

TRAINING FOR IMPROVED PRACTICE:
Public Health and Nutrition in Emergencies

Health Surveillance in Complex Humanitarian 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**

Methods of Data Collection

	Assessment	Survey	Surveillance
Objective	Rapid appraisal	Medium-term appraisal	Continuous appraisal
Data Type	Qualitative/ Cross sectional snapshot	Quantitative/ Cross sectional snapshot	Quantitative/ Longitudinal trends
Method	Observational / Secondary source	Sample with survey instrument	Periodic, standardized data collection

Health surveillance in Emergencies: UNICEF's Interests

- **UNICEF often acts on results of surveillance**
- **UNICEF supports training for health workers; training includes surveillance**
- **UNICEF has mandate for host population**
- **Community based social mobilization and health education play a key role in surveillance**
- **UNICEF has advantage in the early response phase – is already operational in many countries**

Health surveillance - Definition

Ongoing, systematic collection, analysis and interpretation of health data essential to the **planning, implementation and evaluation of public health practice**, closely integrated with the **timely dissemination** to those who need to know.

-CDC

Health surveillance in emergencies

One over-riding principle

**ONLY COLLECT DATA WHICH ARE
USEFUL AND CAN BE ACTED UPON
IN THE FIELD!!!**

Objectives of a surveillance system

- **To determine main health problems requiring intervention**
- **To follow trends in health status in order to revise health priorities**
- **To target resources to area of greatest need**
- **To detect and respond rapidly to epidemics**
- **To evaluate program effectiveness**
 - coverage
 - quality of care
 - impact

Types of data collected in surveillance systems in emergencies

- **Mortality**
- **Morbidity**
 - diseases of public health importance
 - diseases of epidemic potential
- **Nutritional Status**
- **Programme Indicators**
- **Indicators of the quality of the system itself**

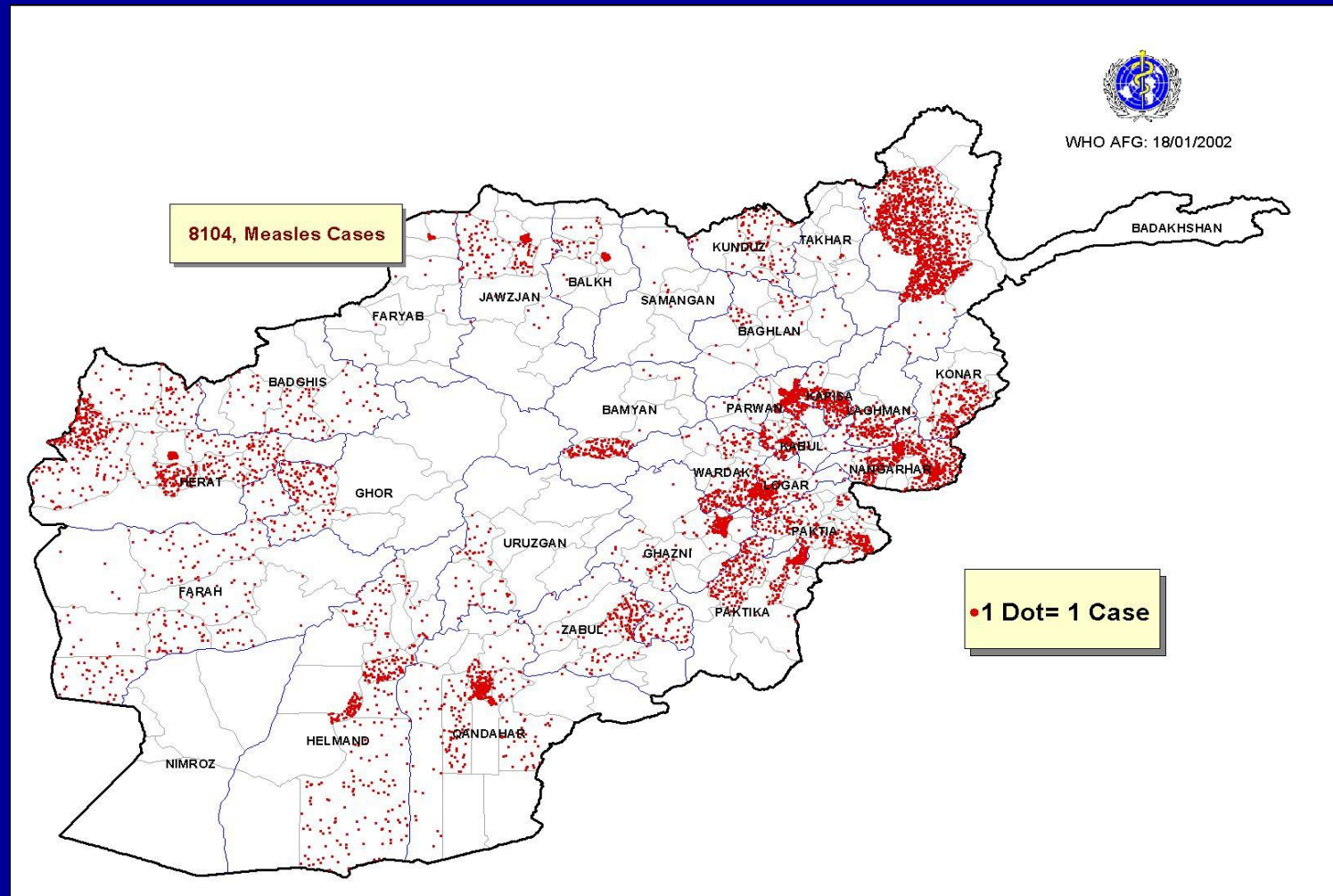
Principles of health surveillance in emergencies

- **Involve all health agencies and facilities**
- **Use simple standardized case definitions**
- **Use a simple standardized data collection form**
- **Collect data regularly (daily, weekly, or monthly)**
- **If possible, augment clinic-based surveillance with community-based surveillance**
- **Analyze data and provide timely feedback**
- **Triangulate when possible**

Types of surveillance

- **Passive**
- **Active**
- **Sentinel**

Reported Measles Cases from 328 WHO Sentinel Surveillance Sites in Afghanistan, January – December 2001



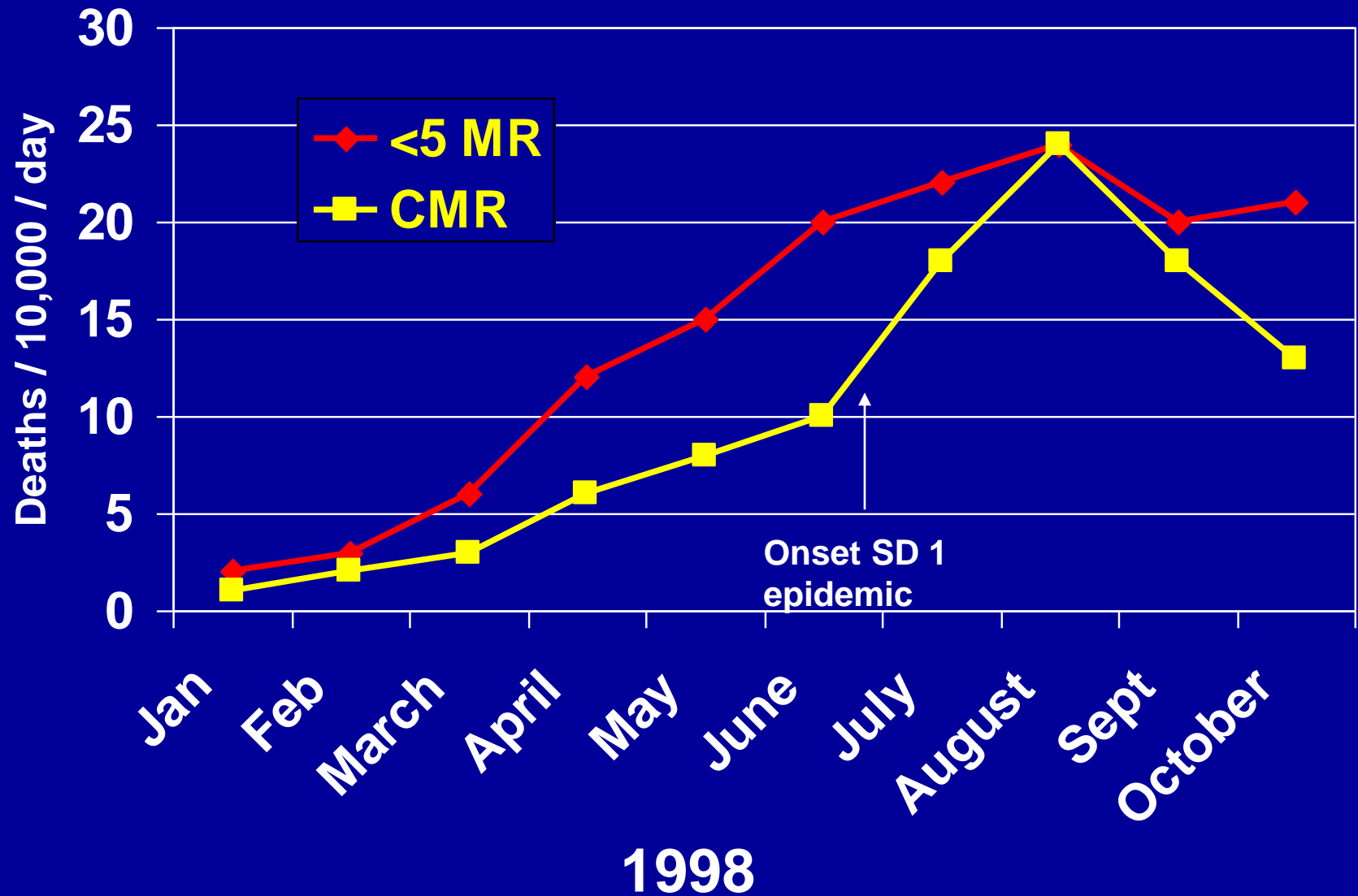
Mortality surveillance

- **Potential data sources**
 - Hospitals / clinics
 - Community and religious leaders
 - Burial grounds
 - Shroud distribution
 - Body collectors
 - Other sources
- **Limitations**
 - Deaths under-reported
 - Exaggerated
 - Concealed
 - Denominator inflated

Health surveillance - Mortality form

No. of deaths	0-4 yrs		5+ yrs		Total
	males	females	males	females	
Watery diarrhea					
Bloody diarrhea					
Suspected cholera					
Respiratory tract disease					
Measles					
Malaria					
Maternal death					
Suspected meningitis					
Other/unknown					
Total by age and sex					
Total <5 yrs					

Mortality data from Ajiep, Bahr el Ghazal, southern Sudan



Health surveillance – Morbidity form

Diagnosis	0-4 yrs		5+ yrs		Total
	males	females	males	females	
Watery diarrhea					
Bloody diarrhea					
Suspected cholera					
Respiratory tract disease					
Measles					
Malaria					
Suspected meningitis					
Skin disease					
Sexually transmitted infections					
Trauma/accident					
Other/unknown					
Total by age and sex					
Total <5 yrs					

Health surveillance - Case definitions

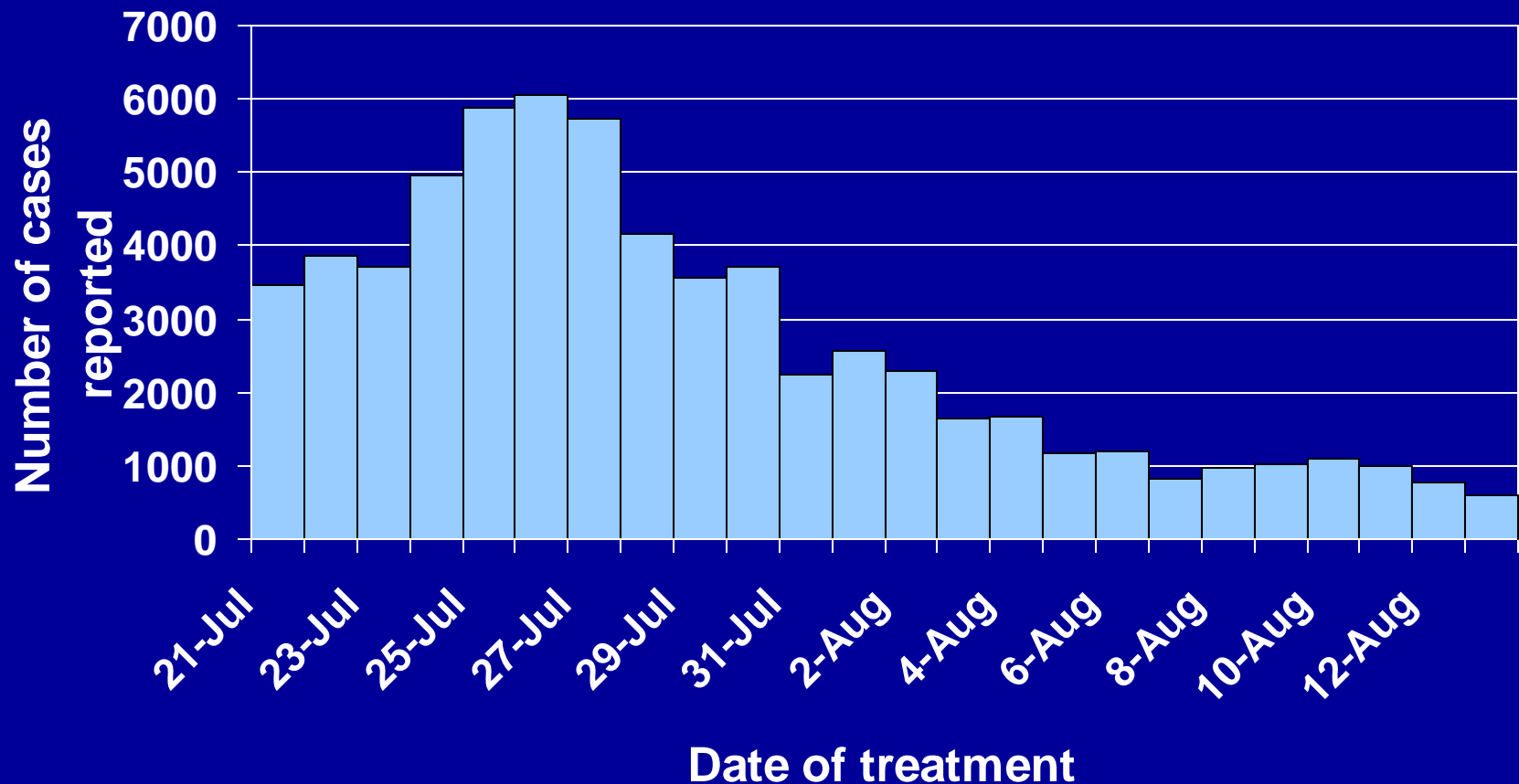
Examples of some simple case definitions:

- **Malaria:** Temp >38.5 C and absence of other infection; OR fever and periodic shaking, chills
- **Measles:** generalized rash lasting >3 days and temp >38 C and 1 of following: cough, runny nose, red eyes
- **Watery Diarrhea:** ≥ 3 liquid stools in a 24 hour period

Indicators of mortality and morbidity

- **Number of deaths or cases**
- **Proportional mortality and morbidity**
- **Mortality and morbidity rates**

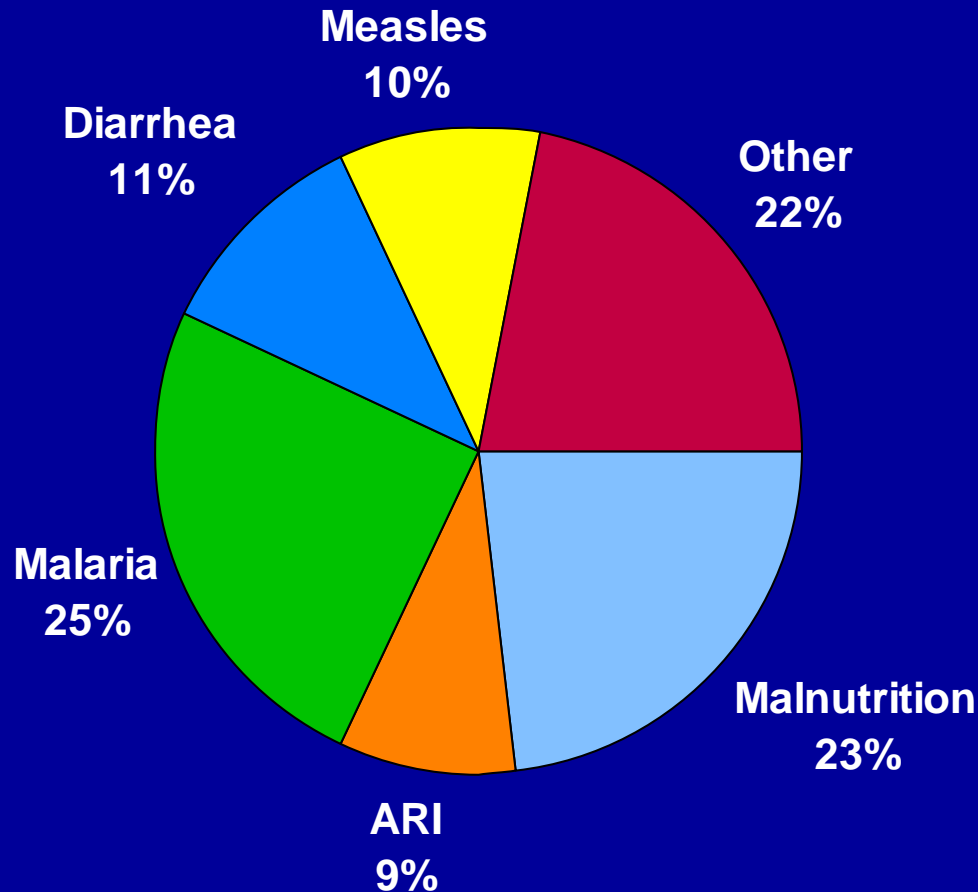
Reported cases of diarrhea and case fatality rate, Goma, Zaire, Jul & Aug, 1994



Source: Les Roberts, WHO

Proportional mortality

Major causes of death in refugee children <5 years of age,
Malawi, 1990



Source: UNHCR, MSF, ARC, IRC

Rates: Problems with denominator



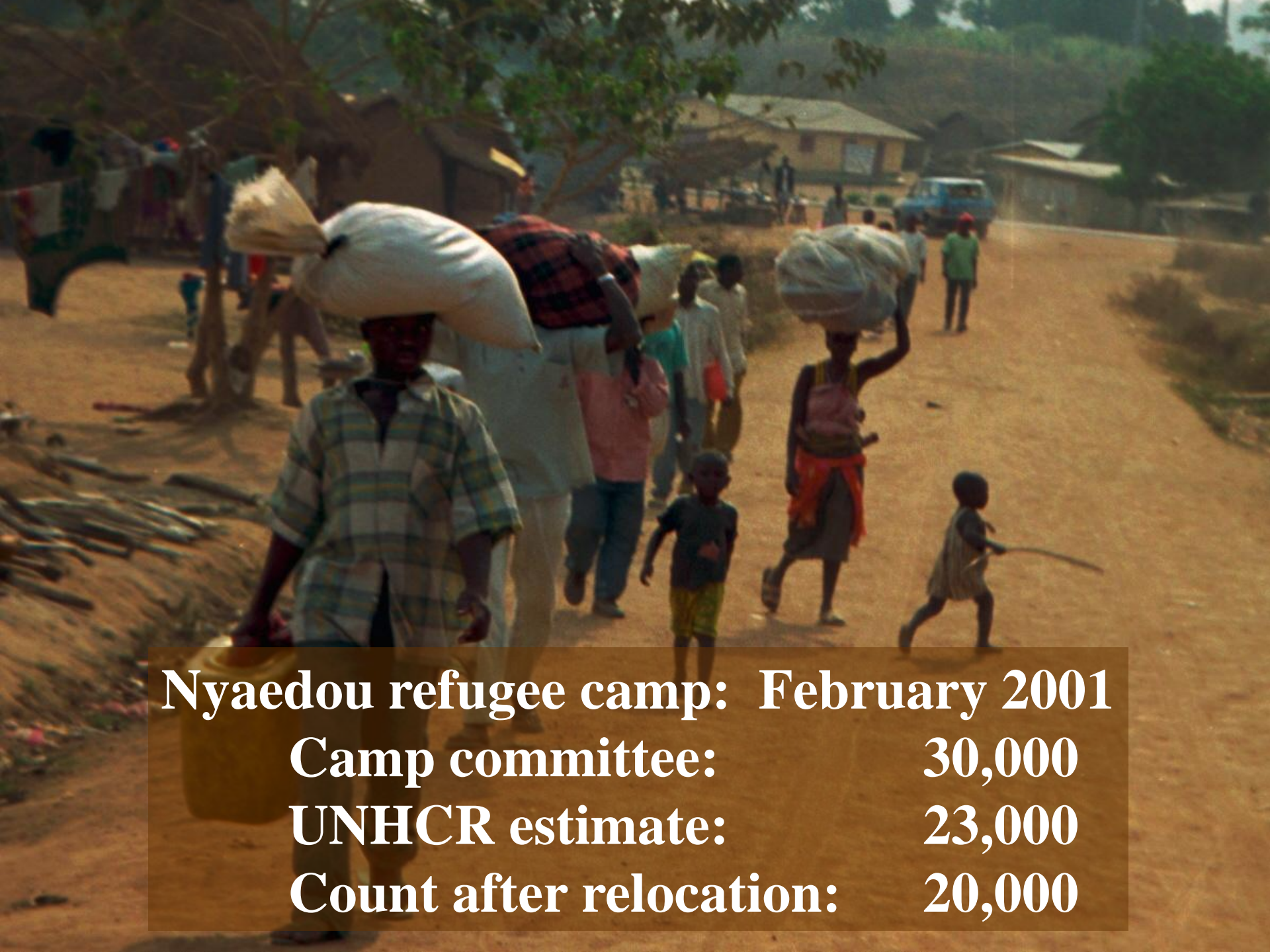


Massakoundou refugee camp: April 2001

Camp committee: 45,000

UNHCR estimate: 25,000

Census April 8: 11,500



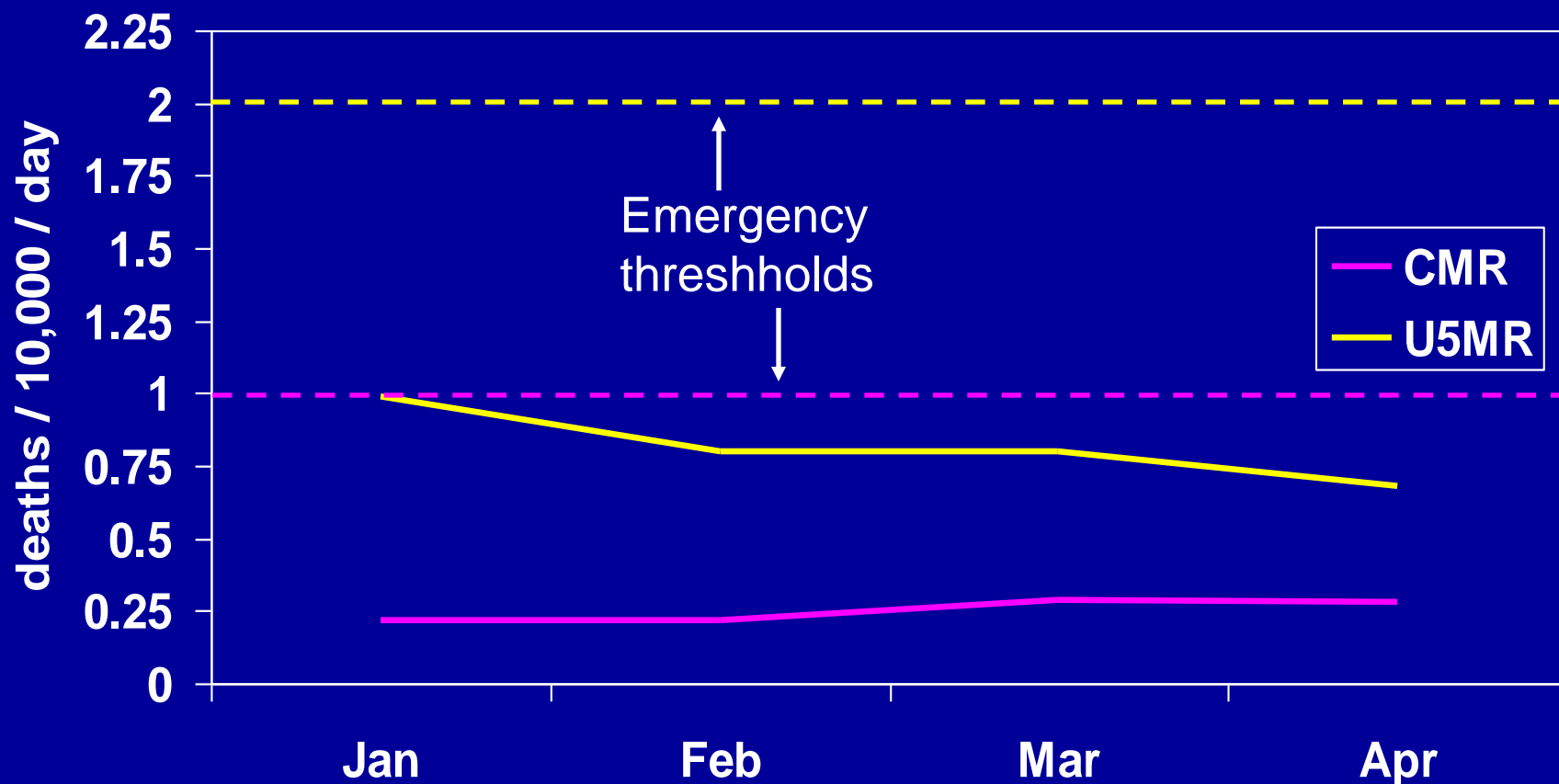
Nyaedou refugee camp: February 2001

Camp committee: 30,000

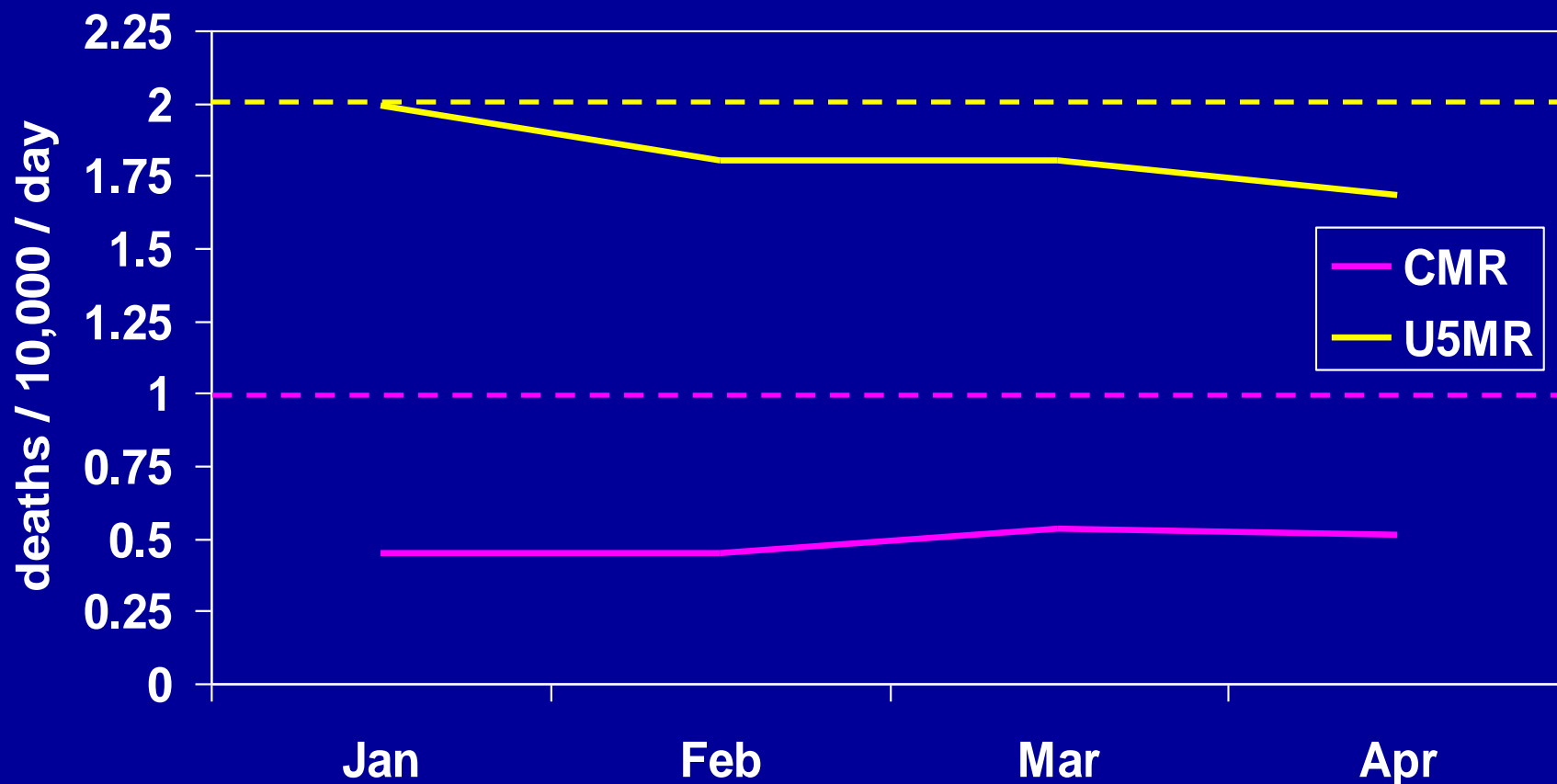
UNHCR estimate: 23,000

Count after relocation: 20,000

Mortality rates in refugee camps in Guinea, 2001 (original populations estimates)



Mortality rates in refugee camps in Guinea, 2001 (population estimates revised downward)



Surveillance - Program indicators

- **Supplemental feeding program**
 - Enrollment and attendance
- **Outpatient clinic**
 - # new consultations / week / total population
 - # consultations / health care provider / day
- **Water and sanitation**
 - # liters of water / person / day
 - # persons / latrine

Key elements of a good health surveillance system

- **Responsibility assigned to one organization**
- **Demographic, mortality, morbidity and priority program information collected**
- **Standardized case definitions and forms used**
- **Has a community based element where appropriate**

Key elements of a good health surveillance system

- **Lead agency rapidly analyzes, summarizes and shares data and provides feedback**
- **It ONLY COLLECTS DATA WHICH ARE USEFUL**
- **DATA ARE ACTED ON IMMEDIATELY**

Health surveillance

Guinea case study in
emergency health surveillance