TASK 7.1 ■ CALCULATING COST PER UNIT

To work out the unit cost, you divide the total expenditure by the number of deliverables. This equals what the program paid **on average** for each thing that it delivered.

DELIVERY UNIT = What a program delivers or buys (for example, hospital beds, drugs, clinics, school desks, buses, etc.)

Cost = What was paid for it.

The formula is:

$$\text{Unit cost} \quad = \quad \frac{\textbf{Total expenditure}}{\textbf{Number of units delivered}}$$

1. **Now work out the unit cost of each of the drugs purchased by each of the three peri-urban PHCs SeDeN looked at in Mortalia.**
   First, identify:

   a) How much was spent by Aljana PHC on

   Amoxicillin? _____

   Folic Acid? _____

   Paracetamol? _____

   How much was spent by Corcora PHC on

   Amoxicillin? _____

   Folic Acid? _____

   Paracetamol? _____

   How much was spent by Sorulia PHC on

   Amoxicillin? _____

   Folic Acid? _____

   Paracetamol? _____

   b) How many boxes of each drug did Aljana PHC purchase?

   Amoxicillin _____

   Folic Acid _____

   Paracetamol _____

How many boxes of each drug did Corcora PHC purchase?

Amoxicillin   _____

Folic Acid   _____

Paracetamol _____

How many boxes of each drug did Sorulia PHC purchase?

Amoxicillin   _____

Folic Acid   _____

Paracetamol _____

You now have all the figures you need to do the calculation. What are your findings? What was the unit cost of each drug for each of the PHCs? Record your findings here:

COST PER UNIT			
	ALJANA	**CORCORA**	**SORULIA**
AMOXICILLIN			
FOLIC ACID			
PARACETAMOL			

2. **How much more did the clinics pay per unit than they needed to?** The formula for in this case would be:

Over-expenditure per unit   = $\dfrac{\text{Invoice unit price} - \text{best retail unit price}}{\text{Best retail unit price}}$ x 100

a) The best unit prices that SeDeN was able to identify were:

Amoxicillin: D 2.99

Folic Acid: D 1.55

Paracetamol: D 1.39

b) You just calculated the unit price for each of the drugs in each of the PHCs.

c) Using the formula provided, what are your findings?

OVER-EXPENDITURE PER UNIT			
	ALJANA	CORCORA	SORULIA
AMOXICILLIN			
FOLIC ACID			
PARACETAMOL			

3. **How much more of each medicine would each PHC been able to buy had they bought at this best retail price?**

Here is the formula for determining the amount of additional drugs the PHCs would have been able to buy:

$$\text{Possible extra quantity of medicine} \quad = \quad \frac{\text{Total on invoice}}{\text{Retail unit price}} - \quad \text{Invoice quantity}$$

What was the total amount paid by each of the PHCs for each of the three drugs?

Aljana

    Amoxicillin _____

    Folic Acid   _____

    Paracetamol _____

Corcora

    Amoxicillin _____

    Folic Acid   _____

    Paracetamol _____

Sorulia

    Amoxicillin _____

    Folic Acid   _____

    Paracetamol _____

b) What was the invoice quantity for each of the drugs in each of the PHCs?

Aljana

    Amoxicillin _____

    Folic Acid   _____

    Paracetamol _____

Corcora

    Amoxicillin _____

    Folic Acid   _____

    Paracetamol _____

Sorulia

    Amoxicillin _____

    Folic Acid   _____

    Paracetamol _____

a) You now have all the information you need to calculate how much more of each drug the PHCs would have been able to buy had they bought at the retail prices SeDeN identified.

POSSIBLE ADDITIONAL DRUGS			
	ALJANA	**CORCORA**	**SORULIA**
AMOXICILLIN			
FOLIC ACID			
PARACETAMOL			

4. What conclusions can you draw in budget terms about wastage by PHCs in the peri-urban communities of Mortalia?

_____

_____

_____

5. What conclusions can you draw in human rights terms about wastage by PHCs in the peri-urban communities of Mortalia?

_____

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TASK 7.2 ■ COMPARING BUDGETED AND ACTUAL EXPENDITURE

One way to assess under-spending is by calculating the "rate" of spending; that is, the percentage of the budgeted amount (the "allocation") that was actually spent.

- **Allocation:** What the government projects at the beginning of the financial year that it will spend during the year for an MDA or program. Sometime this is titled "Budget" or "Budgeted" in an MDA or program budget. Some countries adjust these budgeted figures midway through the year and call the result "Adjusted Estimates."

- **Actual expenditure:** What MDAs and programs really end up spending. Actual expenditures may be presented in a financial report before they are audited. Expenditures that have been audited are often titled "Audited Expenditures."

- The formula used to calculate an MDA's or program's rate of spending (which is expressed as a percentage) is as follows:

$$\text{Rate of spending} = \frac{\text{Actual expenditure}}{\text{Allocation or budget}} \times 100$$

1. Calculate the rate of spending on Salaries, Medicines, Medical Equipment, and the Total Budget for the three peri-urban PHCs in Mortalia.

Aljana PHC	2010	2009	2008
Current Payments			
Salaries			
Goods and Services			
Medicines			
Payments for Capital Assets			
Medical Equipment			
Total			

Corcora PHC	2010	2009	2008
Current Payments			
Salaries			
Goods and Services			
Medicines			
Payments for Capital Assets			
Medical Equipment			
Total			

Sorulia PHC	2010	2009	2008
Current Payments			
Salaries			
Goods and Services			
Medicines			
Payments for Capital Assets			
Medical Equipment			
Total			

2. What conclusions can you draw in budget terms about underspending by PHCs in the peri- urban communities in Mortalia?

   _____

   _____

   _____

   _____

3. What conclusions can you draw in human rights terms about underspending by PHCs in the peri-urban communities in Mortalia?

_____

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TASK 7.3 ■ CALCULATING BUDGET SHARES

The formula for calculating budget shares is:

$$\textbf{Share of the budget} \quad = \quad \frac{\textbf{Section of the budget}}{\textbf{Whole budget}} \quad \textbf{x 100}$$

a. What was the total PHC budget in Mortalia for 2008? _____

   How many PHCs were there in Mortalia in 2008? _____

   Using these two pieces of information, calculate the average allocation to PHCs in 2008.

   What share of the total PHC budget did the average PHC receive in 2008?

b. Calculate the share of the total 2008 PHC budget allocated to Aljana PHC.

   How does this share compare with the share received by the average PHC?

   _____

   _____

   _____

   _____

Optional Task: How would your finding for Question 2 differ if you used audited expenditure rather than the budgeted allocation?

c. Calculate the average share of the budget allocated to Mortalia PHCs for each year from 2008 to 2011.

d. Calculate the share of the budget allocated to the three peri-urban PHCs for each year from 2008 to 2011. Record your answers to this exercise (and to Question 3) in the chart below.

Shares of the Mortalia PHC Budget

	Aljana	**Corcora**	**Sorulia**	**Average PHC**
2008				
2009				
2010				
2011				

5. What do you observe about the budget shares of the peri-urban PHCs compared to the average share for PHCs in Mortalia? And over the years, from 2008 to 2011?

_____

_____

_____

6. How might you frame your findings about the budget shares of the peri-urban PHCs in human rights terms?

    _____

    _____

    _____

TASK 7.4 ■ ADJUSTING FOR INFLATION

- Inflation affects the "buying power" of a given currency with the result that if, for example, certain goods or services cost D100 this year, they will likely cost more next year (e.g., D105). Thus, in comparing governments' budgets from year to year, it is important to take inflation into account. What may look like an increase in a budget from one year to the next may, in fact, represent a decrease in "buying power."

- When budget figures are adjusted for inflation, they normally are adjusted so that the relevant past years' budget figures are expressed in the current year's value (or the value of the most current year that is relevant to the issue). To make the necessary adjustment, use this formula (CPI = Consumer Price Index; see Glossary):

$$\frac{\textbf{Nominal value of prior year x CPI of most recent year}}{\textbf{CPI of prior year}} = \begin{array}{c} \textbf{Adjusted "real" value} \\ \text{(in most recent year value)} \end{array}$$

1. Adjust the budget allocations (not audited expenditures) for each of the three PHCs and the average PHC in Mortalia for 2008 to 2011 to get "real" budget figures in 2011 terms. Record your answers in the chart below.

	2011 budget	Real 2010 budget in 2011 terms	2010 budget	Real 2009 budget in 2011 terms	2009 budget	Real 2008 budget in 2011 terms	2008 Budget
Aljana	547,524		362,959		355,318		347,228
Corcora	324,579		294,087		283,960		278,640
Sorulia	435,620		288,485		289,081		294,104
Average PHC	825,886		612,251		621,142		541,956

TASK 7.5 ■ CALCULATING BUDGET GROWTH (NOMINAL AND REAL)

- When determining growth in a budget over the course of several years, it is important to first adjust the budget figures to take inflation into account. An apparent growth in a budget when nominal figures are used may prove to be shrinkage when real figures are used.

- The formula for working out growth in budget amounts over time is:

 Growth in budget   =   Amount in most recent year – Amount in prior year   x 100
 Amount in prior year

1. Calculate growth in the Aljana budget in nominal terms from 2008 to 2009:

   First, establish how much was allocated to Aljana PHC in 2008: _____

   Then look up how much was allocated to Aljana PHC in 2009: _____

   Now you have all the figures that you need in order to do the calculation. What was the <u>nominal</u> growth in the budget from 2008 to 2009? _____

2. Calculate real growth in the Aljana budget from 2008 to 2009:

   How much was allocated to Aljana PHC in 2008 in nominal terms? _____

   How much was allocated to Aljana PHC in 2009 in nominal terms? _____

   Adjust the 2008 figure for inflation (in 2009 real terms). When you do that, your budget figure for 2008 is_____.

   Now you have all the figures that you need in order to do the calculation. What was the <u>real</u> growth in the budget from 2008 to 2009? _____

3. Working in your Polarus groups, fill out the following chart:

Growth in Mortalia PHC budgets in real terms, 2008–2011

	2011	Growth 2010-2011	2010	Growth 2009-2010	2009	Growth 2008-2009	2008
Aljana							
Corcora							
Sorulia							
PHC Average							

4. What are your findings about real growth in Mortalia's PHC budgets?

_____

_____

_____

_____

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_____

5. What conclusions can you draw in human rights terms about real growth in Mortalia's PHC budgets?

_____

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TASK 7.6 ■ CALCULATING PER CAPITA ALLOCATIONS (OR SPENDING)

Per capita is Latin for per head; that is, per person.

The formula for calculating a *per capita* allocation is:

$$\textbf{Per capita allocation} \quad = \quad \frac{\textbf{Allocation}}{\textbf{Population}}$$

The same formula could be used to calculate spending *per capita*, simply by substituting expenditure for allocation.

1. Calculate the *per capita* allocation in 2008-2011 for primary health care for residents in the Aljana community.

   First, what was allocated to the Aljana PHC in 2008? _____

   2009? _____

   2010? _____

   2011? _____

   What was the estimated population of the Aljana community during these years?

   _____

   Now you have all the figures that you need to do the calculation:

2. Calculate the *per capita* allocations over the given years for the remaining two peri-urban PHCs and the average *per capita* allocation to Mortalia's PHCs. Record all your answers in the following chart.

	2011	2010	2009	2008
Aljana				
Corcora				
Sorulia				
PHC Average				

3. How do the *per capita* allocations to the three peri-urban PHCs compare to the average for PHCs in Mortalia? And to the *per capita* standard established by the Polarus Ministry of Health?

_____

_____

_____

_____

4. What conclusions can you draw in human rights terms about *per capita* allocations to the PHCs in the peri-urban communities of Mortalia?

_____

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TASK 7.7 ■ DIAGNOSING THE BUDGET PROBLEM

1. Review all of the findings that you have gathered in Module 5, Module 6, and Module 7 about the health situation in the peri-urban areas of Mortalia. Extract and list the most relevant and useful findings below:

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_____

_____

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Decide within your group: What are the main budget problems causing poor health care provision in these peri-urban areas?

_____

_____

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TASK 7.8 ■ WHICH CALCULATION? WHICH CHART?

1. You suspect that the share of the Sunrise State budget going to Sanitation may be shrinking. To diagnose whether this is the case, would you calculate:

    a) the size of its percentage share over time? **–** *or–*

    b) real growth in spending on Sanitation over time?

    Which calculation would you choose and why?

    _____

    _____

    _____

    _____

    _____

2. To show that the share of the Sunrise State budget going to Sanitation is shrinking, it would be best to use a bar chart or graph, not a pie chart. True or False? Please justify your answer.

    _____

    _____

    _____

3. If you suspect that the Department of Health of Sunrise State is underfunded:

    a) Which calculations would you use to test this hypothesis? Why?

    _____

    _____

    _____

b) What kind of chart or graph would you use to show your findings? Why?

_____

_____