

**TRAINING FOR IMPROVED PRACTICE:
Public Health and Nutrition in Emergencies**

Measles Control in Emergencies

**UNICEF Core Corporate Commitments Training In collaboration
with:**

**Feinstein
International
Famine Center,
Tufts University**

**Mailman School of
Public Health,
Columbia University**

**International Emergency
and Refugee Health Branch,
Centers for Disease Control
and Prevention**

Outline

- Control of measles
 - In world
 - In emergencies
- Case study, measles in Afghanistan
- Summary and questions

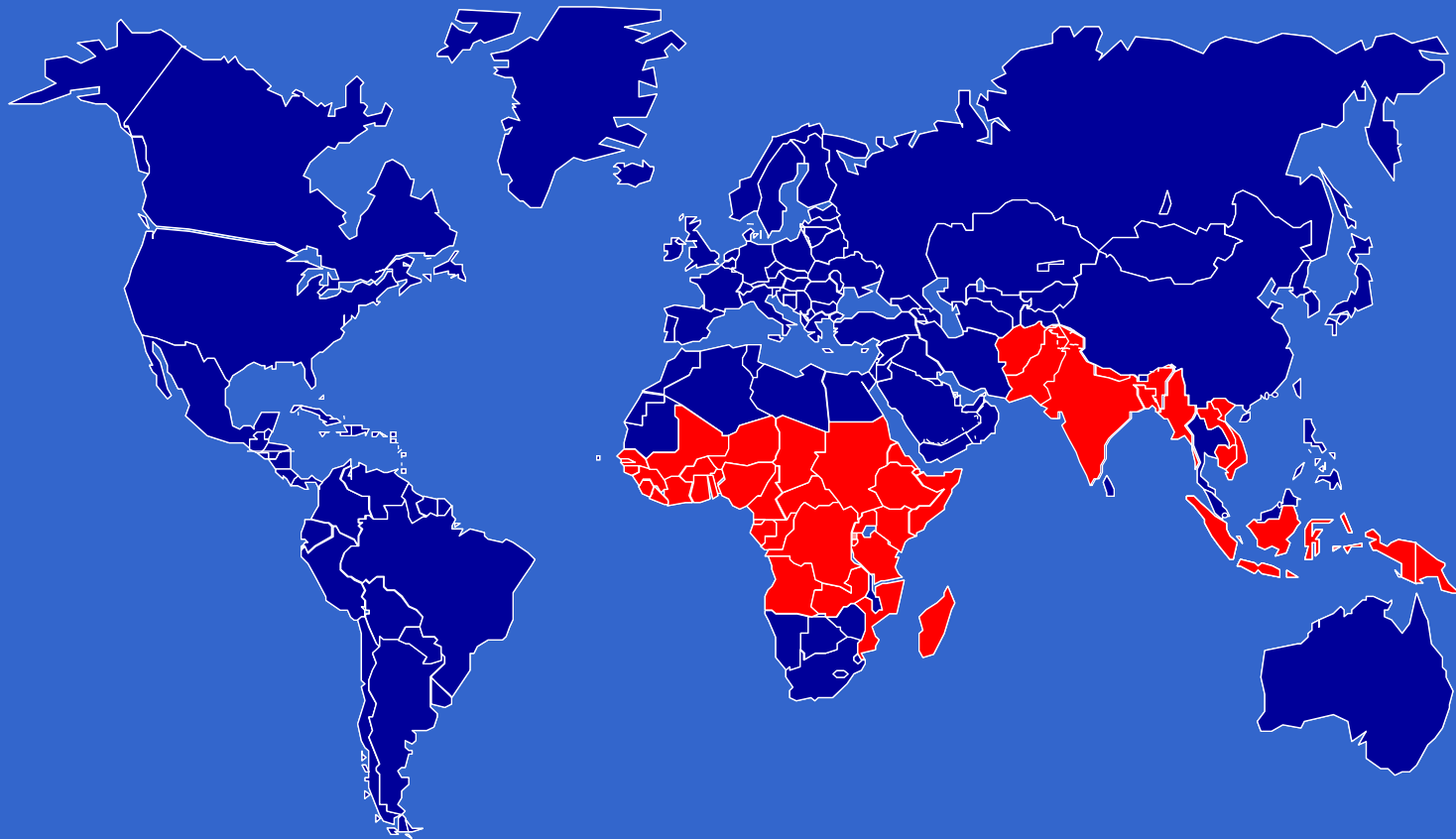
“ Immunization of children against measles is probably the **single most important** (and cost-effective) preventive measure in emergency-affected populations, especially those living in camps ”

M Toole and R Waldman,
Annu. Rev Public Health
1997;18-283-312

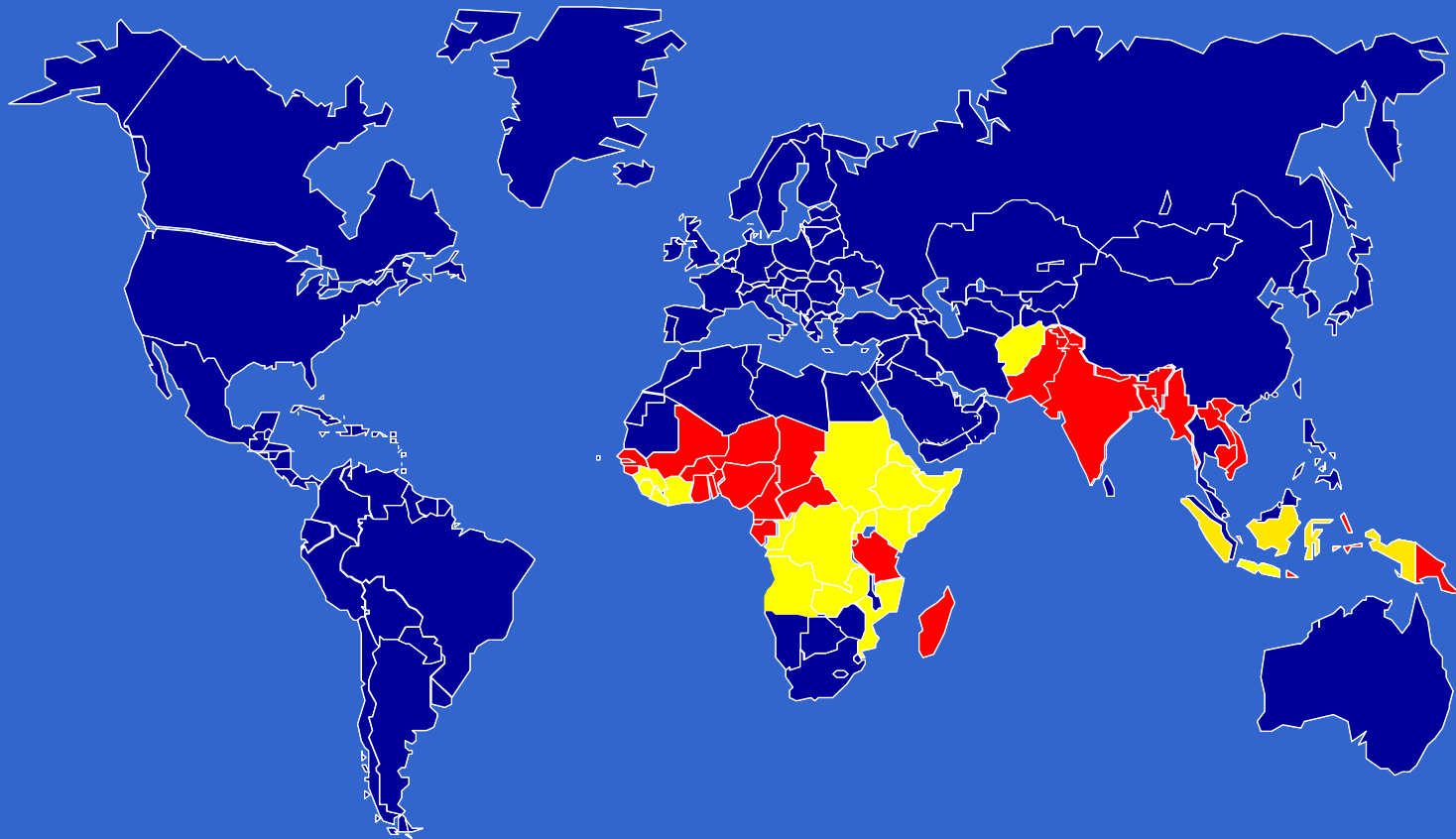
UNICEF Core Corporate Commitments in Emergencies

Provide measles vaccinations and critical inputs required, for example, vaccines, cold-chain equipment, syringes, training, and financial support for advocacy, and for the immunization of children between 6 months and 12 years of age among target population. A companion dose of vitamin A will be provided as requires.

Measles Mortality Reduction - 45 UNICEF/ WHO Priority Countries 2000



Measles Mortality Reduction - 45 UNICEF/ WHO Priority Countries 2000



Emergency countries with high measles mortality



Other countries with high measles mortality

What factors increase measles mortality in emergencies?



Measles – Risk factors

- Risk factors for severe disease
 - Malnutrition
 - Vitamin A deficiency
 - Exposure to higher infectious dose
 - Poor access to case management of complications
 - Young age (6-9 months)
 - HIV infection



Measles - CFR

In emergencies what case fatality ratios have been reported?

Stable populations: 1-10%

Emergencies: 2-21% (up to 33% reported)

Measles – Preventing illness and death in emergencies

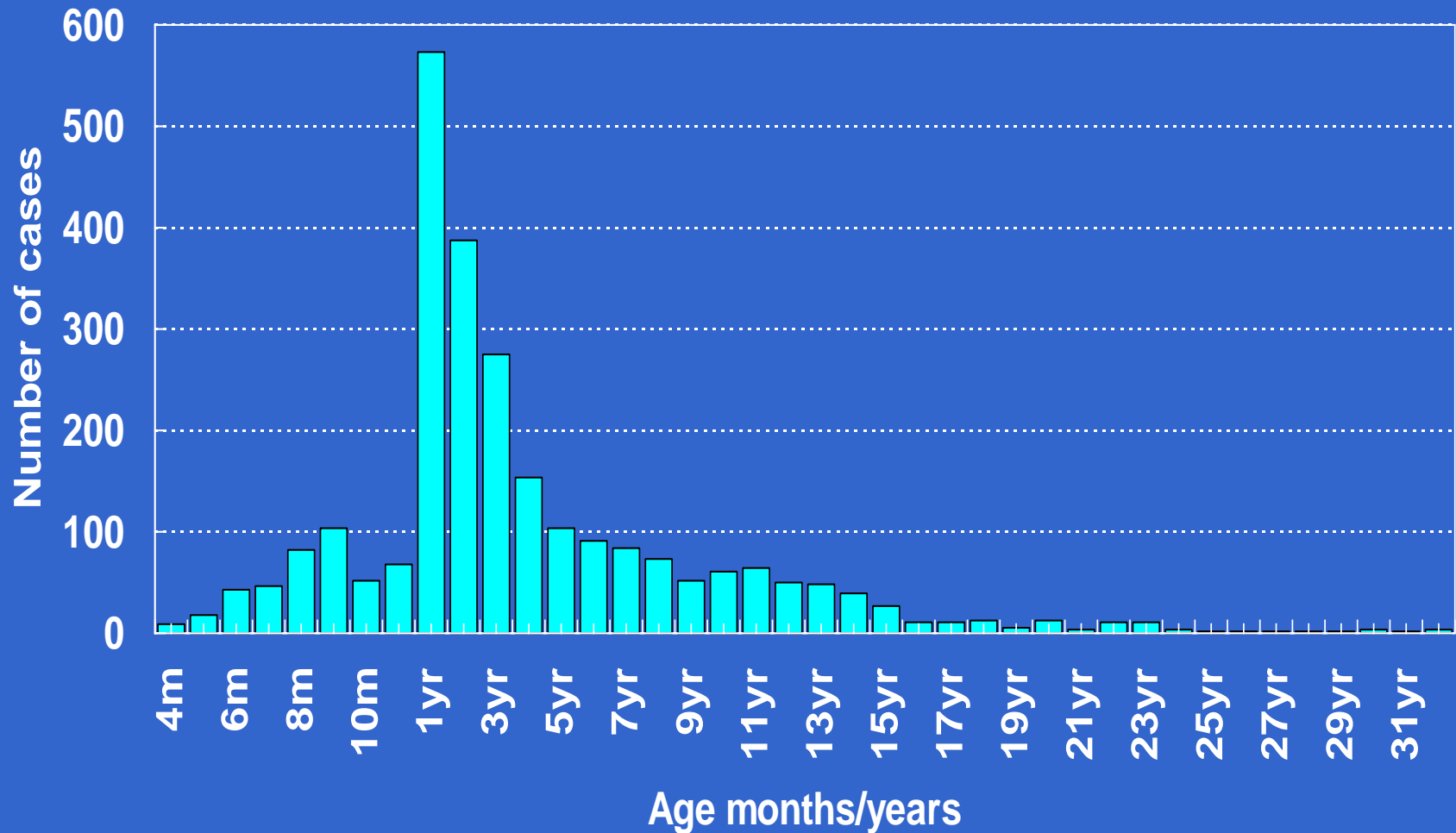
How to prevent illness and death

- Vaccination
 - **Mass campaigns in emergencies!**
 - Routine childhood vaccination
- Appropriate treatment of illness
 - Vitamin A
 - Antibiotics for bacterial superinfections
 - Rehydration for diarrhea

Measles - Targeted age group in campaigns

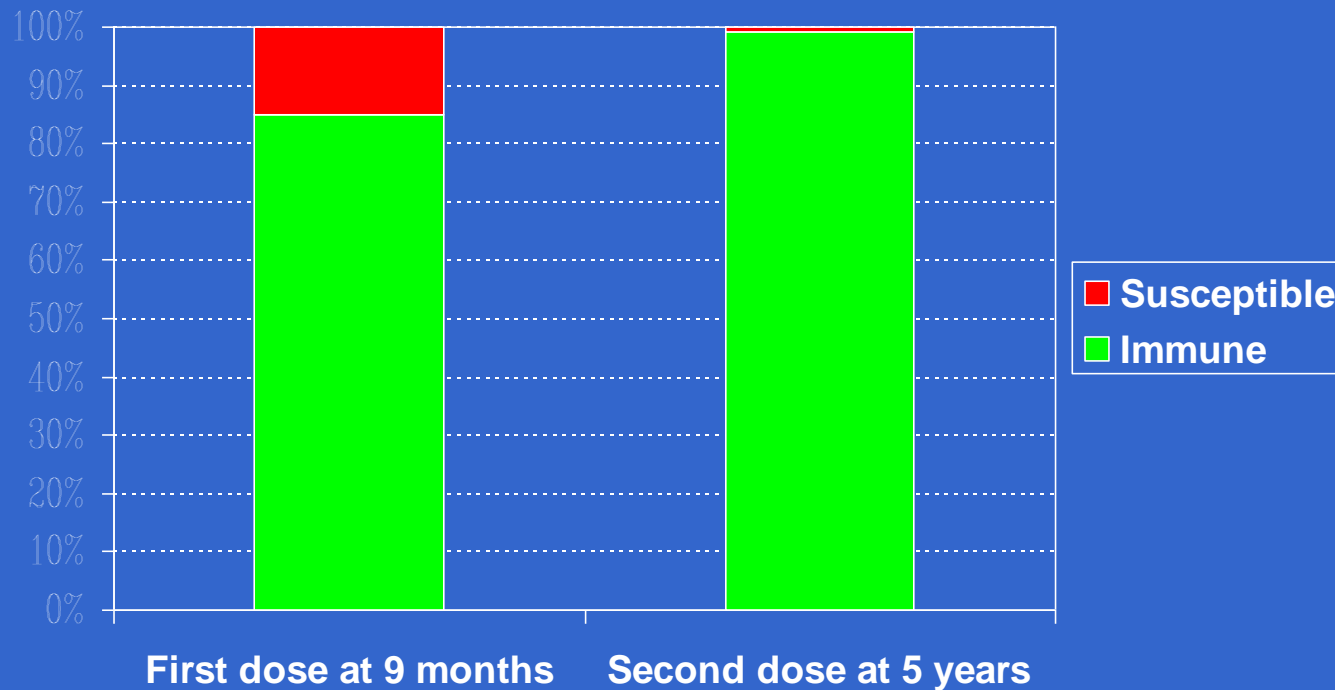
- The preferred age group for measles campaigns during emergencies is 6 months to 14 years of age
If not possible: at minimum 6 months to 59 months of age
- Final decision on the target age group must be made locally, based on:
 - Vaccine availability
 - Funding
 - Human resources
 - Local measles epidemiology

Measles Cases by Age Group, Angola, 1999 - 2001 (N=2,611)



Why a Second Dose?

- Measles vaccine efficacy at 9 months = 85%
- Measles vaccine efficacy at 15 months = 95%



The UNICEF - WHO Tango



Source Brad Hersh

UNICEF



- Kids are dying from measles
- Measles vaccination a core UNICEF commitment
- We can raise money quickly
- We can immediately prevent measles deaths by doing a mass campaign
- We can re-invigorate routine EPI
- May not be sustainable, but it will prevent many deaths NOW

WHO



- Campaign requires good planning
- Need good infrastructure
 - Cold chain
 - Human resources
 - Injection safety
- Must be high quality, high coverage
- Campaign alone not sustainable
- Synergy with polio eradication activities

The WHO - UNICEF Two Headed Emergency Monster



**WHO
Brains**

**UNICEF
Legs**

Priority Intervention

Joint WHO - UNICEF Strategies to Impact Measles Mortality in Emergency Countries

- Measles, diarrhoea, acute respiratory infections, malaria, and malnutrition are the major killers in emergencies
- Measles is the only condition that can be prevented by using currently available vaccine
- Measles immunization in combination with vitamin A supplementation is one of the priority public health interventions in emergencies

Rapid Response

Joint WHO-UNICEF Strategies to Impact Measles Mortality in Emergency Countries

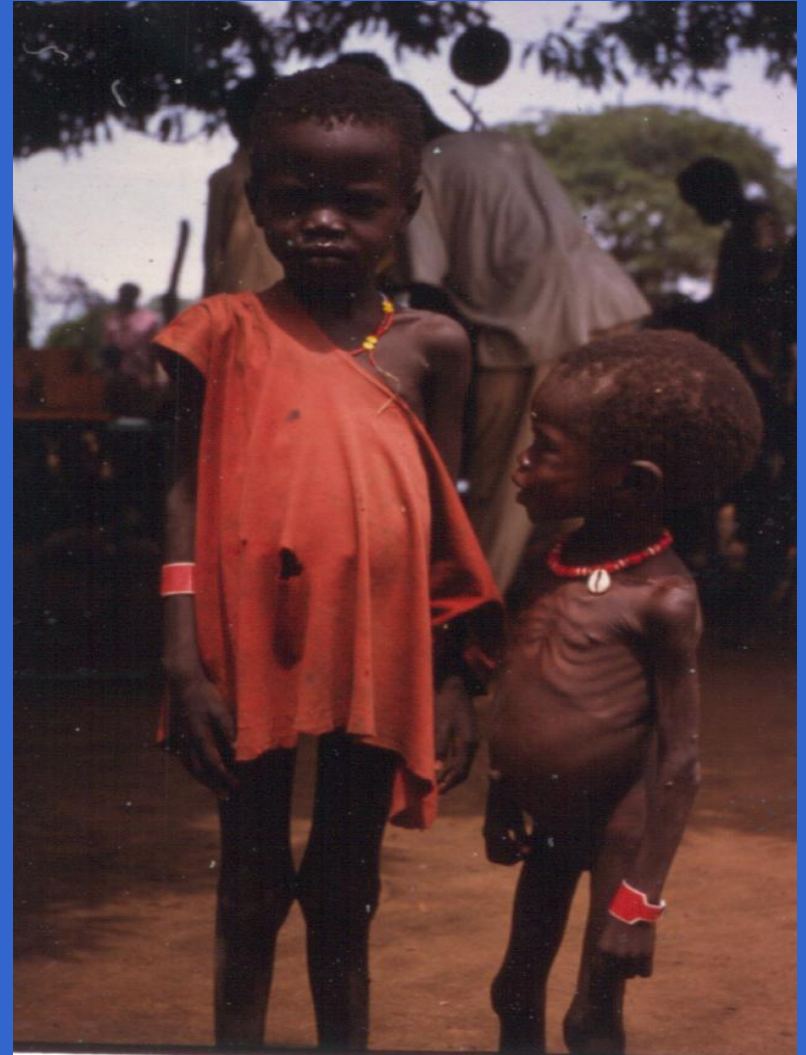
- Measles Control Plan will be developed and implemented as rapidly as possible while ensuring high quality in coverage, cold chain / logistics, and immunization safety

Leadership

- WHO and UNICEF will jointly promote and support nationwide measles control activities
 - with local authorities, the UN country teams and the broader humanitarian community, including NGOs, the Red Cross Movement and donors
 - the ultimate goal should be the implementation of sustainable measles mortality reduction strategies.

Key messages

- Measles kills
- First: Campaign in camps and IDP
- Followed by nation wide campaign
- Age group 6 months - 14 years
- IMMEDIATELY
- It WORKS



Mass campaigns - Note on Calculating Supply Needs

- Calculating the loss factor
- If you have 100 children and your vaccine wastage is 15% how many doses do you need?

$$0.85 \times \text{Doses} = 100$$

$$\text{Doses} = \frac{100}{0.85}$$

Monitoring a measles campaign

- Monitoring injection safety
- Monitoring cold chain
- Monitoring adverse events
- Searching actively for missed children
- Appropriate disposal of contaminated sharps

Adverse events

- Fever 5-15%
- Rash 5%
- Thrombocytopenia 1:30,000 doses (MMR)
- Encephalopathy ~1:1,000,000 doses
- Anaphylaxis ~1:1,000,000 doses
- Allegations (not proven): IBD, autism

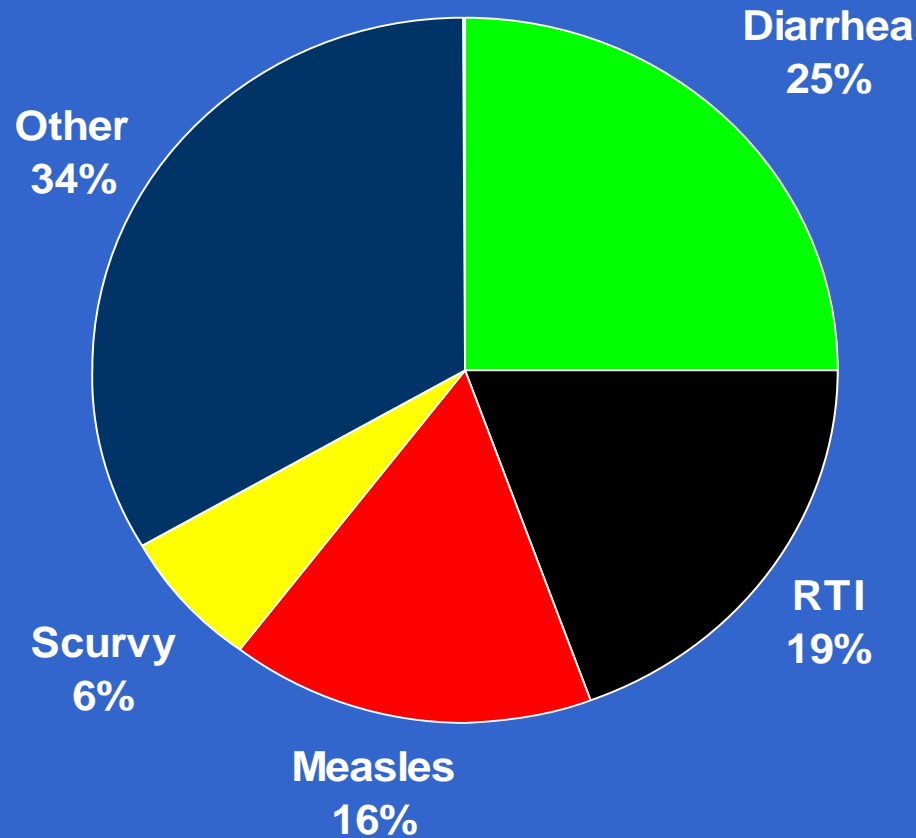
After the campaign: routine EPI

- Vaccinating all newcomers
- Establishing routine EPI
- Tracking and revaccinating at 9 months those vaccinated at 6-9 months
- Screening/vaccinating
 - at feeding centers
 - at health centers
 - at feeding centers

Introduction to Afghanistan measles case study:

The measles situation in 2001

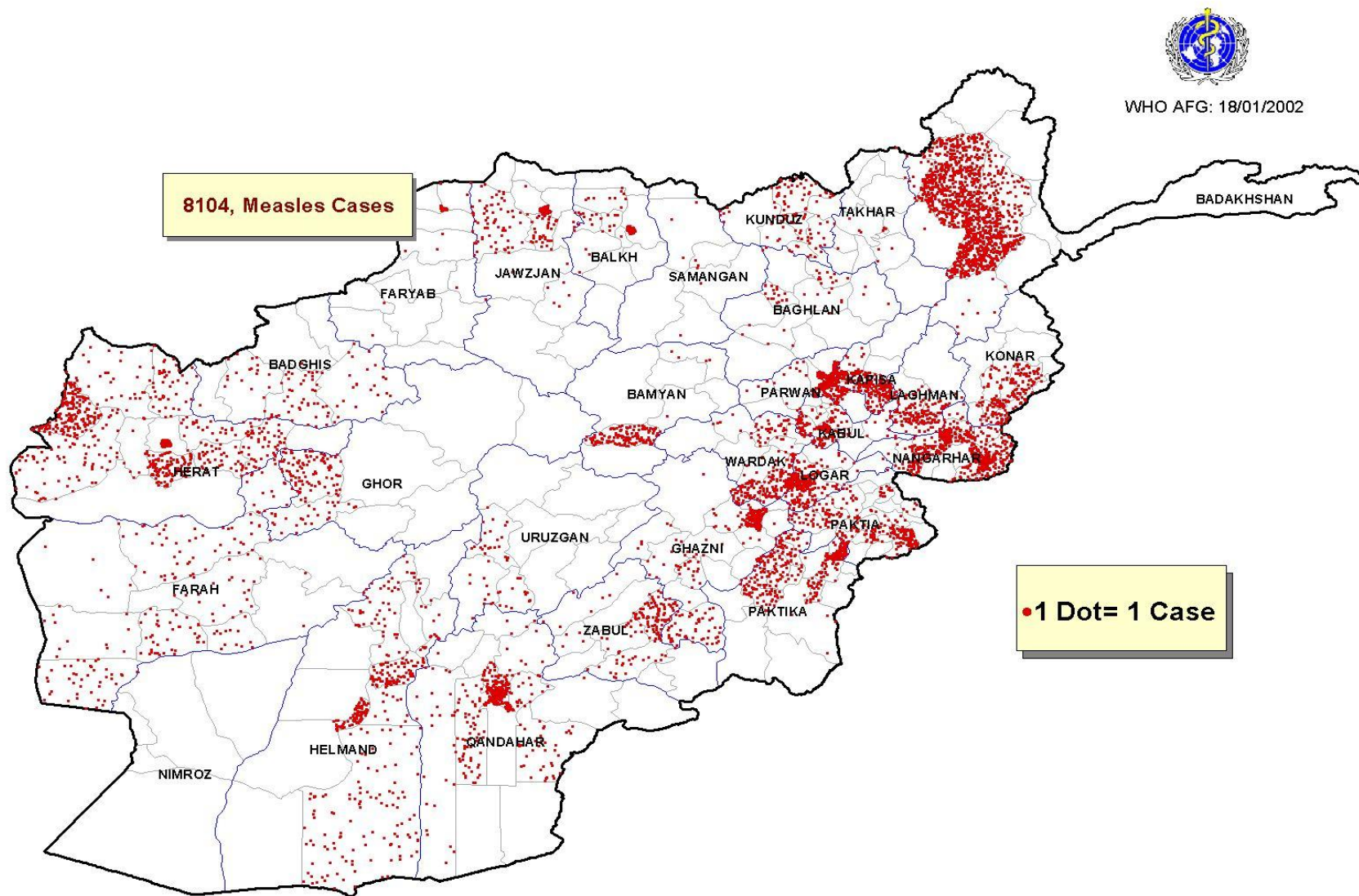
Causes of death in Kohistan Province Afghanistan, April 2001



N=108

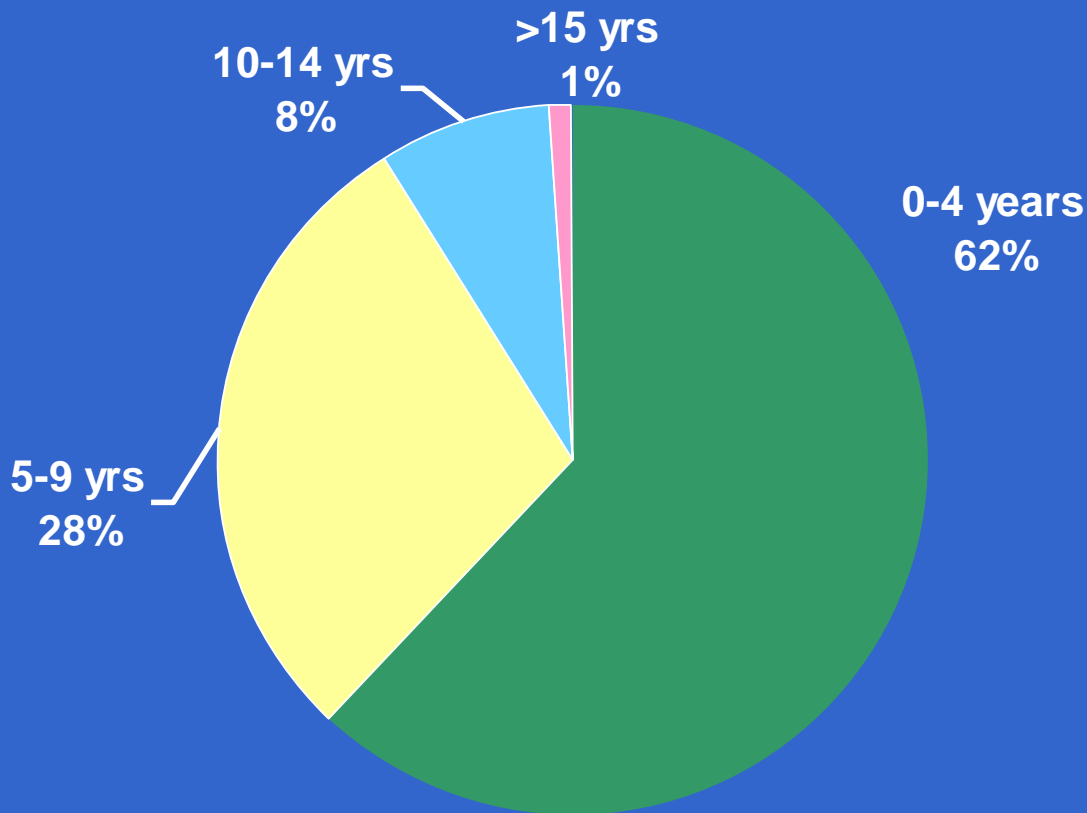
Source: SCF US / CDC

Reported Measles Cases in Afghanistan, 2001

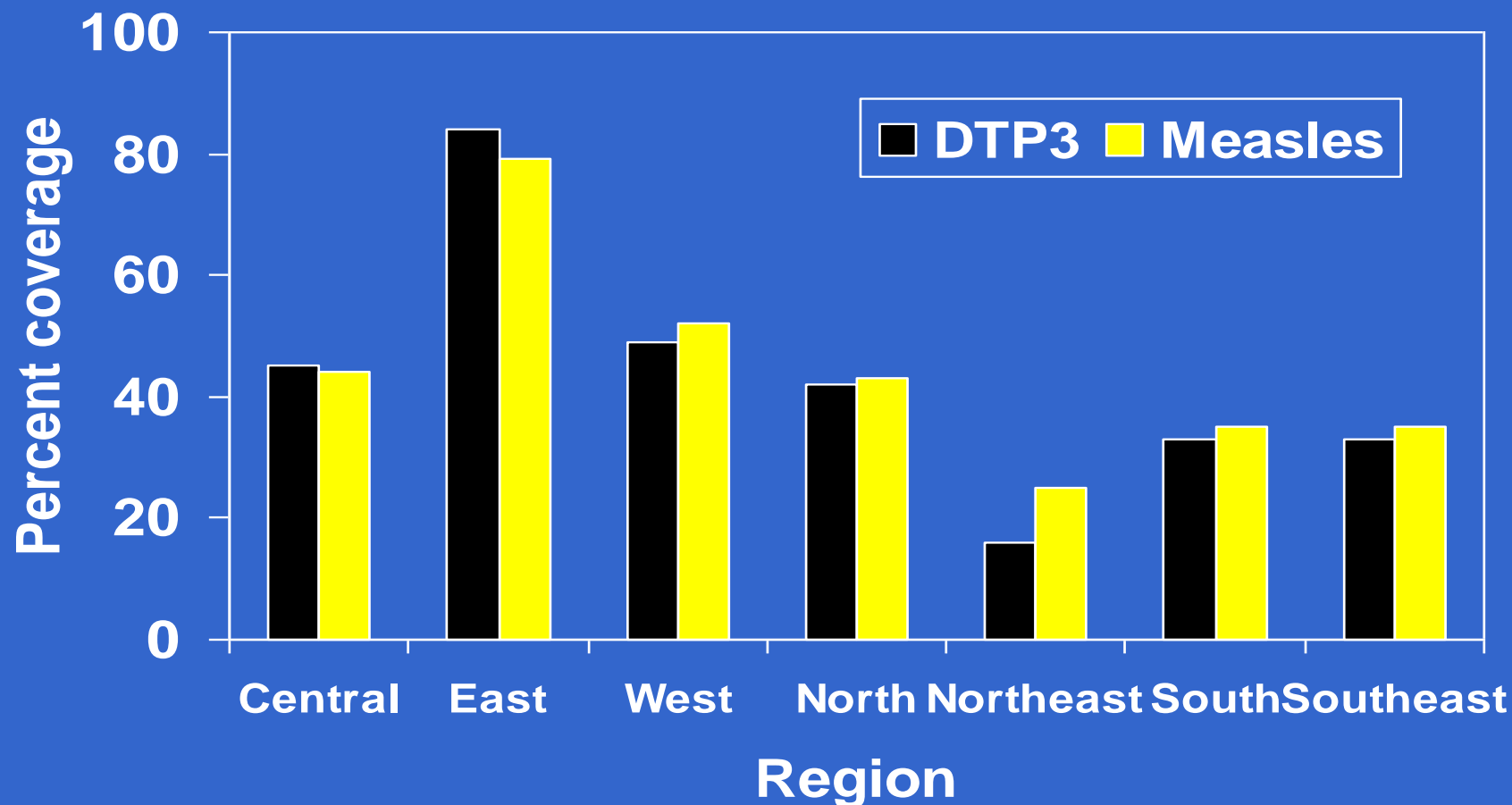


Measles Epidemiology in Afghanistan

**Age distribution of reported measles cases,
Afghanistan 2001(N=8,720)**



Routine EPI Coverage in Afghanistan January-December 2001, Children 0-11 Months



Afghanistan Measles Case Study



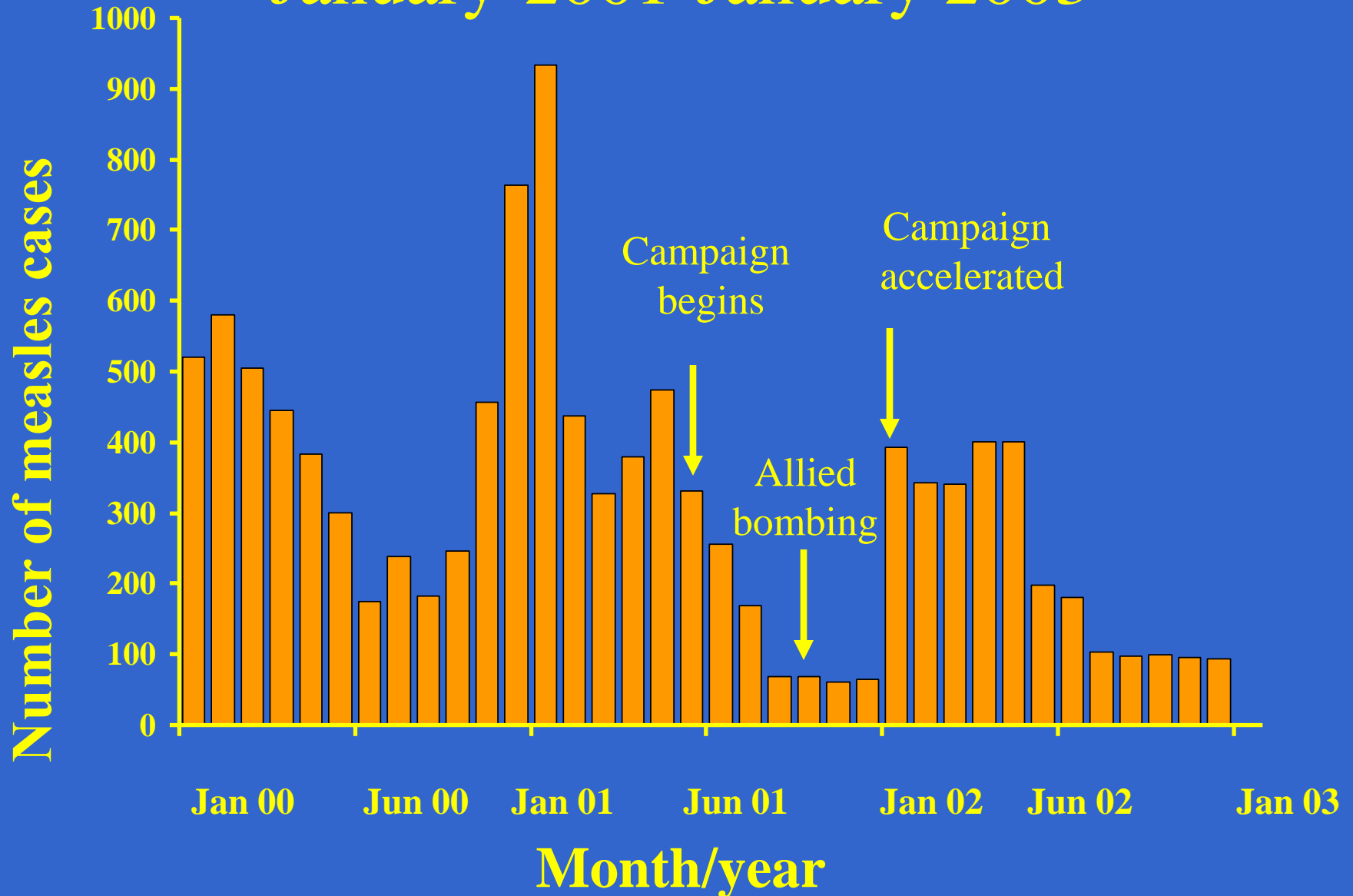






Reported measles cases, Afghanistan

January-2001-January 2003



Summary

- Measles Kills
- ACT IMMEDIATELY
- Age group 6 month - 14 years
- Target most vulnerable
 - camps and IDP population
 - don't forget host population
- Add vitamin A
- It WORKS