TRAINING FOR IMPROVED PRACTICE:
Public Health and Nutrition in Emergencies

Nutrition and Health Survey Methodology

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

Overview

- The need for a standardized tool and methodology
- Designing, planning and implementing a health and nutrition survey: good practice methods and principles
- Basic analysis and interpretation
- Constraints of surveys

Methods of Data Collection

	Rapid 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

Why the need for a standardized tool and methodology?

The problem: Non-standardization of methods

Somalia

Boss, P. et al. Assessments of Mortality, Morbidity and Nutritional Status in Somalia during the 1991-92 Famine, JAMA 1994

Sudan:

- Over 21 studies of nutritional status conducted in southern Sudan between April 1998 and January 1999

Findings:

- Only three (3) covered populations of complete payams (administrative units like sub-districts)
- Only nine (9) of the surveys used cluster sampling with similar sample sizes
- Only three (3) used z-scores of wasting and the presence of oedema to define acute malnutrition

(Source: RNIS, 1999)

Problems with lack of standardization

- Inability to compare surveys
  - Over time
  - Compare different populations
- Use of inappropriate methods

Can we believe it?
What does it mean?

"….50% of children are malnourished in Democratic People's Republic of Korea….as UN agencies launch $50 million appeal for disaster response…."

Guardian Weekly; Jan '97

Health and Nutrition Survey Information

Food Frequency

Biochemical

Clinical signs

Morbidity

Anthropometric

Mortality

Data from combination of methods provide stronger information on nutritional status

What is a cross-sectional survey?

A cross-sectional survey is a collection of data from a specific population at a single point in time.

Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. Design a data collection form
5. Sampling design and implementation
6. Logistics, equipment, and survey team
7. Data entry and analysis
8. Interpretation of results
9. Preparation and dissemination of results
10. Take action

Surveys: Tasks and Important Steps

1. **Determine broad questions to be answered**
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. Design a questionnaire
5. Sampling design and implementation
7. Logistics, equipment, and survey team
8. Data entry and analysis
9. Interpretation of results
10. Preparation and dissemination of results
11. Take action

1. Broad questions to be answered

- Should you do a survey?
  - Will a survey answer the questions you have?
- Surveys should be done to answer programme-oriented questions
- Information should not be gathered just “for interest”
- Programme questions can be to:
  - Determine need for programme
  - Design new programme
  - Evaluate existing programme

1. Broad questions to be answered

Which of these questions are appropriate programme questions to be answered in an emergency surveys?

1) What is the prevalence of stunting among the displaced population?
2) Does anemia lead to lower intellectual functioning in school-age children?
3) What are the risk factors for scurvy among the affected population?
4) Would it be interesting to measure head circumference in babies?

Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. **Determine objectives and outcomes to be measured**
3. Define the sampling frame
4. Design a questionnaire
5. Sampling design and implementation
7. Logistics, equipment, and survey team
8. Data entry and analysis
9. Interpretation of results
10. Preparation and dissemination of results
11. Take action

2. Determine objectives and outcomes

- Clearly defined objectives influence the rest of the survey
- Unclear objectives will complicate the rest of the survey
- A rapid assessment will assist in defining clear objectives and a rational for analysis
- The objectives should include:
  - The outcomes to be measured
  - Target group
  - Population area to be included survey

PRACTICAL EXERCISE

Read the short background for the Baringo case-study and define two objectives for a rapid health and nutrition survey.

Think about the outcomes that would need to be measured to meet this objective.

Health and nutrition outcomes

Outcome	Case definition
Acute malnutrition in young children	<- 2 z-score weight for height or oedema
Measles	Fever, coryzal symptoms (cough, runny nose, sore eyes) and rash
Scurvy	Swollen joints, bleeding gums and bruising (hemorrage)
Coverage of food ration	Households who received food ration during last month
Coverage measles vaccination	Children vaccinated for measles

Mortality: General principles

- Recall period
  - Beginning of period should be well-known date
    - Major holiday or festival or
    - Occurrence everyone remembers
  - End of period is usually day of survey data collection
  - Recall period should be short
    - Allow accurate recall
    - Produce usable rate from recent past
  - Recall period long enough for statistical precision
  - 1 year often sufficient

Mortality: General principles

- Births and deaths
  - Reported by living household member
  - Method should account for both births and deaths
  - Detection of deaths must be nearly complete
- Denominators of mortality rates are survey sample itself
  - No need to know population size

Calculating mortality rates

$$\text{Mortality rate} = \frac{\text{Number of deaths}}{\text{Population}} \times \text{constant} \;/\; \text{time period}$$

From surveillance:

$$\frac{13 \text{ deaths}}{25{,}000 \text{ population}} \times 10{,}000 \;/\; \text{week}$$

0.74 deaths / 10,000 / day

In survey:

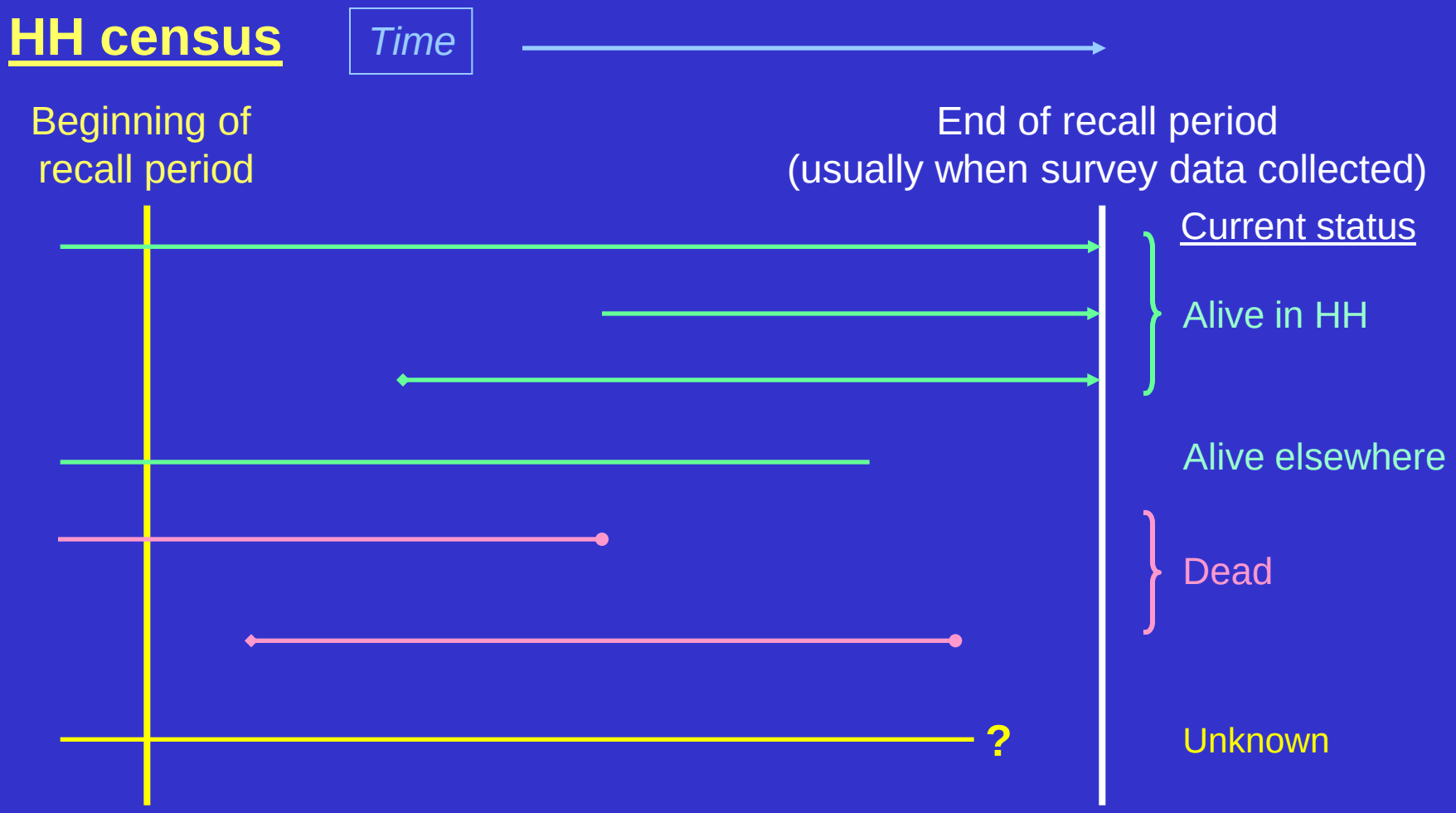
$$\frac{86 \text{ deaths}}{3{,}467 \text{ subjects}} \times 10{,}000 \;/\; 11 \text{ months (334 days)}$$

0.74 deaths / 10,000 / day

Methods used

- At least 3 methods currently used:
  - Current household census
  - Past household census
  - Previous birth history

Past HH census method



Past household census method, Badghis Province, Afghanistan, March 2002

I would like to ask you about each person who lived in this household at the time of Eid Qurban 1379 (2001 Gregorian calendar) and children who were born since the time of Eid Qurban:

HOUSEHOLD MEMBERS

Head of household on 1st line

1. Alive (living in this household)
2. Alive (living elsewhere)
3. Died
4. Missing/Unknown

When ____ became ill, was he/she very thin or did he/she have swollen feet or legs?

When ___ died, was she pregnant or at the time of Chel or Nefaz?

No.	Age (yrs)	Sex (circle one)	Status as of TODAY (circle one)	Missing or dead, when? (mm/yy)	Died of which cause?	Malnutr?	Pregnant or in Chel??
1		M / F	1 2 3 4	/		Y / N	Y / N
2		M / F	1 2 3 4	/		Y / N	Y / N
3		M / F	1 2 3 4	/		Y / N	Y / N
4		M / F	1 2 3 4	/		Y / N	Y / N
5		M / F	1 2 3 4	/		Y / N	Y / N
6		M / F	1 2 3 4	/		Y / N	Y / N
7		M / F	1 2 3 4	/		Y / N	Y / N
8		M / F	1 2 3 4	/		Y / N	Y / N
9		M / F	1 2 3 4	/		Y / N	Y / N
10		M / F	1 2 3 4	/		Y / N	Y / N
11		M / F	1 2 3 4	/		Y / N	Y / N

Example of crude mortality rate calculation

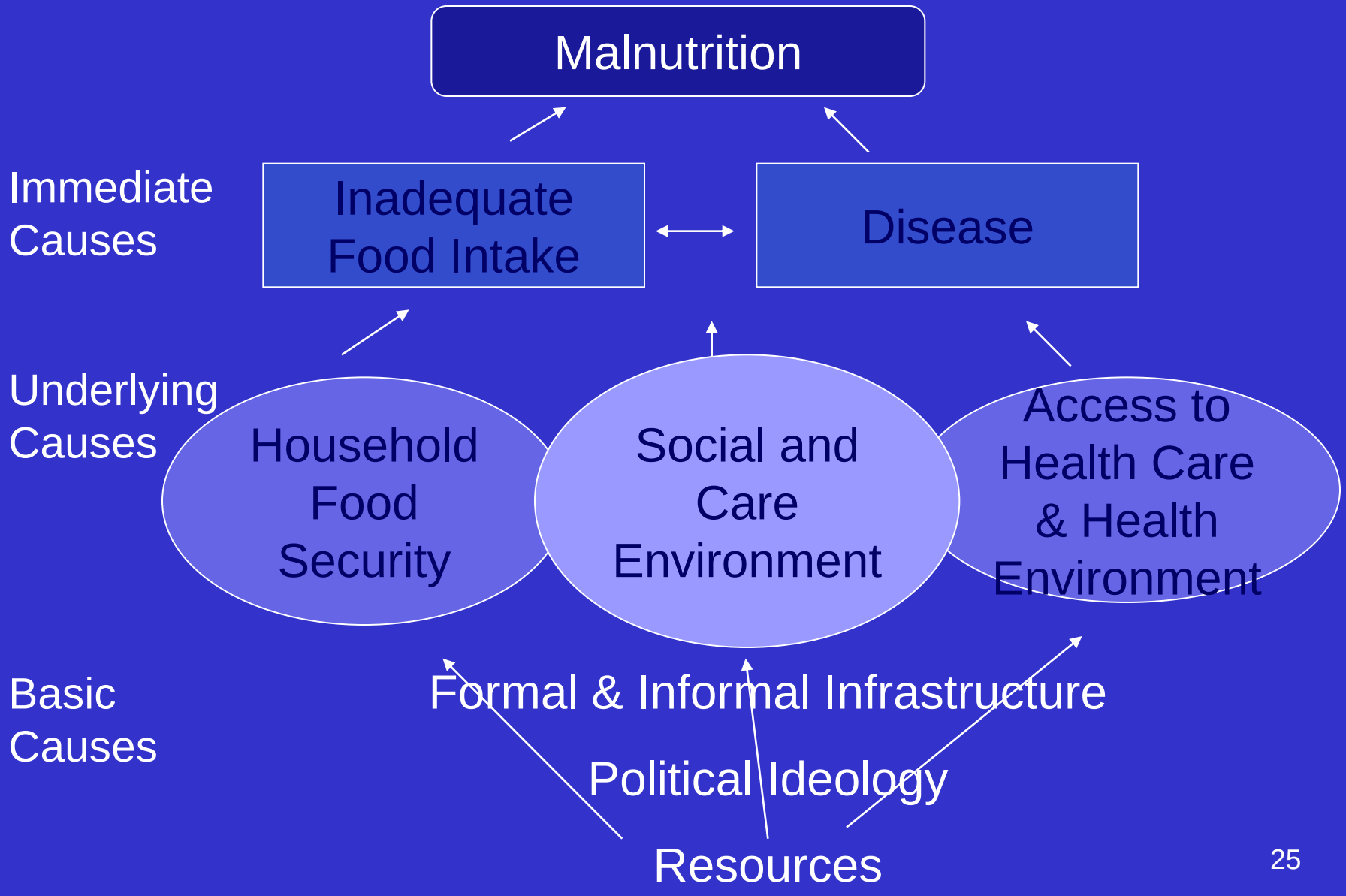
Use past household census method

- Length of recall period = 383 days
- Number of household members at beginning of recall period = 3,045
- Number of births during recall period = 115
- Number of deaths during recall period = 85
- What is crude mortality rate?

$$\frac{85}{3045 + (0.5 \times 115) - (0.5 \times 85)} \times 10{,}000 / 383$$

= 0.71 deaths / 10,000 / day

2. Determine objectives and outcomes

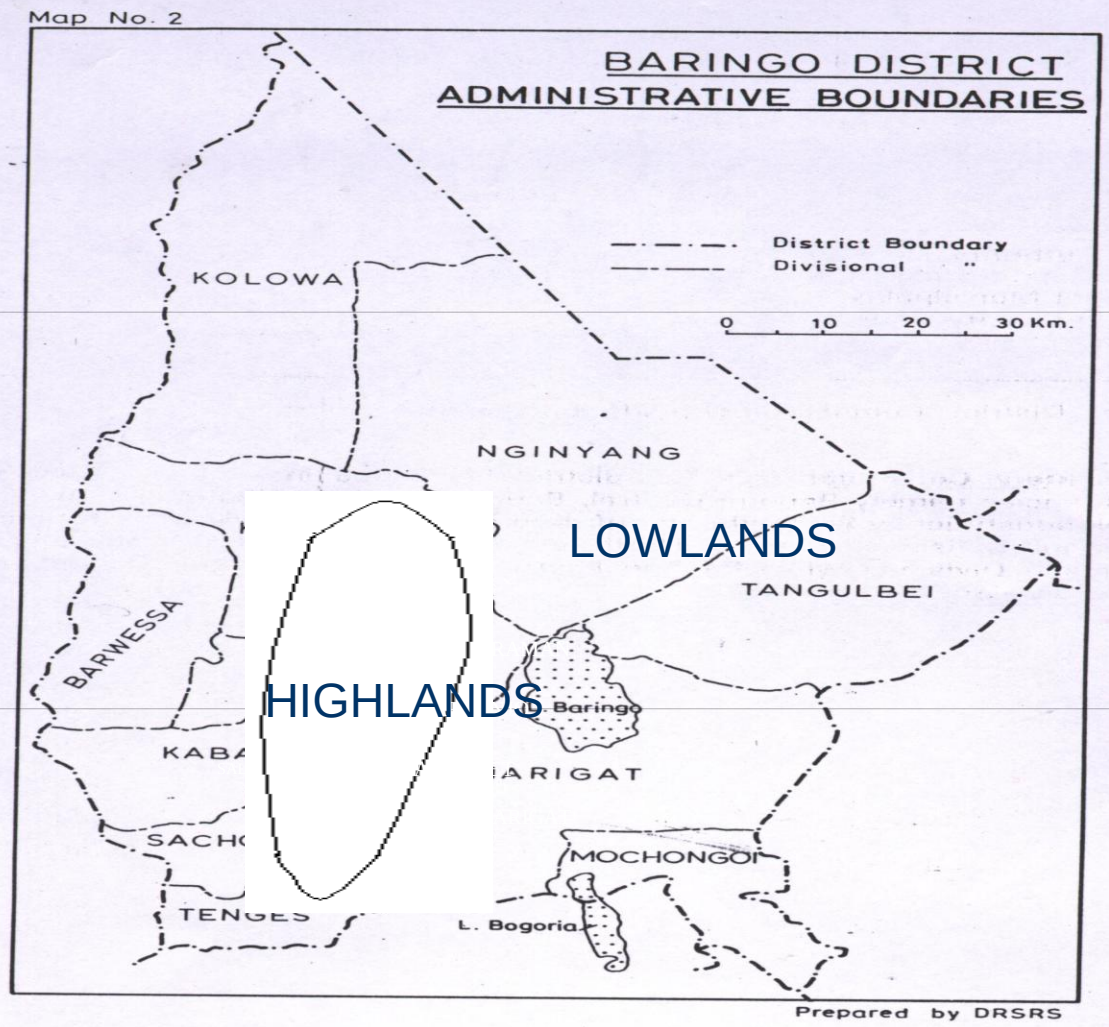


Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. **Define the sampling frame**
4. Design a questionnaire
5. Sampling design and implementation
7. Logistics, equipment, and survey team
8. Data entry and analysis
9. Interpretation of results
10. Preparation and dissemination of results
11. Take action

PRACTICAL EXERCISE

What is the sampling universe for the survey(s) in Baringo District?


Map No. 2
BARINGO DISTRICT
ADMINISTRATIVE BOUNDARIES
District Boundary
Divisional "
0 10 20 30 Km.
KOLOWA
NGINYANG
TANGULBEI
BARWESSA
KABA
SACHO
TENGES
ARIGAT
MOCHONGOI
L. Bogoria
Prepared by DRSRS
LOWLANDS
HIGHLANDS

Sampling frame

- Rapid assessment and objectives of survey
- Geography and access
- Security conditions
- Homogeneity of population
- Population to which the program is or will be targeted
- Factors causing differences in levels of malnutrition or disease

Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. **Design a questionnaire**
5. Sampling design and implementation
7. Logistics, equipment, and survey team
8. Data entry and analysis
9. Interpretation of results
10. Preparation and dissemination of results
11. Take action

Design the questionnaire: essential variables

- Age
- Sex
- Height
- Weight
- Oedema

But what did your rapid assessment tell you? What are your objectives?
What more do you want to know?

Design the questionnaire: Example

The questionnaire must be piloted

NUTRITION SURVEY 2001 -- Data collection form (page 3)

CHILD 6-59 MONTHS OF AGE

Cluster number: _____ Household number: _____ Child's household member number: _____

Child's date of birth: ..... Day _____ Month _____ Year _____

Sex: (circle one) ..... Male, Female

Relationship of respondent to child: (circle one) ..... Mother Father Grandparent Other

Is this child breast feeding? ..... Yes, No

If no, was this child ever breast fed? ..... Yes, No

If no, at what age did child stop breast feeding? ..... ____ mos.

Now I would like to ask you about foods that your child ate in the last 7 days. In the past 7 days:

How many days did this child eat meat? ..... _____ days

How many days did this child eat flour or flour products? ..... _____ days

How many days did this child eat milk, butter or dairy products? ..... _____ days

How many days did this child eat rice? ..... _____ days

How many days did this child eat potatoes? ..... _____ days

How many days did this child eat other vegetables? ..... _____ days

Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. Design a questionnaire
5. **Sampling methodology and sample size**
7. Logistics, equipment, and survey team
8. Data entry and analysis
9. Interpretation of results
10. Preparation and dissemination of results
11. Take action

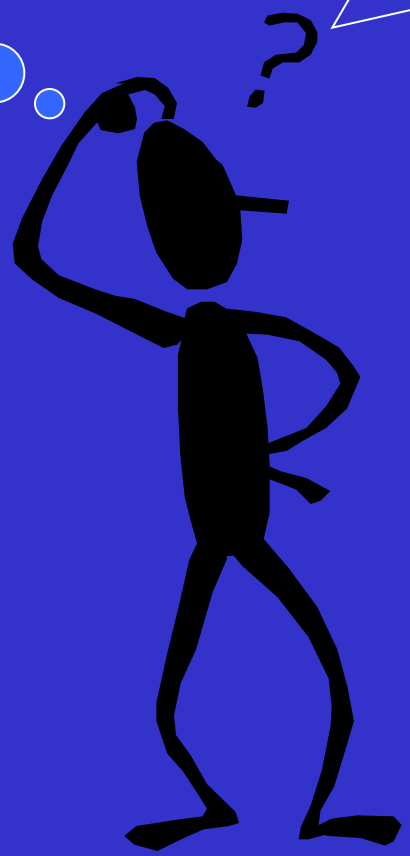
Sampling

Why sample?

..because we cannot measure every person in the population

What is necessary to achieve this goal?

….to estimate some measure in the population, the sample must be <u>representative</u>



What is the goal of sampling?

..to estimate some measure in the larger population

Sampling Methodology: types

Probability sampling

- Simple random sampling
- Systematic random sampling
- Cluster sampling

Non-probability sampling

- Key informants
- Convenience sampling
- Purposive sampling

Sampling Methodology:

A representative sample means that:

1. Each individual or sampling unit in the population has the same chance or probability of being selected
2. The selection of one individual should be independent of the selection of another

Simple random sampling

Systematic or interval sampling

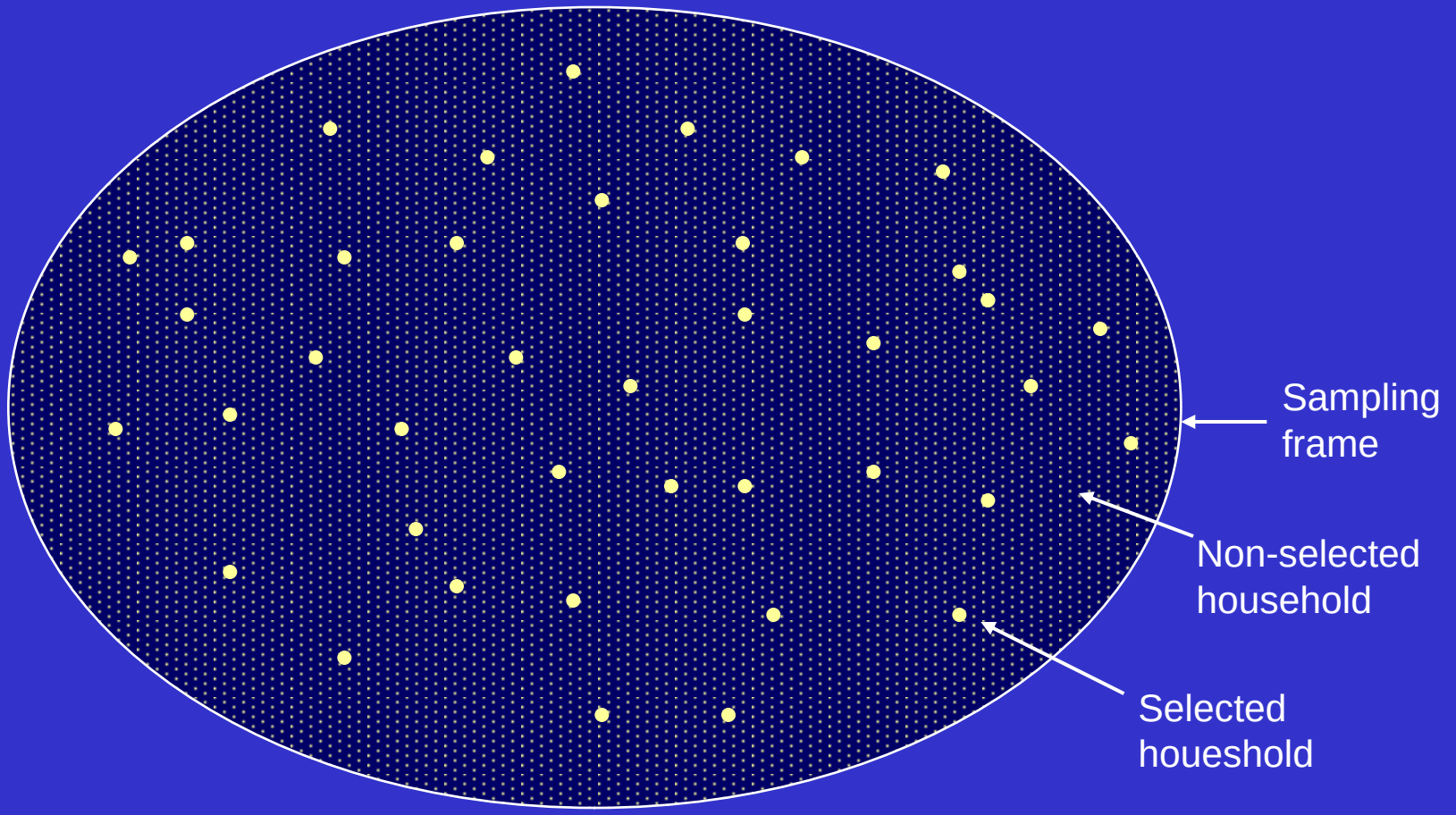
Cluster sampling

Which sampling method here?


Which sampling method here?

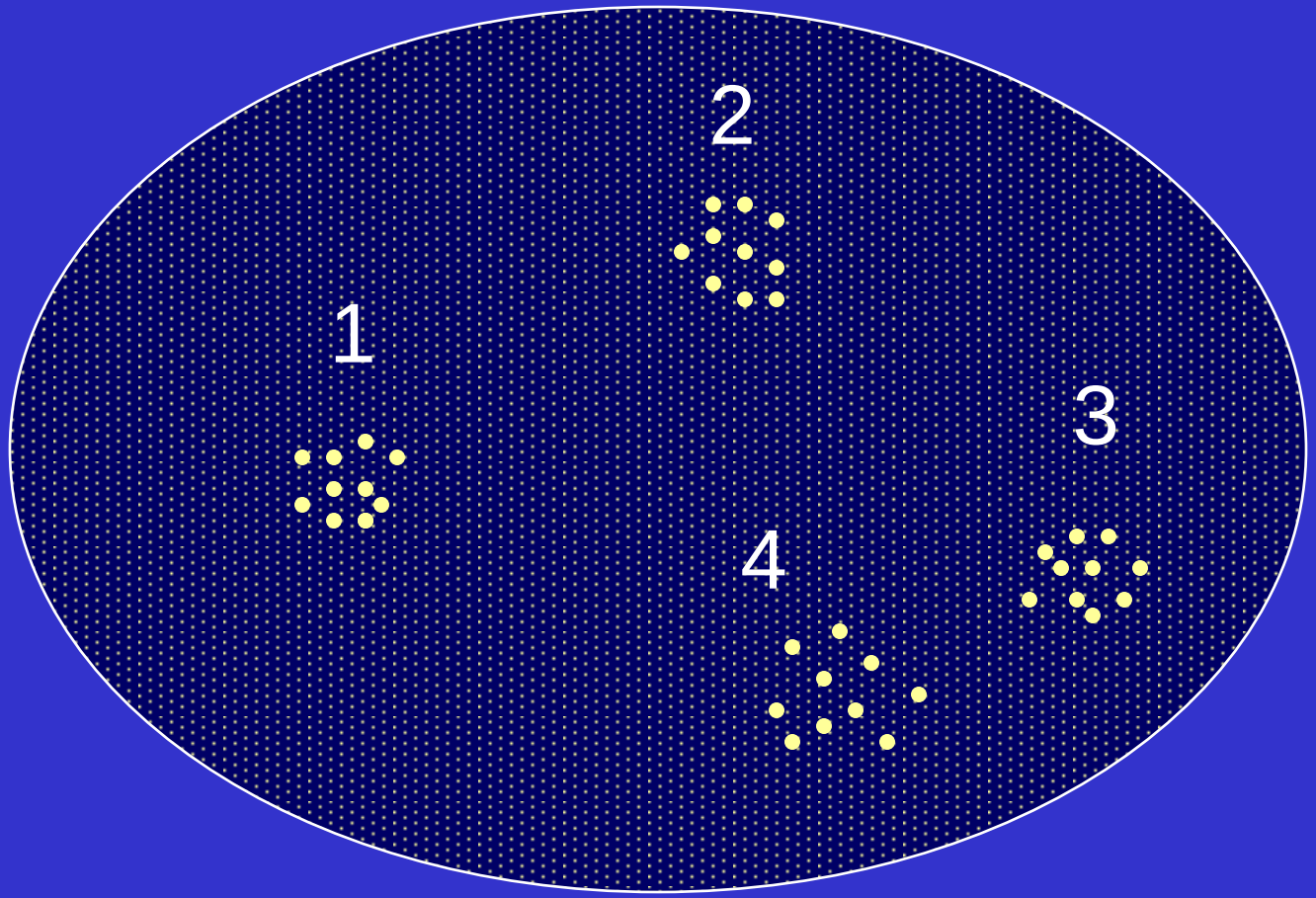
Sampling

Simple random sampling



Sampling

Cluster sampling



Sample size

Small sample size

Result of single survey

Sample size

Large sample size without bias:

Sample size

Large sample size

Bias from poor measurements, bad equipment, selecting a non-representative sample

Precision

Precision: obtaining similar results with repeated measurement

Calculating the sample size

1. Precision desired
2. Expected prevalence of the outcome
3. Error risk (taken as 5%)

As long as the sampling frame is larger than a few thousand, then do not need to know the denominator or total population size

Calculating the sample size

The sample size is calculated using the following formula:

$$n = \{ \; t^2 \; x \; \frac{p \; x \; q}{d^2} \; \}$$

Where: n = sample size

t = the risk of error (1.96 or 5% error)

p =expected prevalence (fraction of 1)

q = 1- p (expected non-prevalence)

d = level of precision (fraction of 1)

Sample size should by multiplied by design effect in cluster surveys

Calculating the sample size

The sample size is calculated using the following formula:

$$81 = \{ \ 1.96^2 \ x \ \frac{0.3 \ x \ 0.7}{0.1^2} \ \}$$

Where: n = sample size

t = the risk of error (1.96 or 5% error)

p =expected prevalence (fraction of 1)

q = 1- p (expected non-prevalence)

d = level of precision (fraction of 1)

Sample size should by multiplied by design effect in cluster surveys

Sample size: individuals

Indicator	Target Group	Est. prevalence	Prec.	# of subjects	# per HH	Req'd # of HHs
Wasting	Children <5 yrs	10%	±5	139	0.84	165
Anemia	Women 15-49 yrs	50%	±10	96	1.39	69
Iodized salt	Households	80%	±5	246	1.00	246
Exclusive BF	Infants <6 mos	20%	±5	246	0.08	3075

Sample size: households

Indicator	Target Group	Est. prevalence	Prec.	# of subjects	# per HH	Req'd # of HHs
Wasting	Children <5 yrs	10%	±5	139	0.84	165
Anemia	Women 15-49 yrs	50%	±10	96	1.39	69
Iodized salt	Households	80%	±5	246	1.00	246
Exclusive BF	Infants <6 mos	20%	±5	246	0.08	3075

Confidence Interval

What does a 95% confidence interval mean?

Assuming that the prevalence in the entire population is what you estimate in your survey, then if you repeat your survey 100 times with a different sample each time, 95 of these surveys would give a result inside the confidence interval.

Sampling: Confidence Interval

Result of single survey

Sampling: Confidence Interval

Result of single survey

Design Effect

- Design effect is associated with:
  - Clustering of outcome in population
  - Number of clusters

For a 30 cluster survey in Mongolia, the design effect was:

- Iodated salt - 5.1
- Stunting in children - 1.4
- Acute malnutrition in children – 1.3

Calculating the sample size in cluster surveys

The sample size is calculated using the following formula:

$$n = \left\{ t^2 \times \frac{p \times q}{d^2} \right\} \times \text{design effect}$$

PRACTICAL EXERCISE

Calculate the required sample size required to estimate the prevalence of acute malnutrition with simple random sampling in Baringo:

We want a precision of ±4

Assume design effect of 2

What should we assume as prevalence?

~30%

PRACTICAL EXERCISE

What is required sample size?

1008

How many children in each of 30 clusters?

34

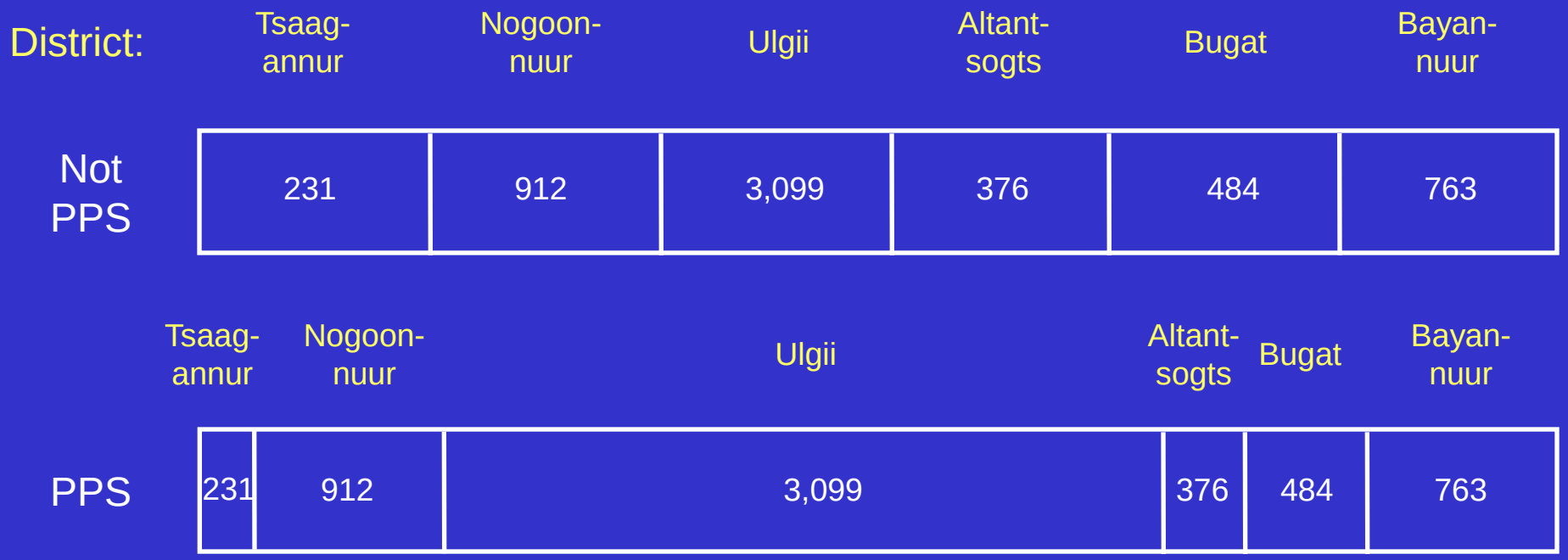
PRACTICAL EXERCISE

Change desired precision to ±5

What is required sample size now?

645

Cluster sampling: Probability Proportional to Size (PPS)



Cluster sampling
Selecting the clusters: STAGE 1

- Construct a list of primary sampling units (e.g. camp sections), listing the population size of each one
- In an adjacent column, list the cumulative population
- Estimate sampling interval: divide population by 30 clusters
- Pick random number between 1 and sampling interval: this is your random start
- Add sampling interval to the random number and choose 2nd cluster
- Continue until 30 clusters have been selected

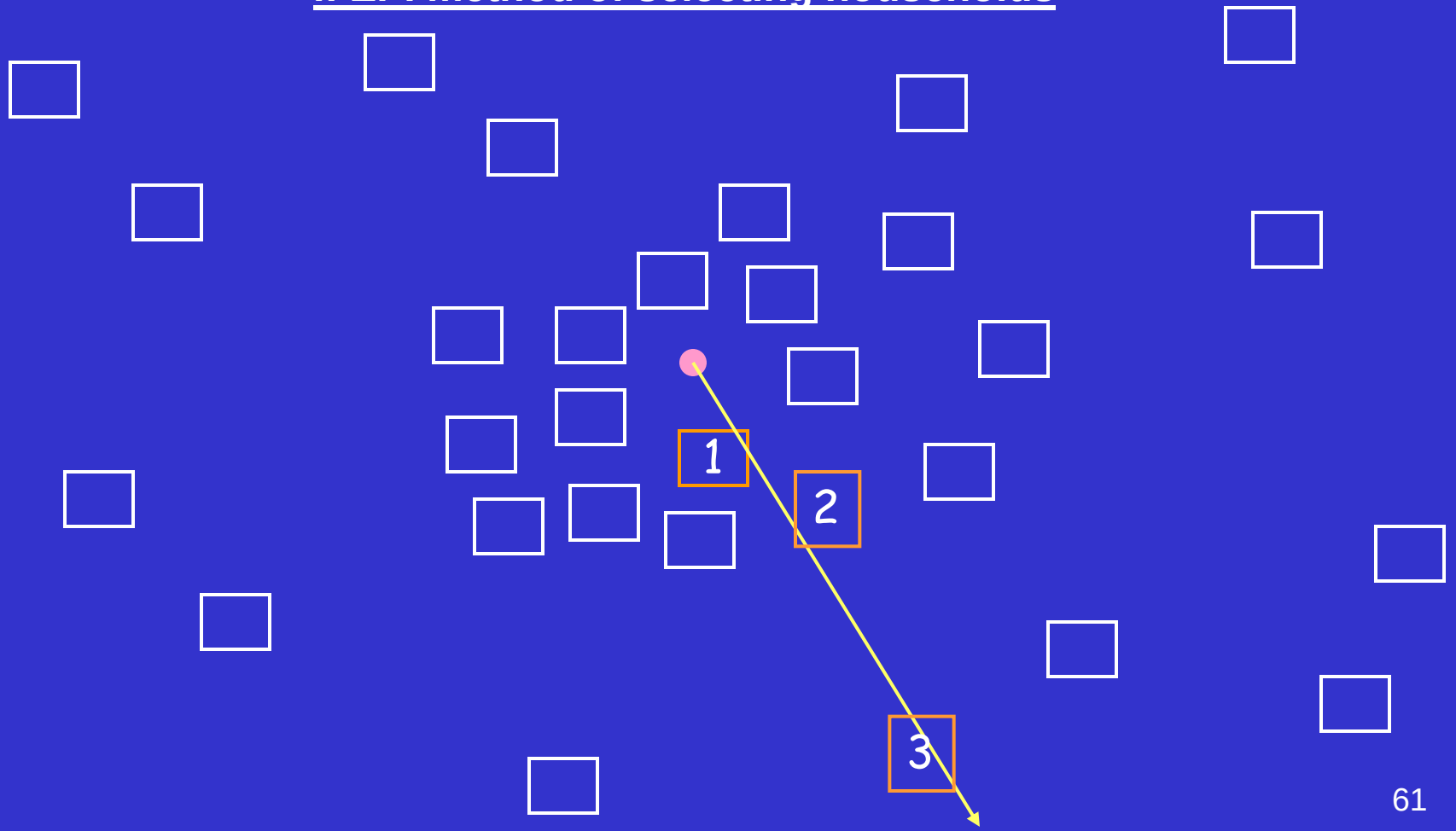
Cluster sampling
Selecting the households: STAGE 2

I: EPI method of selecting households

- In each cluster go to the center and choose a random direction
- Walk in a straight line to the perimeter of the cluster counting the number of houses in that line (x)
- Choose random number between 1 and x
- This is the first house
- Continue next closest house until you complete your cluster

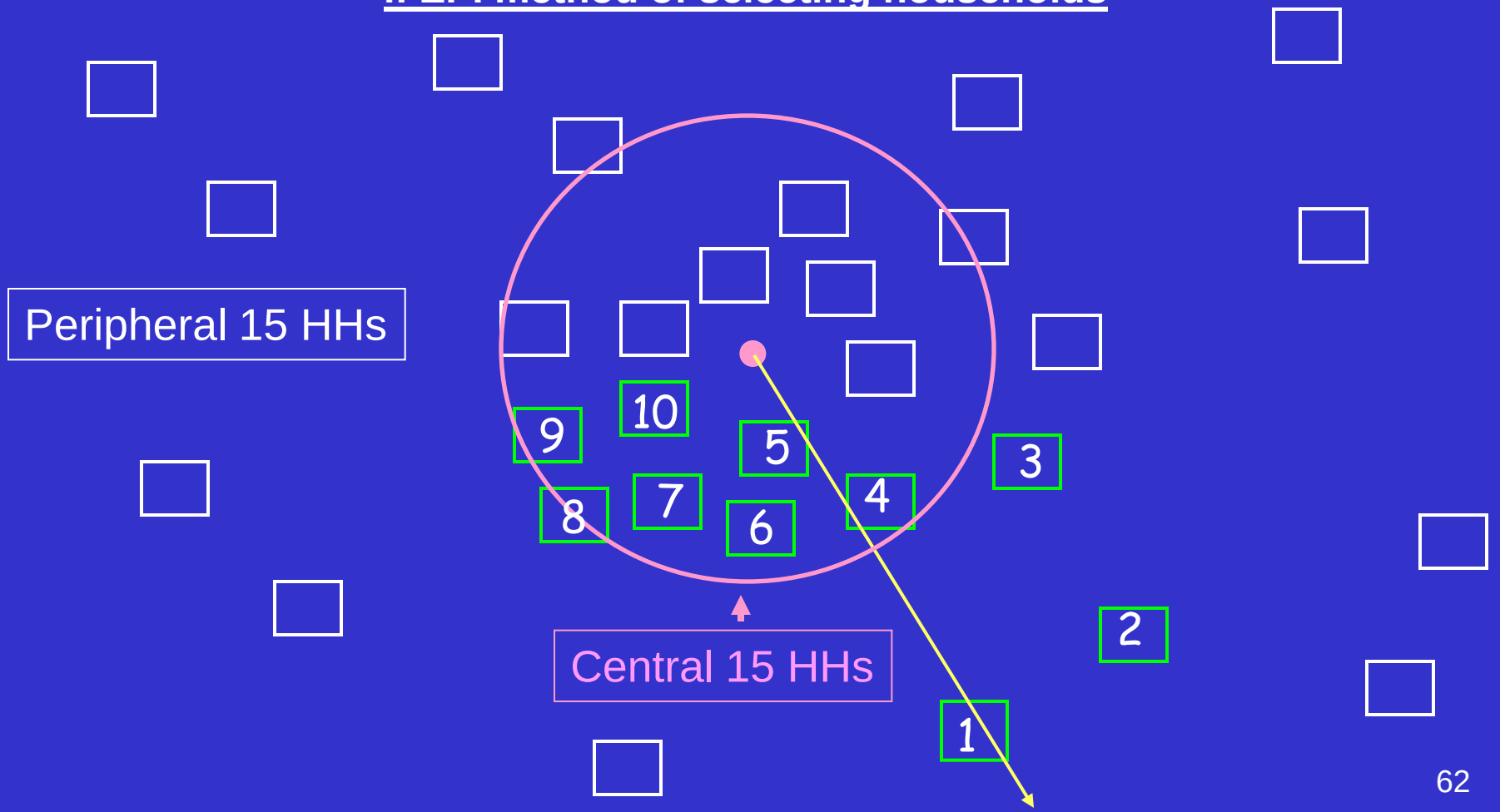
Cluster sampling
Selecting the households: STAGE 2

I: EPI method of selecting households



Cluster sampling
Selecting the households: STAGE 2

I: EPI method of selecting households



Cluster sampling
Selecting the households: STAGE 2

II: Random sampling using community lists

- Upon arriving in the village, locate the village leader and explain the survey
- Ask for a complete list of all households, allocate numbers to each household
- If more than 100-200 households, identify sub-sections and list households in a randomly selected subsection
- Choose random numbers using table until required number of households selected

PRACTICAL EXERCISE

Identify the first fifteen clusters (of 30 clusters) to be surveyed in the case-study (Stage 1 sampling)

Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. Design a questionnaire
5. Sampling design and implementation
7. **Logistics, equipment, and survey team**
8. Data entry and analysis
9. Interpretation of results
10. Preparation and dissemination of results
11. Take action

Survey planning; early stages

- Permission from authorities
- Enlist community support
- Consult other organizations about data to collect
- Inform community
- Feasibility
  - Security
  - Accessibility
- Budget
  - Supplies and equipment
  - Manpower
  - Transportation and logistics

Survey planning; equipment

Make a list of the most essential pieces of equipment that would be required for a nutritional survey

Oxfam Survey Kits:
See handout

Survey team: Manpower and personnel

Task	Type of person needed
• Supervising	• Person experienced with surveys
• Driving	• Driver
• Interviewing	• Physician, nurse, nurse assistant, community worker
• Weighing and measuring	• Nurse, teacher, other (literate)
• Obtaining biologic specimens	• Laboratory technician, physician, nurse

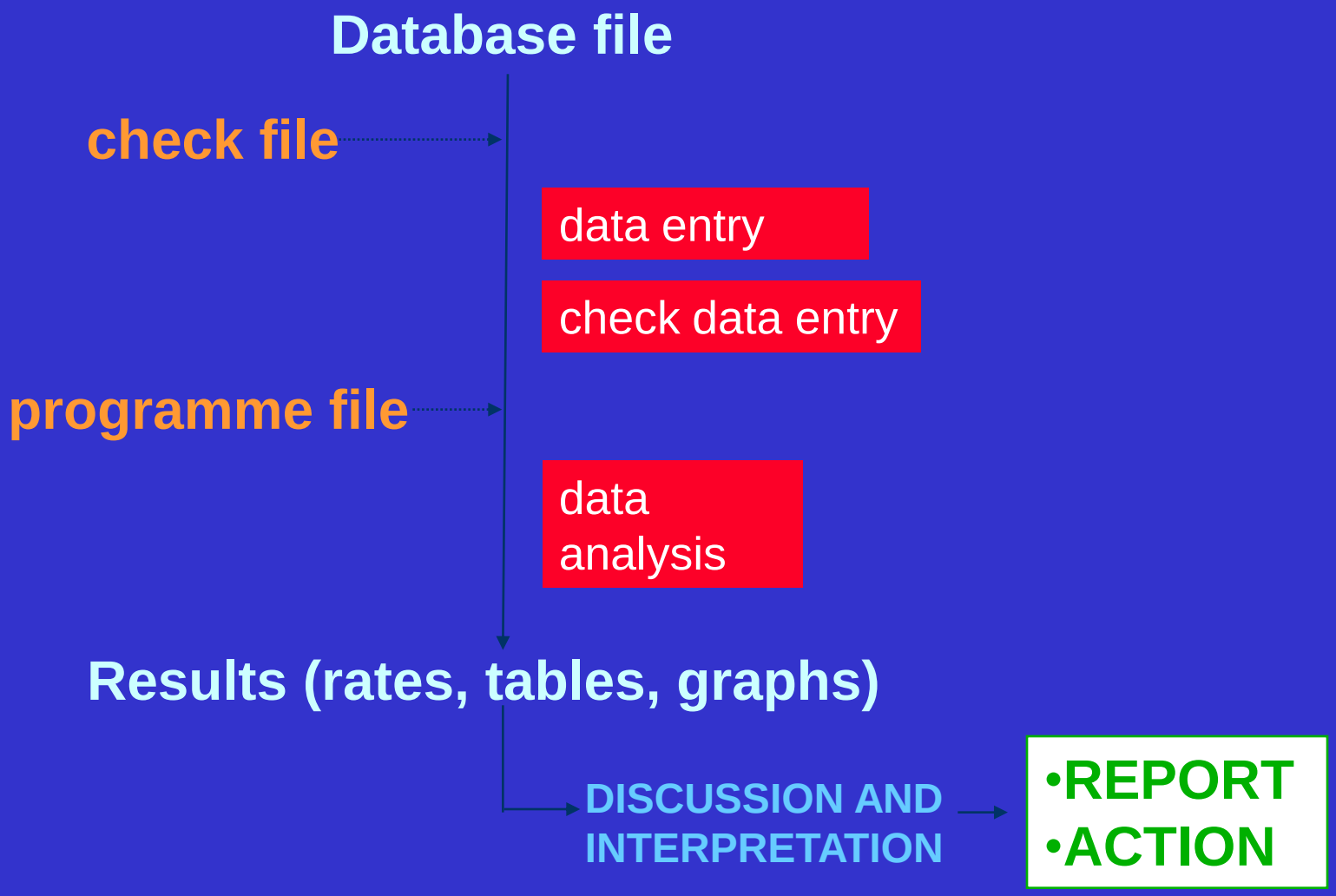
Survey teams: Training

- Decide which team members need which skills and knowledge
- Create schedule for training
- Include mixture of theory and practice
- Allow plenty of time for practice in classroom and in field situation

Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. Design a questionnaire
5. Sampling design and implementation
7. Logistics, equipment, and survey team
8. **Data entry and analysis**
9. Interpretation of results
10. Preparation and dissemination of results
11. Take action

Data Analysis with Computers



Analysis: Results

Sample size:

- 855 children less than 5 years old
- 598 families surveyed

Prevalence of wasting:

- 28.9% < -2 Z scores weight for height [CI:25.9-32.1]
- 5.3% < -3 Z scores weight for height [CI:3.9-7.0]

Malnutrition level by origin (resident or displaced):

- Displaced 31.9% <-2 Z scores
- Resident 24.2% <-2 Z scores [p=0.02]

Coverage of feeding programmes:

- SFP 21.2% [12.9-32.7]
- TFC 17.2% [3.9-46.4]

Results (cont)

Measles coverage:

- Measles immunization coverage 59.4% [CI:54.6-64.1]

Major morbidity in last two weeks:

- Watery diarrhea 17.2% [CI:13.8-21.2]
- Measles 6.2% [CI: 4.2-9.0], N=53

  45% of measles cases moderately or severely malnourished

  22% of mortality in children over 5 years of age from measles

Mortality rates: (over 7 month period)

- Crude mortality rate: 3.2/10,000/day
- <5 mortality rate: 9.8/10,000/day

Analysis: Nutritional results

- Overall acute malnutrition (<-2 z-score or presence of oedema) with a 95% confidence limit
- Moderate acute malnutrition (>-3 and <-2 z-score without oedema) with a 95% confidence limit
- Severe acute malnutrition (<-3 z-score or presence of oedema) with a 95% confidence limit
- Number (and proportion) of severely malnourished children who have oedema

Quick Quiz

- A survey included 836 children 6-59 months of age.
- 2 children without oedema had a z-score of <-3 weight for height. An additional 2 children with normal z-scores had oedema.
- 27 had a z-score >-3 but ≤-2.
- What is the prevalence of severe, moderate and overall malnutrition?

Severe malnutrition = (<-3 z-score or oedema)	4 (2+2) / 836 = 0.5%
Moderate malnutrition = (≤-2 and >-3 z-score)	27 / 836 = 3.2%
Overall malnutrition = (<-2 z-score or oedema)	(4 + 27) / 836 = 3.7%

Analysis: Confidence Intervals

- Simplified formula for calculation of the 95% confidence interval:

$$d = 1.96 \times \sqrt{2 \times \frac{p \times q}{n}}$$

$$CI = p \pm d$$

Analysis: Results Summary (1)

	≤- 3 z-scores and/or oedema N %	>-3 and <-2 z-scores N %	≥-2 z-scores N %
6-17 months 18-29 months 6- 29 months 30-41 months 42-53 months 54-59 months			
6 – 59 months			

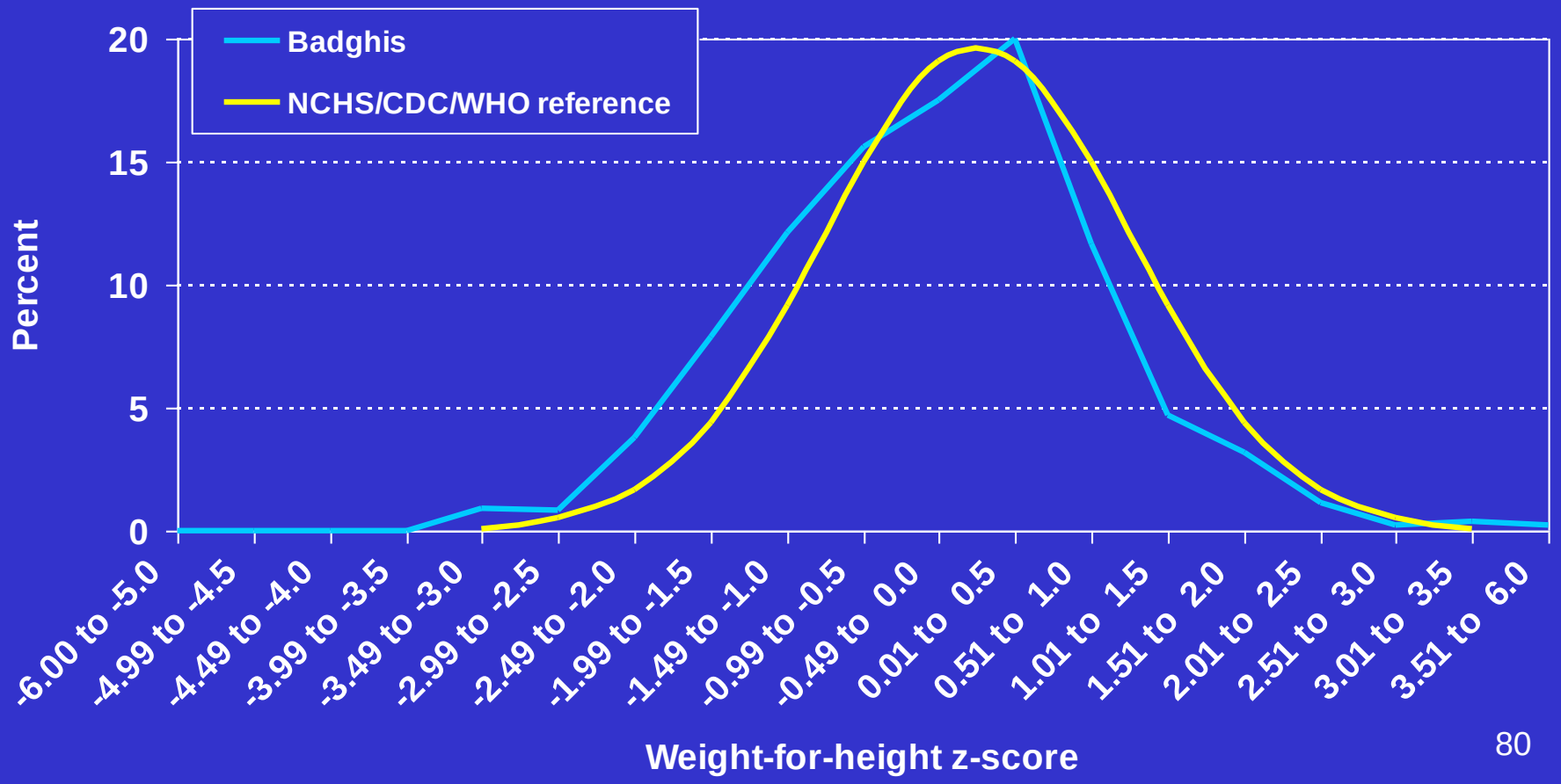
Analysis: Results Summary (2)

	Number	Weight for Height		Total % <- 2	Mean Z-score	% with oedema	
		< -3 z-score	<-2 z-score and >-3 z-score			< – 2 z-score	>- 2 z-score
6 -11 m 0 – 11 m							
12 - 17 m 18 -23 m 12 -23 m							
24 – 35 m 36 -47 m 48 – 59 m 24 – 59 m							
Total 0 – 59 m							

WHO, 2000, page 50

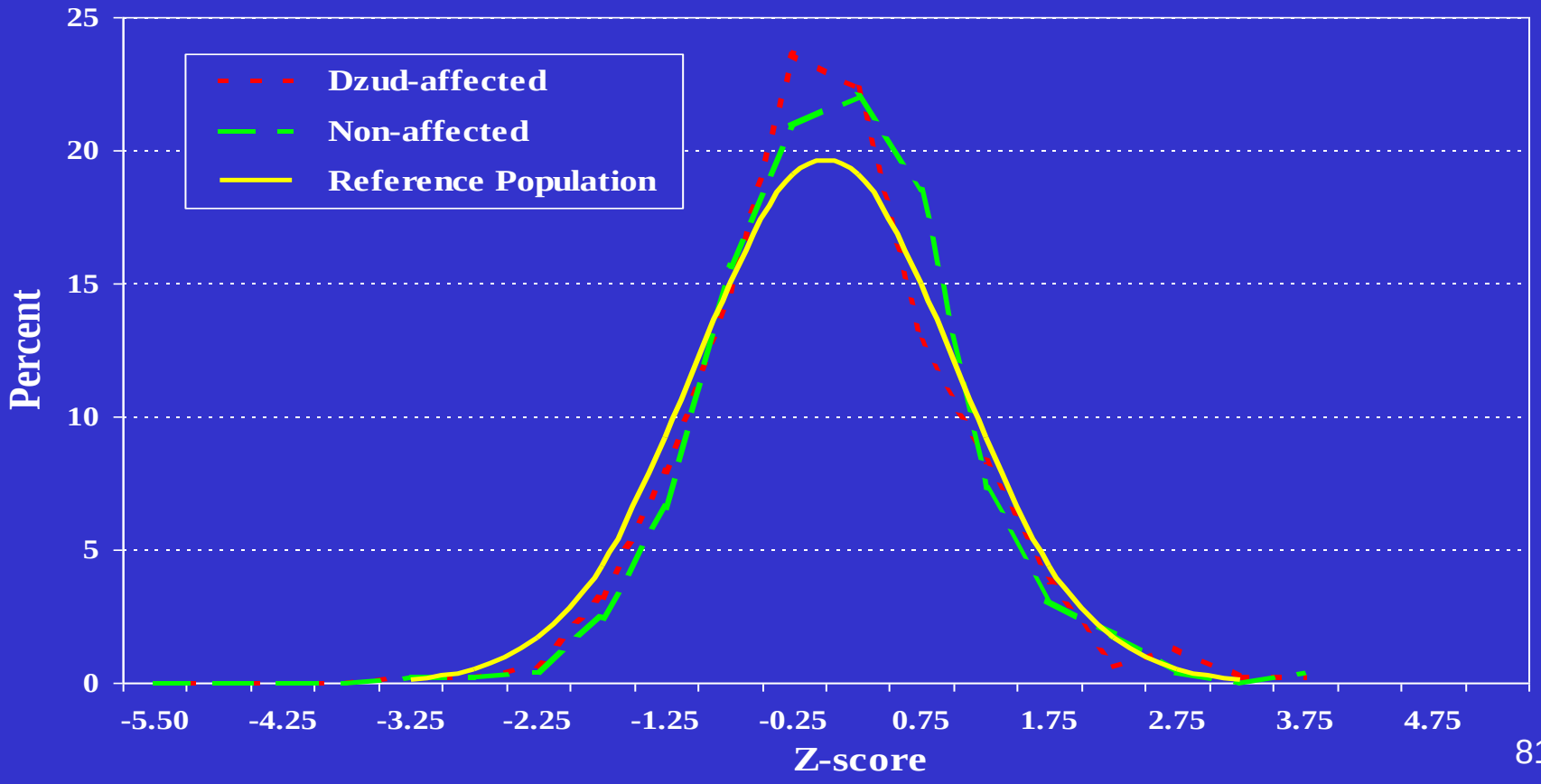
Analysis: Frequency Distribution

Distribution of weight-for-height z-scores, children < 5 years of age, Badghis Province, Afghanistan, March 2002



Analysis: Frequency Distribution

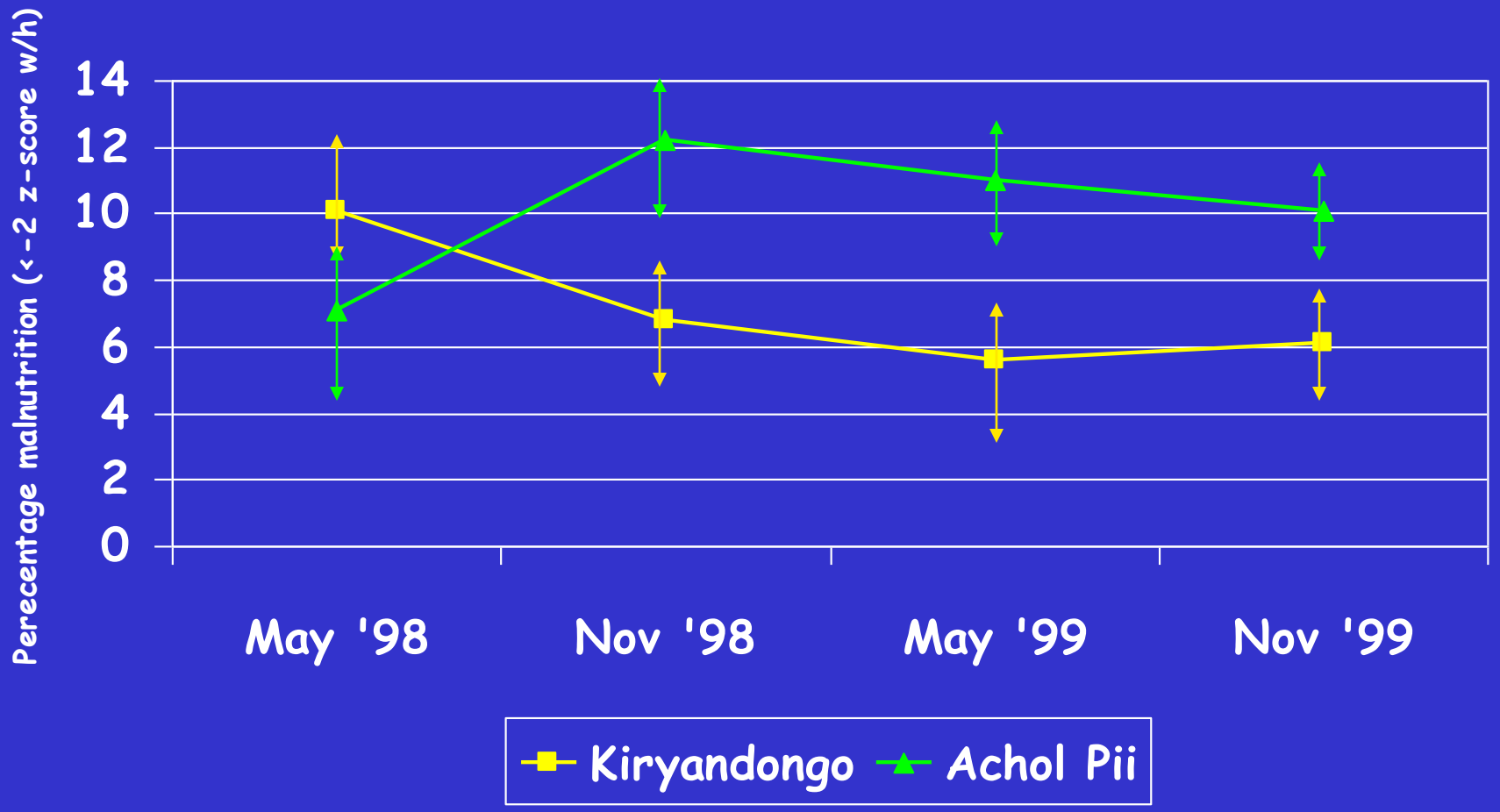
Distribution of weight-for-height z-scores for children 6-59 months of age, by dzud, Mongolia Nutrition Survey, June 2001.



Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. Design a questionnaire
5. Sampling design and implementation
7. Logistics, equipment, and survey team
8. Data entry and analysis
9. **Interpretation of results**
10. Preparation and dissemination of report
11. Take action

Prevalence of Malnutrition: Sudanese refugee camps, Uganda (1998- 99)



Source: WFP/UNHCR 2001

Interpretation: Other factors

- Trends and change
- Confidence Intervals (CI)
- Seasonality
- Intervention cut-offs and benchmarks (MSF, RNIS)
- Aggravating factors or risks
- Baseline or ‘normal’ prevalence
- Prevalence of other types of malnutrition e.g. MDDs, chronic malnutrition
- Mortality levels

Bench-marks of levels of wasting used to guide intervention (MSF 1995, WHO 2000)

Malnutrition prev >20%

Malnutrition prev 10-19% with aggravating factors

→ **SERIOUS**

Blanket SFP, TFP

Malnutrition prev 10-19%

Malnutrition prev 5- 9% with aggravating factors

→ **ALERT**

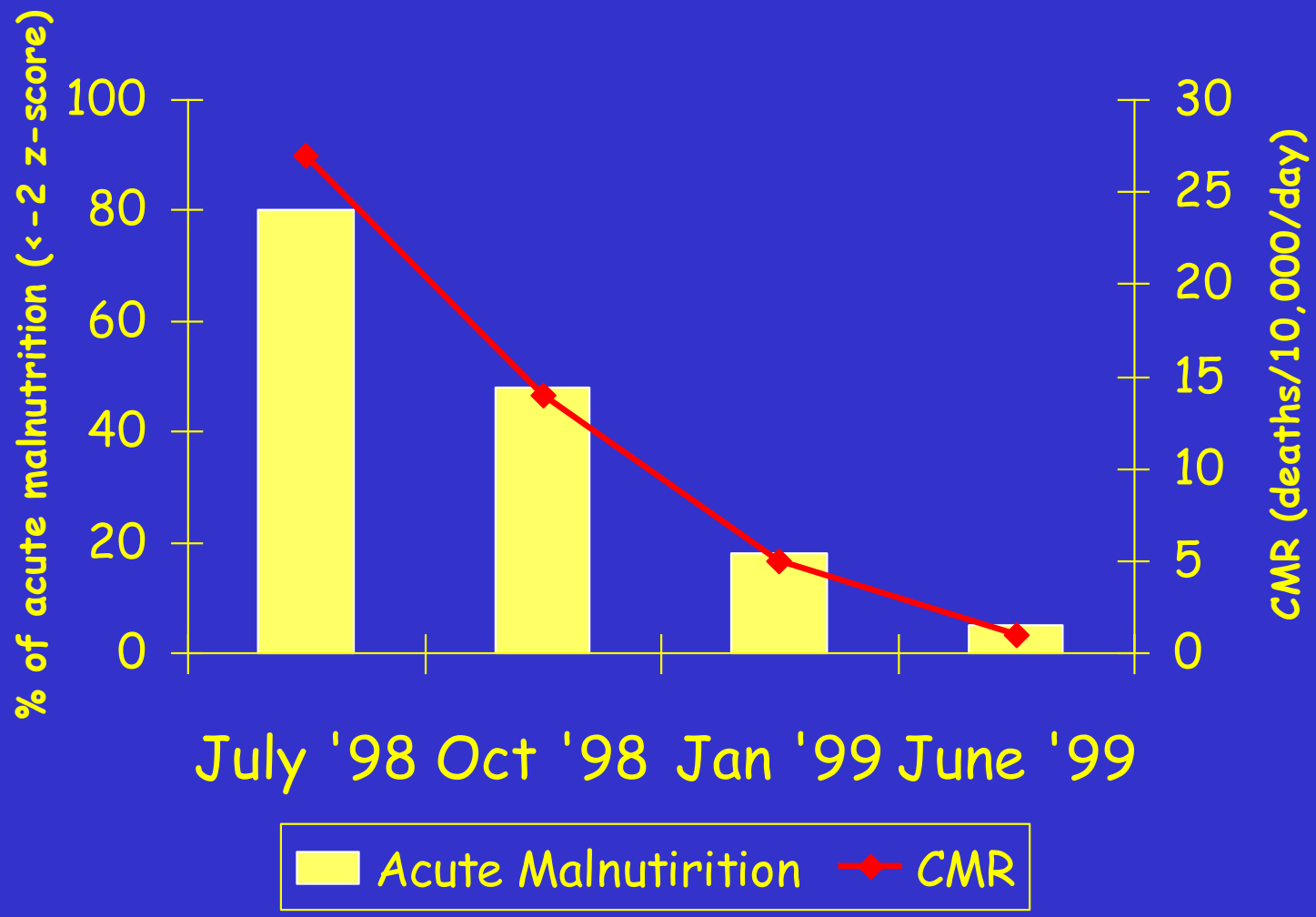
SFP, TFP

Malnutrition prev <10%

→ **"ACCEPTABLE"**

No specific intervention, surveillance

Malnutrition and Mortality



Source: ACC/SCN 4th Report, 2000

Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. Design a questionnaire
5. Sampling design and implementation
7. Logistics, equipment, and survey team
8. Data entry and analysis
9. Interpretation of results
10. **Preparation and dissemination of report**
11. Take action

Preparation of report

- Executive Summary
- Background
  - **description of context**
  - **rationale for survey**
  - **participants and date**
- Goals and objectives
  - **“to determine the prevalence of acute malnutrition among under five year olds”.**
  - **the questions that need to be answered**
- Methods
  - **sampling framework, sampling methodology and sample size, questionnaire, case definitions for morbidity, training, quality control**

Preparation of report (cont)

- Results
  - **description of survey sample**
  - **prevalence based on weight for height z-score (also by age groups), graphs, prevalence of diseases**
  - **other analyses**
- Discussion
  - **comparison with previous surveys (trends)**
  - **discussion of seasonal variation on nutritional status**
  - **underlying causes**
  - **information from secondary sources e.g mortality, food security**
  - **limitations of survey**

Preparation of report (cont)

- Recommendations
  - **relate to objectives**
  - **specific and practical**
- Appendices
  - **maps**
  - **populations figures**
  - **calculations of sample size**
  - **example of questionnaire**

Dissemination of Report

- Timeliness
- Feedback to local authorities
- Feedback to survey team
- Distribute report widely
- Refugee Nutrition Information System (RNIS)

Surveys: Tasks and Important Steps

1. Determine broad questions to be answered
2. Determine objectives and outcomes to be measured
3. Define the sampling frame
4. Design a questionnaire
5. Sampling design and implementation
7. Logistics, equipment, and survey team
8. Data entry and analysis
9. Interpretation of results
10. Preparation and dissemination of results
11. **Take action**

Take Action

- Interpret and understand findings
- Review and revise programme objectives
- Advocate for resources e.g. food pipeline or access to clean water
- Address underlying causes of poor health or nutrition
- Increase coverage of programmes
  - Vaccination, food aid, SFPs
- Close emergency selective feeding
- Use findings as part of wider country information system

Role of UNICEF in Surveys?

- Advocate for universally accepted best practice data collection methods
- Develop national protocols with Government
- Provide equipment
- Provide technical support
- Provide training
- Establish data base (map etc)
- Ensure findings are used appropriately, especially in UNICEF programmes
- Ensure that there is in-country capacity for doing valid surveys (emergency preparedness)

Conclusions and Review

- An appropriate response requires a good understanding
- A rapid nutrition and health assessment survey is one useful tool for understanding extent and severity of the public health problem
- A good survey:
  - Requires good planning and preparation
  - Is based on standardized data collection methods

Conclusions and Review

- **Prevalence of malnutrition:**
  - Should be reported using standard nutritional indices
  - Should be interpreted in the context of other information
- **UNICEF has an important role in broadening and strengthening good practice in nutritional survey methodology in emergencies**

Constraints of nutritional surveys

"…..Expensive nutritional status surveys have become so common over the years that people can rightly ask whether we are getting any kind of return at all on an investment in more surveys, at least as they have traditionally been undertaken - often measuring for the sake of measuring…"

(Berg, 1991)

Constraints of nutritional surveys