> Answers: Using Health Information

Module 7: Part 1 – Expanded Programme of Immunization (EPI)

Q1

You are the MCH supervisor, preparing the EPI Report at the end of the month. The total camp population 15, 750 and the under 1 population is 630.

(a) Refer to the sample data provided in Table 1. Using the Standard and Indicator Guide, calculate the following vaccine coverage rates:

Target Population for EPI = Under 1 population / 12 = 630 / 12 = 53

i. BCG *(50 / 53 *100) = 94%*
ii. Polio *(48 / 53 *100) = 91%*
iii. DPT *(56 / 53 *100) = 106%*
iv. Measles *(59 / 53 *100) = 111%*
v. Full Vaccination *(59 / 53 *100) = 111%*

*(**NOTE**: we need children who have finished the FULL course of each antigen, i.e. Polio III and DPT III. Discuss possible reasons for DPT and Measles being > 100%)*

(b) Is Measles coverage always the same as Full Vaccination coverage?

No. Measles vaccination is not always the same as full vaccination coverage, and does not always indicate completion of the routine EPI schedule. Full vaccination should be verified independently based on information in the Road to Health Card.

Table 1

Children Vaccinated	Refugee		National
	< 1	≥ 1	
BCG	50	0	6
Polio 0	65	0	8
Polio I	77	0	0
Polio II	54	0	0
Polio III	48	0	0
DPT I	60	0	0
DPT II	52	0	0
DPT III	56	0	0
Measles	59	0	0
Fully Vaccinated	59	0	0

Q2

(a) Calculate the program dropout rate. Is this acceptable?

Program drop-out rate = 60 – 56 / 60 = 6.7%

This <10% which is acceptable and implies that children who receive initial DPT dose are "highly likely" to receive all 3 required doses.

(b) Can you think of another way in which this could be measured?
Program Drop out can also be measured using Polio I – Polio III records, though DPT I – III is the most accepted measure.

Q3

Look at the Vaccine Stock Record Form below. This gives information on the number of vials of vaccine distributed to the camp during the month.

(a) Use the Stock Record Form to enter the number of doses of vaccine supplied to the camp in Table 3.
See Table 3

(b) Use the information given in Table 1 to calculate the number of doses of vaccine that were administered during the month and enter into Table 3.
See Table 3

(c) Use the completed information in Table 3 to calculate the missing indicators for vaccine wastage. Are any of these of concern?
See Table 3. BCG vaccine wastage is unacceptably high. Discuss possible reasons (e.g. break in cold chain; expiry of vaccine; low numbers of children/session) and think of strategies to reduce wastage (e.g. improved refrigeration checks; lower frequency of sessions).

Vaccine Stock Record Form

Vaccine	Number of vials supplied	Number of doses per vial
BCG	15	20
Polio	13	20
DPT	17	10
Measles	6	10

Table 3

Vaccine Wastage	No. of doses supplied	No. of doses administered	Vaccine wastage rate
BCG	*300*	*56*	*(300 – 56 / 300) = 81.3%*
Polio	*260*	*252*	*(260 – 252 / 260) = 3.1%*
DPT	*170*	*168*	*(170 – 168 / 170) = 1.2%*
Measles	*60*	*59*	*(60 – 59 / 60) = 1.7%*

Q4

(a) Do we calculate antenatal tetanus toxoid (TT) coverage in the same way as for the other EPI vaccines? Give an explanation for your answer.
No. Antenatal t*etanus toxoid coverage is measured among pregnant women. It differs to the other EPI antigens as coverage is not measured directly at the time of vaccination. It is an indirect measure calculated at the time of delivery.*

(b) Do you know how antenatal TT coverage calculated and where the information comes from?

It is calculated as the proportion of pregnant women who received at least 2 doses of TT (or were fully vaccinated) at the time of delivery. The data is reported using the Antenatal Register and the Antenatal Tally Sheet.

Q5

The next month, you calculate that DPT coverage has fallen to 73%.

(a) List three reasons that could explain this.

Possible reasons for lowered coverage could be:

- *high drop out rate (e.g. low service quality, inaccessibility, poor defaulter tracing)*
- *high wastage rate (e.g. break in cold chain, expiry of vaccine)*
- *increase in denominator (e.g. sudden repatriation, mass outflux)*
- *decrease in numerator (e.g. sudden increase in IMR, sudden decrease in CBR)*

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Module 7: Part 2 – Growth Monitoring

Q6

You are working in the growth monitoring section of one of the camps. Over the course of 7 months, you observe the following trends in the weight of one of the children.

Weight Trend

Age (months)	6	7	8	9	10	11	12
Weight (kg)	6.5	6.8	6.9	6.9	6.8	7.0	7.1

(a) Plot the figures in the road to health chart provided. Describe what you see. How could you explain what has happened?

Weight faltered around 9 – 10th month. Illness (e.g. diarrhoea) is a likely cause. Other contributory factors include social care or a nutritional deficit (think of conceptual model of malnutrition)

(b) The child returns aged 16 months, and is at the same weight as when aged 12 months. What would your next steps be?

Weight for age has now dropped to <60%. The child should be referred to the nutrition centre for WFH measurement, and enrolled in SFP or TFP if anthropometric criteria are met.

Q7

At the end of the month you receive the monthly growth monitoring data shown in Table 4. The total population is 30, 319, under five population is 6, 064.

(a) Calculate the coverage of growth monitoring

(Hint – think carefully about the denominator: what is the target population and how often do they attend for growth monitoring?)

Target population in growth monitoring is every child U5 each month = 6064.
Coverage of growth monitoring = 5694 / 6064 = 94%

(b) Look closely at this information. Are any figures of concern? What action would you take and where else could you look in the HIS to corroborate this had occurred?

- *1 reported case of oedema is of concern and sufficient for immediate diagnosis of severe malnutrition and admission to TFP.*
- *2 cases < 60% WFA should have WFH measurements taken and be enrolled into SFP if appropriate.*
- *The information could be validated by also looking at SFP/TFP registers and weekly Nutrition Report, to determine if children had been admitted.*

Table 4

Number of children screened	< 1	≥ 1 - 5
weight for age >80%	113	5146
weight for age 60 - 80%	54	378
weight for age < 60%	0	2
oedema	1	0