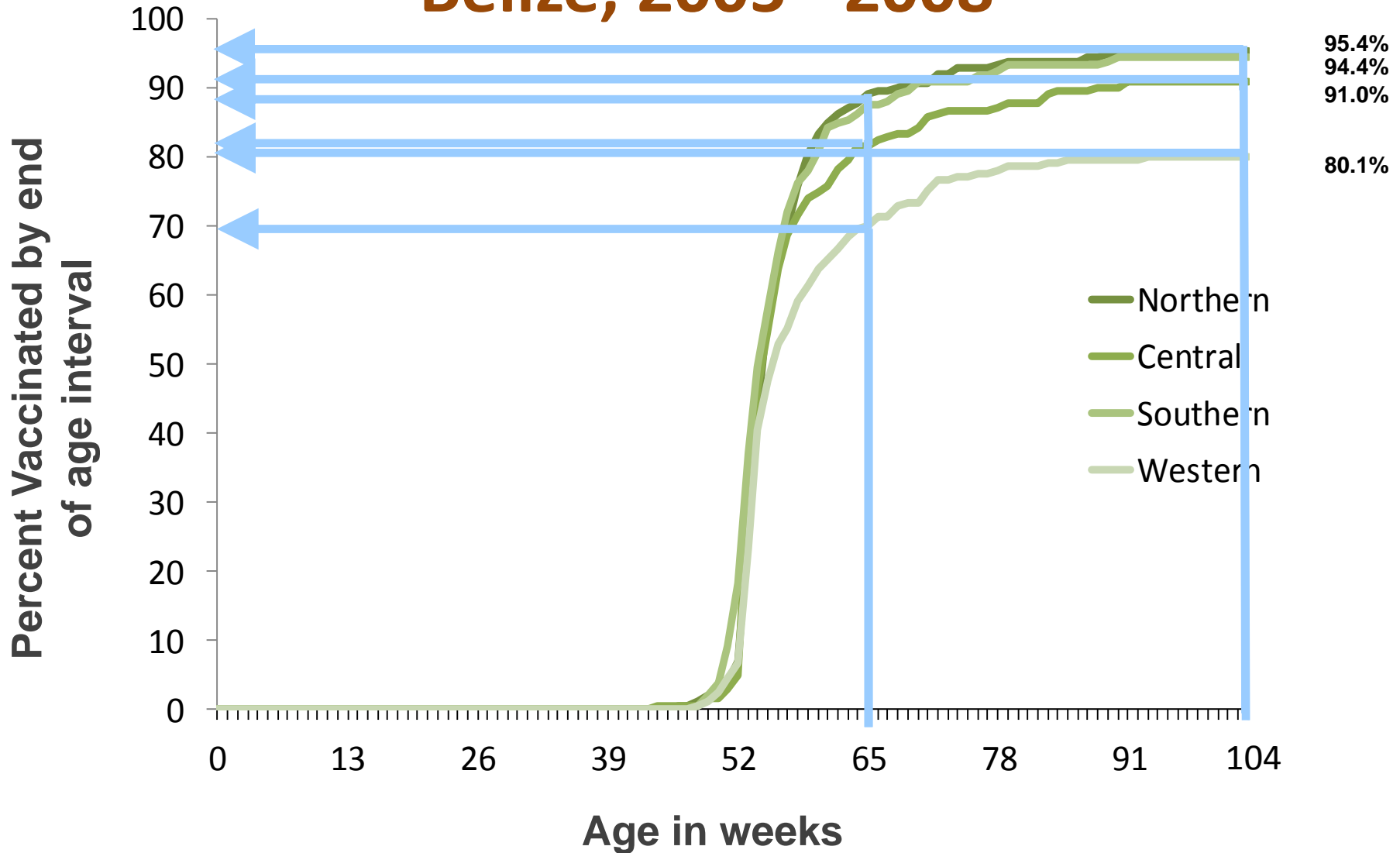
Region	Number of countries	Age of administration			
		No MCV2	≤2 years	3-7 years	>7 years
AFR	46	34 (74%)	9 (20%)	3 (7%)	-
AMR	35	4 (11%)	8 (23%)	23 (66%)	-
EMR	22	2 (9%)	17 (77%)	3 (14%)	-
EUR	53	0 (0)	6 (11%)	37 (70%)	10 (19%)
SEAR	11	2 (18%)	6 (55%)	3 (27%)	-
WPR	27	3 (11%)	13 (48%)	11 (41%)	-
Total	194	45 (23%)	59 (30%)	80 (41%)	10 (5%)

Vaccination in 2nd Year of Life

Benefits to Stronger Platform in 2nd Year of Life

- 1) Higher coverage of booster doses /second dose of measles-containing vaccine (MCV2)
- 2) **Catch-up (higher coverage) of antigens offered in first year of life (e.g. DTP, MCV1)**
- 3) Strong platform for newer vaccines (e.g. malaria)
- 4) Opportunities to integrate with other health interventions

MMR1 Coverage by Age and Region, Belize, 2005 - 2008



Vaccination in 2nd Year of Life

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- 3) **Strong platform for newer vaccines (*e.g.* malaria)**
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Benefits to Stronger Platform in 2nd Year of Life

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- 2) Higher coverage of antigens offered in first year of life (*e.g.* DTP, MCV1)
- 3) Strong platform for newer vaccines (*e.g.* malaria)
- 4) **Opportunities to integrate with other health interventions**

Vaccination in 2nd Year of Life

Challenges to Establishing Stronger Platform

1) Monitoring and accountability

- Should coverage for all vaccines be measured in 24-35 month olds in addition to 12-23 month olds?

2) Restrictive government policies

3) Poor recording/reporting for vaccinating in 2nd year of life

4) Need to improve vaccine forecasting (minimize stockouts)

5) Need to retrain and educate health workers

6) Need to increase awareness with communities

Summary

- **Strengthening routine immunization system is not equal to improving coverage**
- **Routine immunization system has multiple components working together to attain and sustain coverage**
- **To achieve measles and rubella elimination consider specific routine immunization issues affecting MRCV coverage**
 - **Reluctance to open vaccine vial**
 - **Platform for vaccination in 2nd year of life**

Thank you!

Wastage and 2 Dose Schedule

Vial size	For 1 dose schedule		For 2 dose schedule	
	Estimated wastage rate	Estimated wastage factor	Estimated wastage rate	Estimated wastage factor
Single dose	<5%	1.05	<5%	1.05
5 doses/vial	30–40%	1.43–1.67	15–25%	1.18–1.33
10 doses/vial	45–60%	1.82–2.50	25–35%	1.33–1.54

2012 Top 15 Unimmunized MCV1

21.2 million unimmunized globally

<u>Rank</u>	<u>Country</u>	<u>Coverage</u>	<u>Unimmunized</u>
1	India	74	6,371,156
2	Nigeria	42	3,760,114
3	Ethiopia	66	995,893
4	Indonesia	80	922,723
5	Pakistan	83	731,167
6	DR Congo	73	682,752
7	Philippines	85	349,873
8	USA	92	335,952
9	Afghanistan	68	314,077
10	Iraq	69	312,193
11	Uganda	82	269,810
12	Mali	59	263,527
13	Madagascar	69	232,913
14	Somalia	46	224,540
15	South Africa	79	222,200