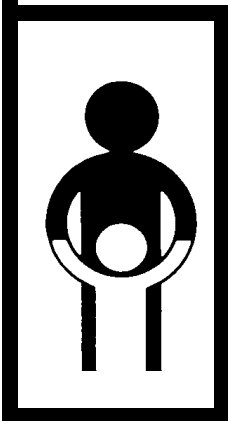


# Module 11:

# Monitoring immunization coverage



**GLOBAL PROGRAMME FOR VACCINES AND IMMUNIZATION**

**EXPANDED PROGRAMME ON IMMUNIZATION**



*World Health Organization, Geneva, 1998*

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# About this module

The purpose of monitoring immunization coverage is to determine how many immunizations are performed in a given period. Through monitoring you can assess how well you are doing and what improvements you should make. By reporting coverage to your supervisors you inform them of your progress and help them to plan how to support you.

The following activities are associated with monitoring immunization coverage:

- recording immunizations when they are given;
- reporting coverage;
- using an immunization monitoring chart;
- interpreting coverage data;
- identifying problems and their causes;
- taking action to increase coverage.

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# 1. Recording immunizations when they are given

Every health centre needs a system for keeping track of immunizations. Health workers record each client's immunizations in patient registers and on immunization cards.

Tally sheets help health workers to count the number of immunizations they give with each vaccine and each dose in a day. They are used for recording:

- children's immunizations;
- tetanus toxoid immunizations;
- children protected at birth from neonatal tetanus.

Following is a sample tally sheet with instructions for use.

Figure 11-A: Tally sheet

SAMPLE

Health Centre: \_\_\_\_\_ Date: \_\_\_\_\_

**Daily Tally Sheet**  
For Recording Immunizations and  
Children Protected At Birth Against Neonatal Tetanus

	Children Under one year of age			TOTAL	Children Over one year of age			TOTAL
	0000	0000	0000		0000	0000	0000	
BCG	0000	0000	0000		0000	0000	0000	
OPV Zero	0000	0000	0000		0000	0000	0000	
OPV 1	0000	0000	0000		0000	0000	0000	
OPV 2	0000	0000	0000		0000	0000	0000	
OPV 3	0000	0000	0000		0000	0000	0000	
DPT 1*	0000	0000	0000		0000	0000	0000	
DPT 2	0000	0000	0000		0000	0000	0000	
DPT 3	0000	0000	0000		0000	0000	0000	
Measles	0000	0000	0000		0000	0000	0000	

*\*All children who receive DPT 1 should be assessed for protected at birth against neonatal tetanus*

**Women of childbearing age**

	Pregnant			TOTAL	Non-Pregnant			TOTAL
	0000	0000	0000		0000	0000	0000	
TT 1	0000	0000	0000		0000	0000	0000	
TT 2	0000	0000	0000		0000	0000	0000	
TT 3	0000	0000	0000		0000	0000	0000	
TT 4	0000	0000	0000		0000	0000	0000	
TT 5	0000	0000	0000		0000	0000	0000	

**Children protected at birth against neonatal tetanus**

Child IS protected against neonatal tetanus at birth	TOTAL	Child NOT protected against neonatal tetanus at birth	TOTAL
0000 0000 0000		0000 0000 0000	
0000 0000 0000		0000 0000 0000	

Instructions follow for completing a tally sheet.

### 1.1 Record children's immunizations

After you have immunized a child, record the date on her or his immunization card (see Module 8) and **cross off one of the 0s on the tally sheet**. If the child is under 1 year of age, cross off a 0 in the column headed "Children under 1 year of age". If the child is older, cross off a 0 in the other column.

**Figure 11-B: Portion of a tally sheet with "0's" crossed off**

PLACE: Mugumo Village				DATE: 14 July 1986		
Less than 1 year old				1 year and older		
BCG	<del>0000</del>	00000	00000	<del>00000</del>	00000	00000

## 1.2 Record tetanus toxoid immunizations

After you have immunized a woman, record the date on her immunization card (see Module 8) and cross off one of the 0s in the tetanus toxoid section of the tally sheet. If the woman is pregnant, cross off a 0 in the column headed "Pregnant". If she is not, cross off a 0 in the "Non-pregnant" column.

## 1.3 Record children protected at birth from neonatal tetanus

When a child receives DPT1 vaccine you should determine whether he or she was protected at birth against neonatal tetanus. If all women of childbearing age are up-to-date with their tetanus toxoid immunizations, then all children brought for DPT1 will have been protected at birth against neonatal tetanus.

Ask every mother who comes with a child for a DPT1 immunization for her immunization card.

If she has a card:

- 1) Check how many **valid** doses of tetanus toxoid she has received. A dose is valid when the minimum required interval between doses has been observed, as shown below.

Between doses	Minimum interval
TT1 and TT2	4 weeks
TT2 and TT3	6 months
TT3 and TT4	1 year
TT4 and TT5	1 year

- 2) Determine the **period of protection** given by the number of doses the mother has had.

Number of valid doses	Period of protection
One	None.
Two	3 years, starting 15 days after the date of the second dose.
Three	Three
Four	10 years, starting 15 days after the date of the fourth dose.
Five	All the children years.

- 3) Ask when the child who is receiving DPT1 was born.
  - If the child was born **during** the period of protection provided by the last valid dose, cross off a 0 in the “Child protected at birth” column of the tally sheet.
  - If the child was born **after** this period of protection, cross off a 0 in the “Child not protected at birth” column.
- 4) Check the woman's immunization card to see whether she is eligible for a dose of tetanus toxoid.
  - If she is eligible, immunize her, record the date on her immunization card, and cross off a 0 in the correct column of the tally sheet.
  - If she is NOT eligible, tell her when to return for her next dose of tetanus toxoid.

If she does NOT have a card:

- 1) Cross off a 0 in the “Child not protected at birth” column of the tally sheet.
- 2) Immunize the woman with TT1. Give her an immunization card and enter the date on the card for TT1.
- 3) Cross off a 0 for TT1 in either the “Pregnant” or “Non-pregnant” column of the tally 32 sheet.

#### 1.4 Complete the tally sheet at the end of a session

At the end of each immunization session, count the number of 0s that you have crossed off. This tells you the number of immunizations you have given with each vaccine and each dose.

**Remember:**

- **Mark the tally sheet each time you give a vaccine.**
- **If you wait you may forget.**

---

## 2. Reporting coverage monthly

At the end of each month, every health centre should complete and submit an immunization coverage report to its district. Prepare the monthly report as indicated below.

- 1) Gather all the tally sheets completed during the month.
- 2) Add together the numbers of immunizations given, by vaccine and dose, to:
  - children under 1 year of age;
  - children above 1 year of age;
  - pregnant women;
  - non-pregnant women of childbearing age.
- 3) Add the number of children that you assessed during the month as having been protected at birth.
- 4) Fill in a monthly immunization report form (see below).
- 5) Use the numbers to complete immunization monitoring charts (see below).
- 6) Give a copy of the report to your supervisor by the due date.

**Figure 11-C: Monthly immunization report**

EXERCISE A and B

**Immunization Monitor Chart**

Health Facility: \_\_\_\_\_ Annual target population: \_\_\_\_\_

Year: \_\_\_\_\_ Vaccine: \_\_\_\_\_ Minimum coverage target for the year: \_\_\_\_\_

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
												Total immunized this month
												Cumulative total for the year
												Total immunized this month
												Cumulative total for the year

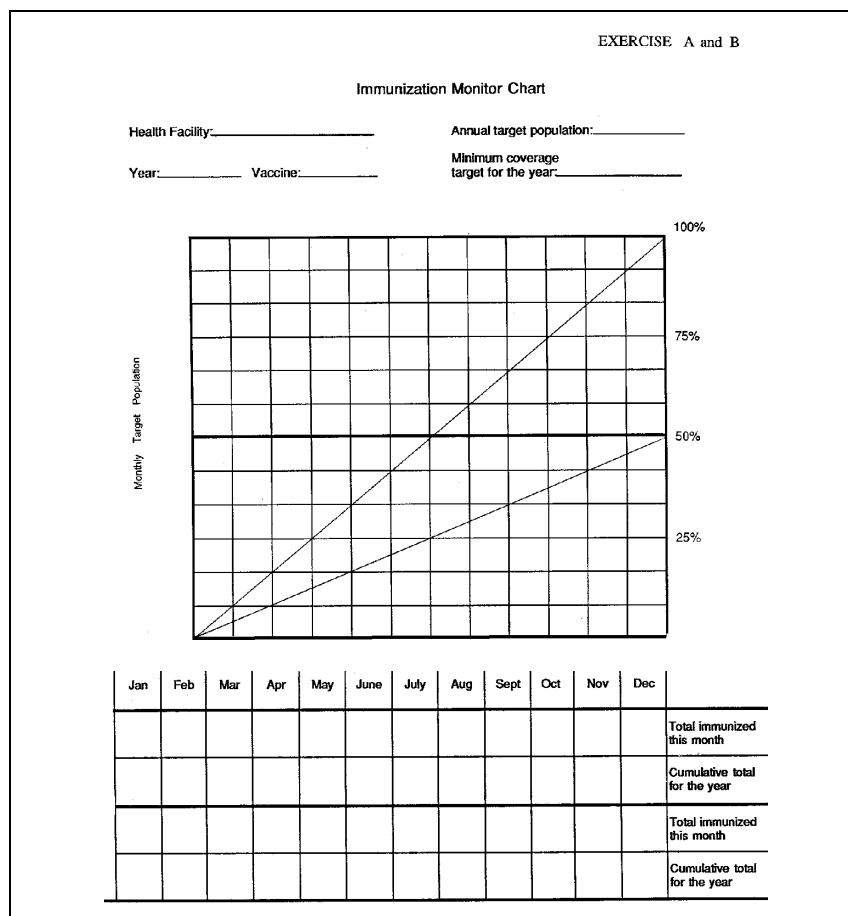
# 3. Using an immunization monitoring chart

An immunization monitoring chart shows the progress you are making in raising immunization coverage in your health centre catchment area. It summarizes the information given in monthly immunization reports (see above).

This chart enables you to compare the number of people you actually immunize each month with your coverage targets.

A blank immunization monitoring chart is shown below, and instructions follow for preparing and using it for children's and tetanus toxoid immunizations and for assessments of protection at birth.

**Figure 11-D: Immunization monitoring chart**



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Instructions for using immunization monitoring charts are given below:

### 3.1 Prepare the charts

At the beginning of the year you need a blank immunization monitoring chart for each of the following:

- BCG;
- DPT1 and DPT3;
- OPV1 and OPV3;
- measles vaccine;
- hepatitis B, yellow fever and other vaccines, if appropriate;
- TT2+;
- the number of children protected at birth against neonatal tetanus compared to the number of children who received DPT1.

Prepare each chart as follows.

- 1) Determine the monthly and annual target populations as described in the box below.
- 2) At the top of each chart enter:
  - the name of the health centre;
  - the year;
  - what is monitored on the chart;
  - the total annual target population.

**Determination of annual and monthly target populations of children aged under 1 year and of pregnant women:**

- Determine the total population in the area served by your health centre.
- Calculate the number of children aged under 1 year by multiplying the total population by 0.03.

**Total population  $\times$  0.03 = annual target population of children.**

- Calculate the monthly target population by dividing the annual target population by 12 **Annual target population  $\div$  12 = monthly target population of children.**

**Example:**

**Total population of catchment area: 10 000.**

**Annual target population:  $10\,000 \times 0.03 = 300$ .**

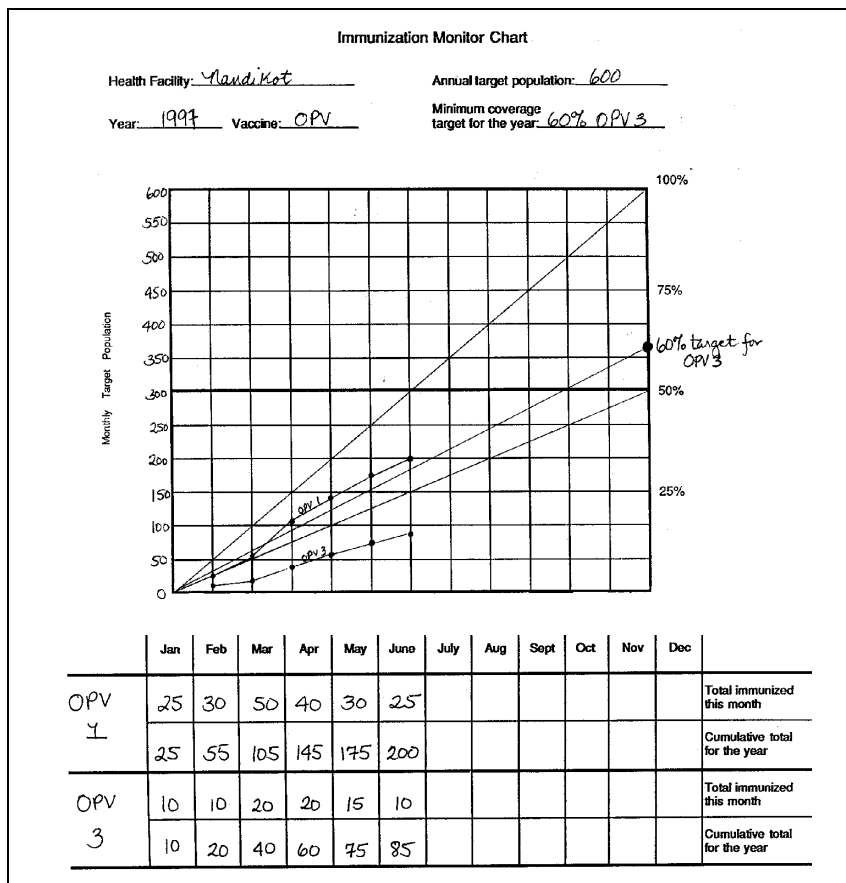
**Monthly target population:  $300 \div 12 = 25$ .**

**Notes :**

- a) If you know the actual percentage of children aged under 1 year, use this figure instead of 0.03.
- b) For pregnant women use the figure you calculate for children.

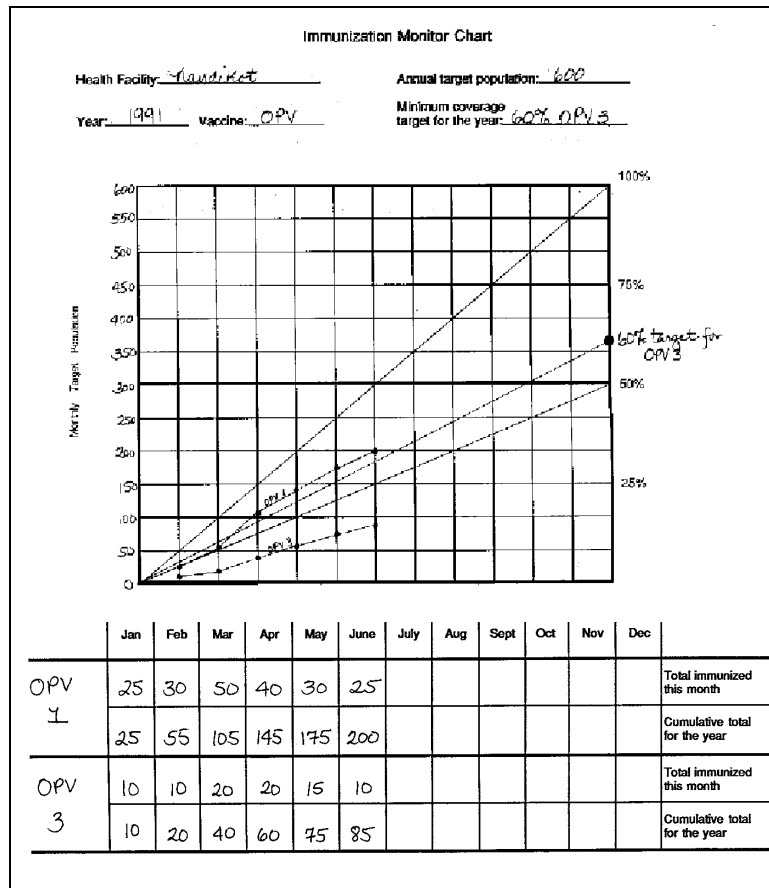
- 3) Write the minimum coverage target for the year on each chart.
  - The coverage target for a **children's vaccine** is the target set for a specific dose. For example, for OPV the coverage target is set for OPV3.
  - The coverage target for **tetanus toxoid** is the target set for TT2+ for pregnant women. TT2+ includes all **tetanus toxoid** doses except the first one (TT1); in other words the TT2, TT3, TT4 and TT5 immunizations are added together.
  - The coverage target for **children protected at birth** is the number of children who receive DPT1.
- 4) Label the left side of the charts with the monthly target population.
- 5) Write the cumulative numbers of people in the target population on the left side of each chart (see above for the calculation of the monthly target population).

**Figure 11-E: Immunization monitoring chart, focusing on left side**

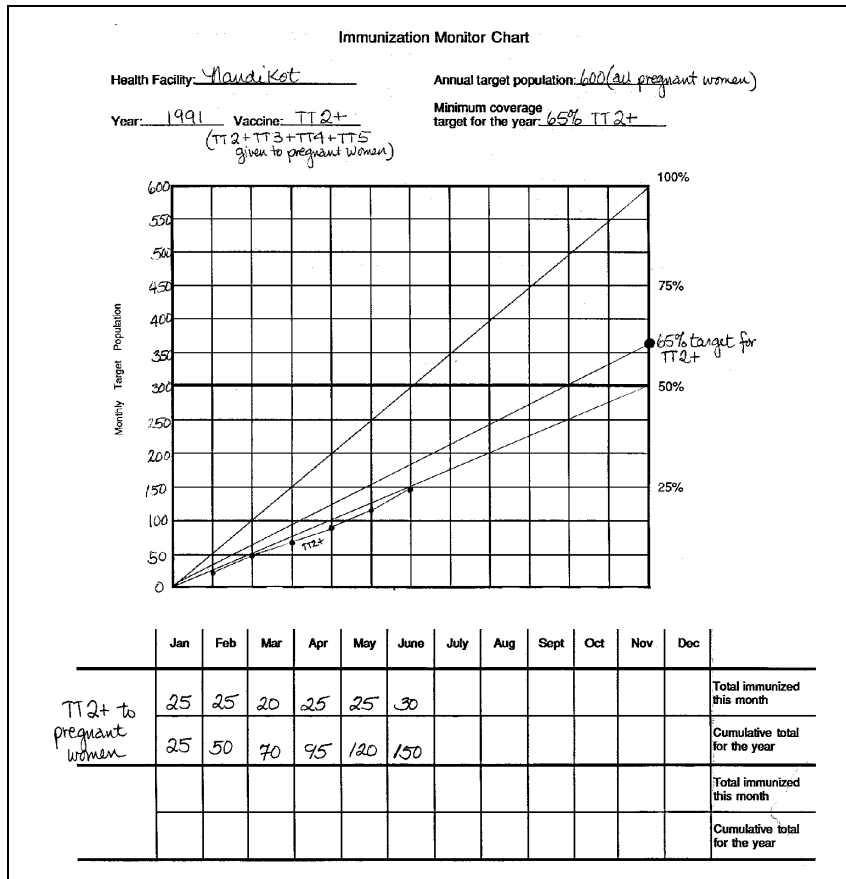


- 6) Children's immunization charts, the tetanus toxoid chart, and the protection at birth chart are prepared in different ways. Below an example of each of these charts is followed by instructions.

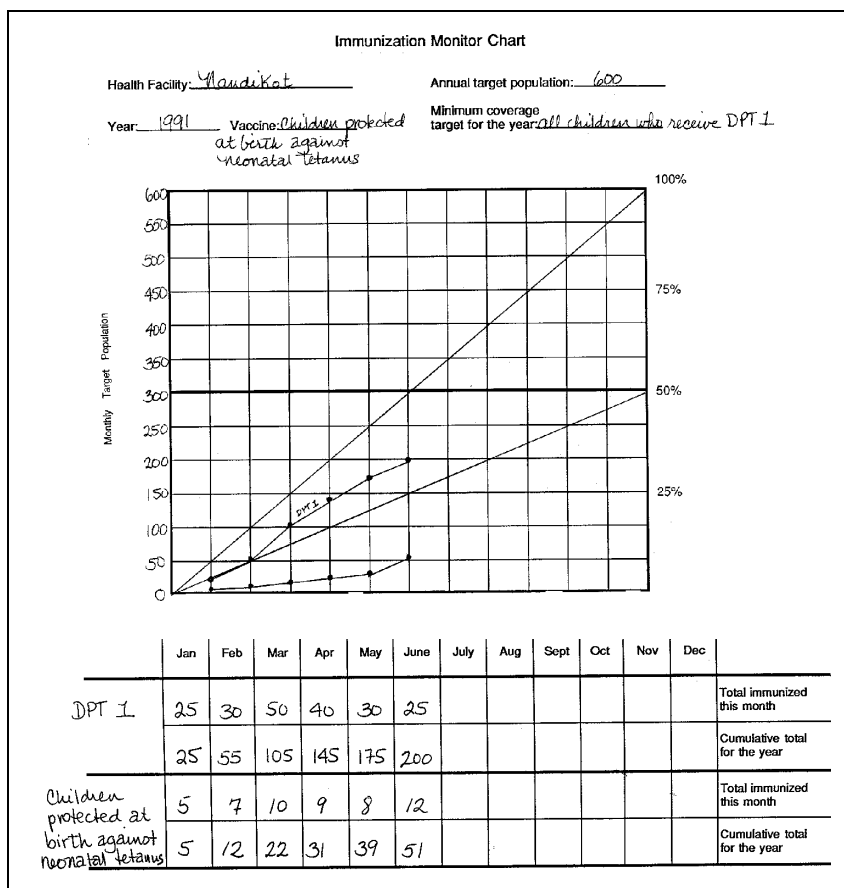
Figure 11-F: Immunization monitoring chart - OPV1 and OPV3



**Figure 11-G: Immunization monitoring chart - TT2+**



**Figure 11-H: Immunization monitoring chart - children protected at birth**



Instructions for preparing immunization monitoring charts are given below:

### *Children's immunization charts*

To complete the preparation of these charts proceed as follows:

- 1) Draw a line showing the **minimum immunization coverage** target. The right side of the graph shows percentages (25%, 50%, 75%, 100%) for coverage targets.
- 2) Find the point that represents the coverage target for your catchment area. Make a dot at this point.
- 3) Draw a straight line from 0 in the left corner of the chart to this dot, and label it.
- 4) Label the boxes at the bottom of the chart with the name of the vaccine and the dose, as shown.

---

### *Tetanus toxoid chart*

To complete the preparation of this chart proceed as follows:

- 1) Draw a line showing the minimum TT2+ coverage target.
- 2) Find the point on the right side of the graph that represents the TT2+ coverage target for your catchment area. Make a dot at this point.
- 3) Draw a straight line from 0 in the left corner of the chart to the dot, and label it as shown.
- 4) Label one row of boxes "TT2+ to pregnant women" at the bottom of the chart, as shown.

### *Protection at birth chart*

To complete the preparation of this chart proceed as follows:

- 1) Since the target for protection at birth is all children who have received DPT1, you show **actual** DPT1 coverage when you fill in the chart every month. See section 3.2 below.
- 2) Label the first row of boxes at the bottom of the chart "DPT1". Here you record the number of children who receive DPT1 each month.  
Label the second row "children protected at birth". In this row you record the number of children receiving DPT1 who were **also** protected at birth.

You are now ready to enter monthly data on the charts.

## **3.2 Fill in the immunization monitoring charts monthly**

### *Children's vaccines charts*

To record monthly progress on the charts for children's vaccines, use data from the monthly immunization reports as follows.

- 1) In the boxes under the graph, find the box for the vaccine, dose and month you are recording. Write down the total number of children under 1 year of age who received the dose during the month.  
For example, on the above chart for OPV1 and OPV3 the total number of children aged under 1 year who were immunized with OPV1 in June was 25.
- 2) Add the current month's total to the last cumulative total to obtain the current cumulative total.  
For example, on the chart for OPV1 and OPV3 the number 25 (children immunized with OPV1 in June) was added to 175 (cumulative OPV1 total for May) to obtain a current cumulative total of 200.
- 3) On the graph, make a dot for the cumulative total on the line for the month.
- 4) Connect the new dot to the previous month's dot with a straight line.

---

### ***Tetanus toxoid chart***

To record monthly progress on this chart proceed as follows:

- 1) In the box for the month you are recording, enter the total number of pregnant women who received TT2+ during the month. Obtain the data from the monthly immunization report.

For example, on the above chart for TT2+ the total number of pregnant women who were immunized with TT2+ in June was 30.

- 2) Add the current month's total to the last cumulative total to obtain the current cumulative total.

For example, on the above chart for TT2+ the number 30 (women immunized with TT2+ in June) was added to 120 (cumulative total for May) to obtain a current cumulative total of 150.

- 3) On the graph, make a dot for the cumulative total on the line for the month.

- 4) Connect the new dot to the previous month's dot with a straight line.

### ***Chart for children protected at birth against neonatal tetanus***

To record monthly progress on this chart proceed as follows:

- 1) In the row labelled DPT1 under the graph, enter the numbers you put in the DPT1 box on the DPT immunization monitoring chart.

- 2) In the row for "children protected at birth", find the correct month and enter the total number of children protected at birth as given in the monthly immunization report.

For example, on the above chart for children protected at birth the total number protected when the assessment took place in June was 12.

- 3) Add the current month's total to the last cumulative total to obtain the current cumulative total.

For example, on the above chart for children protected at birth the number 12 (children protected in June) is added to 39 (cumulative total for May) to get a current cumulative total of 51.

- 4) On the graph, make a dot for the DPT1 cumulative total and another dot for the "children protected at birth" total for the month that you are recording.

- 5) Connect the new dots to the previous month's dots with straight lines.

After three or four months your progress will be evident from the lines and numbers on your chart. Section 4 explains how to interpret the data.

---

## 4. Interpreting coverage data

After several months your immunization monitoring charts for children's vaccine and tetanus toxoid show you the percentage of people you are immunizing, whether it is increasing or decreasing, and how the number of immunizations given compares with targets.

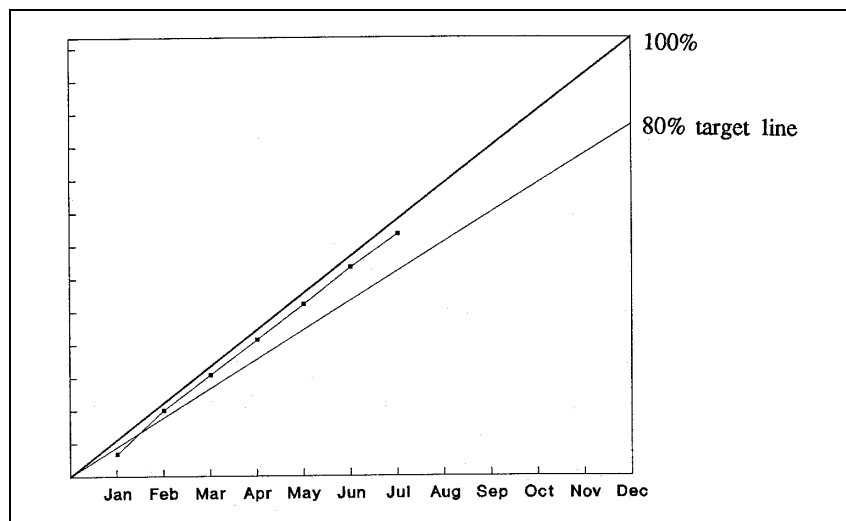
If you are not reaching your targets you should try to identify the reasons and decide how to solve the problems, as described in sections 5 and 6 below:

### 4.1 Children's vaccines and tetanus toxoid

After you have completed immunization monitoring charts for OPV1 and OPV3, DPT1 and DPT3, BCG and measles, and TT2+, as described in section 3 above, analyse the results.

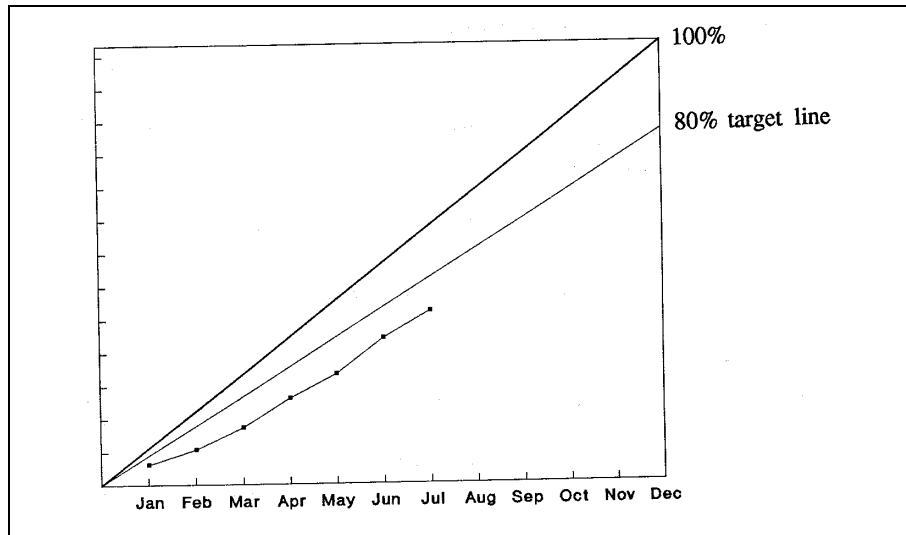
- 1) Compare the cumulative total line on the graph with the coverage target line
  - If the cumulative total line is **on or above** the target line, you are making good progress. In the figure below, the cumulative total is above the 80% target.

**Figure 11-I: Cumulative total line above target line**



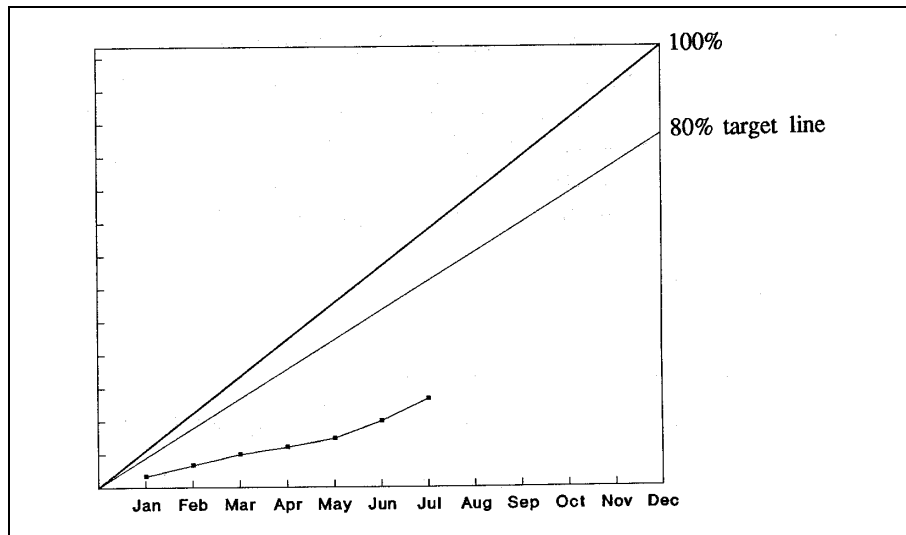
- If the cumulative total line is **below but close** to the target line you are making fair progress.

**Figure 11-J: Cumulative total line below target line**



- If the cumulative total line is **far below** the target line you are not making progress.

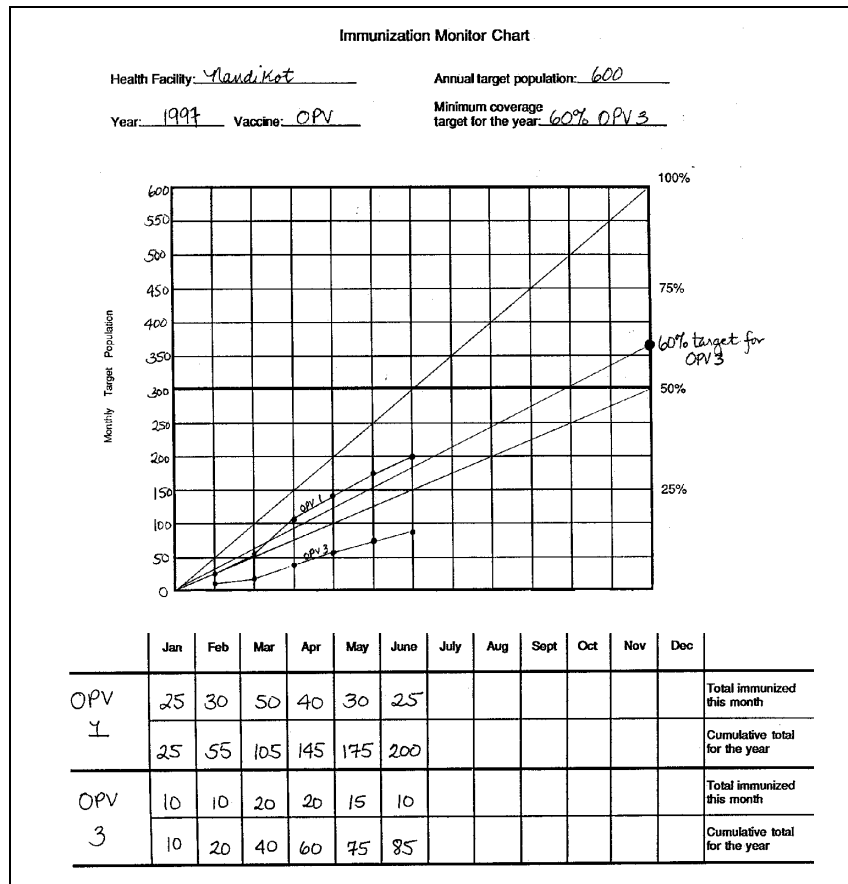
**Figure 11-K: Cumulative total line far below target line**



- 1) Compare current month's data with those of previous months
  - In the boxes below the graph, look at the number of immunizations given during the current month and compare it to the number given in previous months.
  - Are the numbers increasing or decreasing?

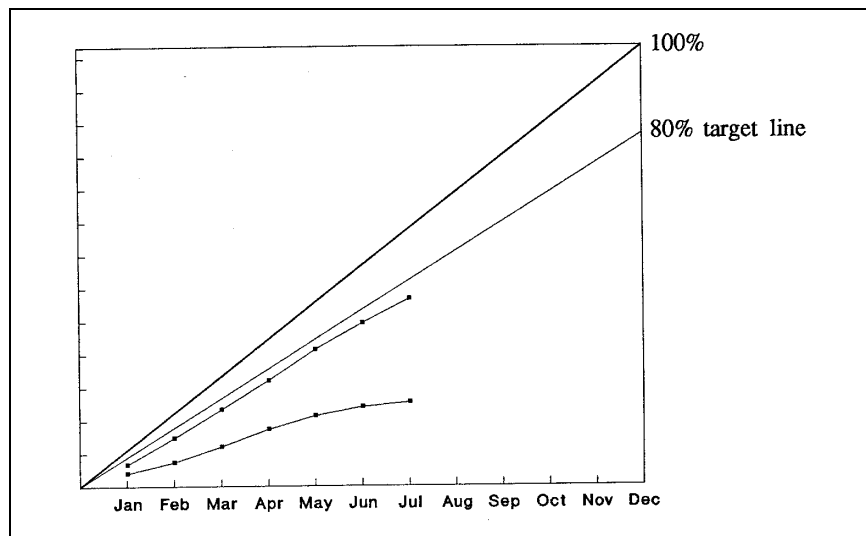
In the figure below, 40, 30 and 25 children received OPV1 in April, May and June respectively; 20, 15 and 10 children received OPV3 in April, May and June respectively. The numbers are decreasing.

Figure 11-L: Immunization monitoring chart for OPV1 and OPV3



- 3) Compare results for two vaccines or two doses of the same vaccine
- Compare the two cumulative total lines for OPV1 and OPV3, DPT1 and DPT3, and BCG and measles vaccines. If the distance between the two cumulative total lines on a chart grows wider every month you have a problem.

**Figure 11-M: Drop-out problem**



#### **4.2 Protection against neonatal tetanus at birth**

To interpret the immunization monitoring chart for children protected at birth against neonatal tetanus you need to compare the line showing the number of mothers who are up-to-date with their tetanus toxoid immunizations with that showing the number of children brought by their mothers for DPT1.

If the two lines are in the same place, the number of protected children equals the number who receive DPT1; and your tetanus toxoid immunization programme is going well.

If the lines do not match, find out why.

---

# 5. Identifying problems and their causes

If your data show that you are making progress you can plan how to maintain and increase immunization services. If the data show that you are not reaching coverage targets or that the number of immunizations given each month is decreasing, try to find out why by asking the following questions:

- Are there any groups of people who do not have access to the health centre or to outreach services that you provide?
- Are there any groups of people who have access to, but do not **use**, the health centre? Why? Are they migrants or refugees? Are there religious, ethnic, linguistic or other reasons?
- Do people know about immunizations and ask for them for their children? Do women understand how tetanus toxoid can benefit their newborns and themselves? Do people understand that they need more than one dose of some vaccines?
- Are immunizations provided at convenient times and places? Are children and women immunized quickly or do they have to wait a long time for service?
- Are health workers courteous?
- Are abscesses or other health problems occurring which people believe are caused by immunizations?

## 5.1 Where can you find the information?

You can identify problems by talking with community leaders, parents and other health centre workers. You may also learn something by looking at what you do during immunization sessions.

- **Community leaders**  
Political, religious and other leaders can tell you:
  - where underserved groups live;
  - **why** people do not use services – this is particularly important.
- **Parents and women of childbearing age** can tell you:
  - whether they are aware of the need for immunizations;
  - **why** they (or their neighbours) are not using available immunization services – this is particularly important.

---

**Other workers** in the health centre can tell you **why** they think parents and women of childbearing age are or are not using immunization services.

- **Immunization sessions**

If you check on what you do in immunization sessions you may discover shortcomings:

- do you always use sterile techniques?
- do you always explain:
  - when to return for the next immunization;
  - where to return for the next immunization;
  - the number of visits needed to complete the immunization schedule;
  - what side-effects might occur;
  - what to do about side-effects?
- Do you always show respect for clients' time and listen to their concerns?

When you have identified problems you can plan actions for solving them.

---

## 6. Taking action to increase coverage

After analysing your coverage data you know whether you are making progress, what problems you have, and what is causing them. The next step is to solve the problems and prevent similar ones from occurring in the future. Working with your supervisor, try to develop solutions that you can handle yourself. If possible, plan activities that do not need a lot of additional resources from the district or higher levels.

If people do not have access to immunization services you may want to increase outreach activities. This may require additional vaccines, transport or cold-chain equipment, and you may therefore need to undertake planning with your supervisor.

If people have access to immunization services but are not using them, consider one or more of the following strategies:

- increasing people's knowledge about immunization;
- changing the hours of immunization sessions so that they are more convenient for parents;
- involving community members in solving transport problems;
- training health workers in communication skills, immunization safety, organization of fixed and outreach activities, or other skills that may affect clients' decisions to use the services.

Continue monitoring immunization coverage and acting on what you learn. In this way you can increase protection against all the EPI diseases.