

> Answers: Using Health Information

Modules 1 & 2 – Population and Mortality

Q1

You are the Medical Officer in a camp. It is the end of the reporting month, and you are busy compiling the statistics for the Monthly Report.

(a) Look at Table 1. How is this information currently collected in your camp(s)?

A combination of sources is generally required to obtain a comprehensive population figure. For example:

- *Refugee registration is increasingly being computerised in the proGres database;*
- *Birth and death registers may be maintained by health partner, government and UN agency sources;*
- *Voluntary repatriation and resettlement may be similarly managed by separate government agencies or implementing partners.*

Age and sex-specific data required for indicators within the health information system are often not available through regular data sources. These are sometimes collected through surveys or verification campaigns. Other population sub-groups (for example pregnant and lactating women) can only be quantified using standard age distributions - see Q1(b).

(b) Complete the missing indicator values for Females 15-49 and Pregnant and Lactating women, using agreed population estimates in the Standard and Indicator Guide.

See Table 1

Table 1

Population	Male	Female	Total
Total Population	16975	17667	34642
Number of live births	60	58	118
Number of infants <1 year	694	602	1296
Number of children <5 years	3332	3291	6623
Number of females 15-49 years @ 20%		6928	
Number of pregnant and lactating @ 4%		1386	

Q2

Look at Table 2 showing the number of age-specific deaths this month.

(a) Using the population figures in Table 1, calculate the following mortality rates per 1000 population per month:

(Hint – Use Standard and Indicator Guide to help with formulae)

- i. Crude Mortality Rate $(23 / 34642 * 1000) = 0.7/1000/month$
- ii. Under Five Mortality Rate $(17 / 6623 * 1000) = 2.6/1000/month$
- iii. Crude Male Mortality Rate $(10 / 16975 * 1000) = 0.6/1000/month$
- iv. Under Five Female Mortality Rate $(12 / 3291 * 1000) = 3.6/1000/month$

(b) Compare your results with the benchmarks in the Standards and Indicators Guide. Are any results of concern? What else would you like to know?

Female U5MR > 3.0 / 1000 / month

We need to know:

- **Who** is dying? (age-specific groups; <1 or <28 days)
- **What** are they dying from (cause-specific mortality rates, line listings)
- **Where** are they dying (is one camp experiencing higher rates than others?)

Table 2

Mortality by Age	Refugee			National	
	< 1	≥ 1 < 5	≥ 5	< 5	≥ 5
Male	3	2	5	1	1
Female	8	4	1	0	0

Q3

You have now received information on the causes of the deaths that occurred during the month (see Table 3).

(a) Calculate the following crude or under five proportional mortality rates for the following diseases (as specified):

- i. Malaria (U5) $(8 / 17 * 100) = 47\%$
- ii. LRTI (U5) $(2 / 17 * 100) = 12\%$
- iii. Tuberculosis (Crude) $(1 / 23 * 100) = 4\%$

(b) Calculate the following mortality indicators:

- i. Neonatal Mortality Rate $(3 / 118 * 1000) = 25.4/1000 \text{ live births / month}$
- ii. Maternal Mortality Ratio $(1 / 118 * 100000) = 847.5/100 \text{ 000 live births / month}$
- iii. Look at the Standards and Indicators Guide. How would you interpret these results and what would your next steps be?

Neonatal Mortality Rate (NNMR) within acceptable limits (<40 / 1000 livebirths / month)

Maternal Mortality Ratio (MMR) unstable and monthly figures are not useful in isolation. Need to analyses over longer periods. Most useful at this stage would be line listing of maternal deaths to investigate each on case-by-case basis

(c) Now calculate the Infant Mortality Rate. Is this within acceptable limits? How does this help explain the U5MR calculated in Q2, and what would your response be to this information?

*Infant Mortality Rate (IMR) = $(11 / 118 * 1000) = 93.2 / 1000 \text{ livebirths / month}$.
IMR >> 60 and very high. This is likely to be a major contributory factor to raised U5MR in Q2.*

Need to confirm that high cause-specific U5MR to malaria is predominately among Under 1s. Look at camp Mortality Registers or line listings for more detailed records. Also investigate further the reasons for high number of deaths (e.g. assess risk factors for malaria transmission / community health education / coverage of ITN distribution / case management practices).

Table 3

Mortality by Cause	Refugee					Total Crude	National		Total
	< 5		Total < 5	≥ 5			< 5	≥ 5	
	Male	Female		Male	Female				
1. Malaria (confirmed)	2	6	8	3	0	11	1	0	1
2. LRTI	0	2	2	0	0	2	0	0	0
3. Watery diarrhoea	0	0	0	0	0	0	0	0	0
4. Bloody diarrhoea	0	0	0	0	0	0	0	0	0
5. Tuberculosis	0	0	0	1	0	1	0	0	0
6. Measles	0	0	0	0	0	0	0	0	0
7. Meningitis	1	0	1	0	0	1	0	0	0
8. AIDS	0	0	0	0	0	0	0	0	0
9. Maternal death					1	1		0	0
10. Neonatal death	1	2	3			3			0
11. Acute malnutrition	0	0	0	0	0	0	0	0	0
Other	1	2	3	1	0	4	0	1	1
Total	5	12	17	5	1	23	1	1	2