Preventing Prolonged Labour: a practical guide

The Partograph
Part III: Facilitator’s Guide
The World Health Organization is a specialized agency of the United Nations with primary responsibility for international health matters and public health. Through this organization, which was created in 1948, the health professions of some 189 countries exchange their knowledge and experience with the aim of making possible the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life.

By means of direct technical cooperation with its Member States, and by stimulating such cooperation among them, WHO promotes the development of comprehensive health services, the prevention and control of diseases, the improvement of environmental conditions, the development of health manpower, the coordination and development of biomedical and health services research, and the planning and implementation of health programmes.

These broad fields of endeavour encompass a wide variety of activities, such as developing systems of primary health care that reach the whole population of Member countries; promoting the health of mothers and children; combating malnutrition; controlling malaria and other communicable diseases including tuberculosis and leprosy; having achieved the eradication of smallpox, promoting mass immunization against a number of other preventable diseases; improving mental health; providing safe water supplies; and training health personnel of all categories.

Progress towards better health throughout the world also demands international cooperation in such matters as establishing international standards for biological substances, pesticides and pharmaceuticals; formulating environmental health criteria; recommending international non-proprietary names for drugs; administering the International Health Regulations; revising the International Classification of Diseases, Injuries, and Causes of Death; and collecting and disseminating health statistical information.

Further information on many aspects of WHO's work is presented in the Organization's publications.
Preventing Prolonged Labour: a practical guide

The Partograph

Part III: Facilitator’s Guide
ACKNOWLEDGEMENTS

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GLOSSARY

AIDS     Acquired immunodeficiency syndrome
ANC     Antenatal care
CPD     Cephalopelvic disproportion
EPI     Expanded Programme on Immunization
FIGO    Federation of International Obstetrics and Gynaecology
HDP     Hypertensive disorders of pregnancy
HIV     Human immunodeficiency virus
ICM     International Confederation of Midwives
IEC     Information, education and communication
IUD     Intrauterine device
LGV     Lymphogranuloma venereum
MCH     Maternal and Child Health
min     minute
NGO     Nongovernmental organization
PID     Pelvic inflammatory disease
PPH     Postpartum haemorrhage
STDs    Sexually transmitted diseases
SVD     Spontaneous vertex
TB      Tuberculosis
TBA     Traditional birth attendant
UTI     Urinary tract infection
<       Less than
>       More than

Time conversion from 12 hour clock to 24 hour clock

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1. INTRODUCTION

This Facilitator's Guide aims to help you teach the use of the WHO partograph. To teach its use effectively, you must fully understand the principles behind it and you must have adequate practical experience of managing labour with the WHO partograph. You must be familiar with the information in Principles and Strategy (WHO/FHE/MSM/93.8) and in the User's Manual (WHO/FHE/MSM/93.9). Labour attendants learning the use of the partograph should all be given copies of the User's Manual and should refer to it during the course of instruction that you will lead them through.

2. OBJECTIVES

You and the course participants must understand what you are trying to achieve and this must be made clear at the outset of each course. The ultimate objective is to reduce the incidence of prolonged and obstructed labour by early and timely recognition and thus reduce complications associated with these conditions. To achieve this, the application of the partograph must be fully understood and the participants must achieve the following objectives (also listed in section 4 of the User's Manual).

Objectives for Participants

After completing a training course, participants should be able to:

- Understand the concept of the partograph.
- Record observations accurately on the partograph.
- Understand the difference between the latent and the active phase of labour.
- Interpret a recorded partograph and recognize any deviation from the norm.
- Monitor the progress of labour, recognize the need for action at the appropriate time, and decide on timely referral.
- Explain to mothers and other members of the community the significance of the partograph.
It is assumed that you and the participants are experienced in looking after women in labour and this should include experience of vaginal examinations to assess cervical dilatation. Physiology in labour and basic midwifery care are not reviewed in this Part III except where they are of particular relevance to the use of the partograph. Most of what the participants will learn is unlikely to be new knowledge. They will, however, learn how to use knowledge and skills which they already have to look after women better in labour. Use this background among your participants to lead them from what they already know to the initially unknown features of the partograph.

This Facilitator’s Guide is divided into several units to help you build up an overall understanding of the partograph and its use. Each unit begins by summarizing your teaching objectives and concludes with learning objectives to be achieved by the participants. Suggested exercises to help in the understanding of each unit are also included.

3. AN OVERVIEW

It is important not to lose sight of the objectives of the course and of the use of the partograph. As you work through the units, remember that the partograph is a tool to assess and interpret the progress of labour. Its central feature is the graphical recording of cervical dilatation, but descent of the fetal head and uterine activity are also indicators of progress in labour, and the partograph also detects other problems developing in the mother and the fetus during labour. Make sure, also, that individual care and attention for each woman in labour is emphasized. Labour care is more than just a partograph!

4. UNIT 1: INTRODUCING THE PARTOGRAPH

Teaching Objectives

1. Make participants aware of the observations which are made in labour and are recorded on the partograph.

2. Introduce the participants to the idea of the partograph and what it is for.

3. Discuss screening of women before beginning a partograph.
4.1 Group Discussion

Find out where all your participants come from, what problems they face with women in labour and how they presently cope with problems of prolonged labour. This will allow you and the group to get to know each other and appreciate each other’s situations and problems. Discuss the particular problems of long and difficult labours and the problems that result, especially ruptured uterus, postpartum haemorrhage, puerperal sepsis and vesico-vaginal fistula.

Lead the discussion around to listing all the observations they currently make on a woman in labour. List them on a blackboard as they are mentioned and divide them into a logical grouping (as in the User’s Manual). This will allow the group to realise that they are already doing much of what is required for the partograph and will give them confidence to proceed. Find out how your participants presently record their observations and make sure they understand the significance of each observation.

4.2 Introducing the Partograph

You should now be ready to introduce the idea of the partograph as a means of identifying the problem of prolonged labour through the recording of observations in a particular way.

Now ask your participants to read sections 4 and 5 of the User’s Manual. Explain that they should not be concerned about not understanding all the objectives at this stage.

4.3 Screening for Special Cases

At this stage it will be useful to enlarge on section 3 of the User’s Manual, "Who should not have a partograph." Ask the participants to list particular problems which may be identified before labour starts or during labour and which may need special action. Examples include:

- Very short stature
- Antepartum haemorrhage
- Severe pre-eclampsia and eclampsia
- Fetal distress
- Previous caesarean section
- Anaemia
- Multiple pregnancy
- Malpresentation
- Very premature labour
- Obvious obstructed labour

When admitted in labour, all women must be screened for such special problems and appropriate action taken if indicated. This action will depend on the problem and on the local situation and may include transfer of the patient to hospital or immediate delivery.
Participants should learn to ask themselves of each woman:

**Can this woman be allowed to continue in labour here?**

- If the answer is **NO**, then **appropriate action must be taken**.
- If the answer is **YES**, then **start a partograph**.

A partograph can be used to monitor progress in all women unless immediate action is indicated, and the partograph can be particularly useful in labour in cases of, for example, breech presentation, multiple pregnancy, previous caesarean section.

Discuss briefly the management of special cases as appropriate to your local situation.

**Learning Objectives**

By the end of Unit 1, the participant should be able to:

1. State what the partograph is and what it is for.
2. List observations normally carried out in labour.
3. List special cases for which a partograph may not be appropriate.
5. UNIT 2: ASSESSING CERVICAL DILATATION IN LABOUR

Teaching Objectives

1. Teach assessment of cervical dilatation in labour by vaginal examination.
2. Teach the difference between the active and latent phases of labour.
3. Teach how often to perform vaginal examination in labour.

Materials Required

- Blackboard or flipchart
- Cervical assessment boards

This Unit 2 should be partly a review for those participants already familiar with cervical dilatation during labour. Two important new concepts, however, are introduced, namely:

1. The difference between the latent and active phases of labour.
2. An understanding of the normal rate at which the cervix dilates.

The User's Manual is not needed for this unit, except for Annex 1.

5.1 Vaginal Examination

As always, start with the known and lead on to new information. First of all, remind participants of this important rule:

A woman who has had an antepartum haemorrhage should never have a vaginal examination.

A partograph of cervical dilatation should not be started in such cases until placenta previa has been ruled out.

Find out by discussion how much experience the participants have of vaginal assessment in labour:
• How frequently during labour do they perform vaginal examinations?
• What information do they get?
• How quickly do they expect the cervix to dilate?

Write information on a blackboard as you get it. This may include:

• Presentation
• Cervical dilatation
• Caput
• Palpation of cord

• Position of presenting part
• Cervical effacement (shortening)
• Moulding
• Nature of liquor

Discuss why all these things are checked. Ask the participants what they feel is the most important information. (This could be done by a "secret ballot": each participant writes his/her choice on a piece of paper which can then be collected and tallied. These "teaching gimmicks" help to keep a class interested.)

The most important information is the cervical dilatation. This is the surest way to assess progress in labour, even though other things discovered on vaginal examination are also important.

At this stage you may have a problem with some participants having more experience than others. If they wish to discuss in more detail problems such as caput or moulding found at vaginal assessment, it is probably best to leave this discussion until later in the course and concentrate in this unit only on cervical dilatation, which is the central feature of the partograph.

5.1.1 Cervical assessment boards

Make sure the participants understand the concept of measuring cervical dilatation in centimetres. Construct one or several cervical assessment boards out of wood, plastic or cardboard with rings of different dilatations of 1 to 10 centimetres cut out. (See Annex 1 in the User's Manual, although it is best to include all dilatations.) Make sure all participants have or will be able to make such a board for their own use.

5.1.2 Practical experience

If it is possible to arrange for each participant to undertake supervised vaginal examinations on women in labour during their course, this is, of course, ideal. Encourage them to compare their findings with a cervical assessment board to get an accurate measure of cervical dilatation.
5.2 Identifying Latent and Active Phases of Labour

The participants will know that labour starts slowly, often with several days of "practice" contractions. Then stronger contractions take over and labour progresses quickly. Point out that this slow early labour is when the cervix is beginning to dilate up to 3 cm. This is called the latent phase of labour. Contractions strong enough to cause discomfort in the latent phase of labour should not continue for more than 8 hours, although there may be several days before this of weak, irregular contractions.

From 3 to 10 cm (full dilatation), labour is in the active phase and should progress more rapidly, normally at 1 cm/hour.

| Latent phase = Early labour, up to 3 cm dilatation - lasts 8 hours or less |
| Active phase = Main part of labour, 3-10 cm dilatation at 1 cm/hour or faster |

The participants must understand that the active phase of labour may appear to be harder work for the woman because her contractions are stronger. But as far as progress is concerned, things become quicker and more efficient as the cervix dilates more quickly.

Point out that the partograph is going to teach them how to identify those women in whom the latent phase of labour is lasting too long or the active phase of labour is progressing too slowly.

5.2.1 Other features of the latent phase

During the latent phase of labour, the cervix usually not only dilates up to 3 cm, but also shortens (effaces). Many participants will be aware of this and will need discussion. In the primigravida, the cervix will generally be fully effaced by the time 3 cm dilatation is reached, but in the multigravida it may not be. In such cases, however, once 3 cm dilatation is reached and presuming the woman is contracting and in labour, labour is now considered to be in the active phase.

For the purposes of the WHO partograph, it has been decided that dilatation alone will determine the change from the latent to the active phase of labour.

Point out also that most women present in labour when they are past the latent phase and well into the active phase, i.e. at more than 3 cm cervical dilatation.

5.3 Frequency of Vaginal Examinations

You have already learned from the participants how frequently they perform vaginal examinations during labour. Now ask how often they think they should be
performed to learn how well labour is progressing, keeping in mind what they have just learned.

Lead them to agree that one examination every 4 hours is the correct time interval.

- Do they understand the problems associated with more frequent vaginal examinations?
  - Discomfort for the mother
  - Danger of introducing infection

- And the problem associated with less frequent vaginal examinations?
  - Delay in diagnosis of slow progress in labour

### Learning Objectives

By the end of Unit 2, the participant should be able to:

1. Understand how to assess cervical dilatation in labour using a cervical assessment board and, if possible, have had some supervised practical experience of this.

2. Understand the difference between the active and latent phases of labour and how quickly each should progress.

3. Know how often vaginal examinations should be performed in labour and why.

### UNIT 3: PLOTTING CERVICAL DILATATION ON A GRAPH

#### Teaching Objectives

1. Teach how graphs can record changes against time.

2. Teach how to plot cervical dilatation against time on a graph.
Materials Required

- Child growth charts, one for each participant
- Graph paper
- Pencils and erasers

In this unit, participants are introduced to the concept of recording cervical dilatation on a graph. They must be able to do this accurately or they cannot use the partograph.

Graphs are a way of recording the changing position or size of something over a period of time.

Most participants will already be familiar with using child growth charts. Plotting cervical dilatation is very similar (see Fig. III.1).

![Graphs showing weight gain and cervical dilation over time](image-url)

**Fig. III.1**
6.1 Unit 3 Exercises

6.1.1 Plotting child’s weight-for-age

If participants are familiar with this, practice plotting a child’s weight-for-age on the growth chart graph.

Try to obtain at least one blank child growth chart and a pencil and eraser for each participant. Read out the following examples or enter them on the blackboard and ask participants to plot them on a child’s weight-for-age graph. Check that everyone is plotting the weight-for-age correctly.

1. Weight at birth: 3.0 kg
   1 month: 3.5 kg
   2 months: 4.0 kg
   3 months: 4.5 kg
   4 months: 5.0 kg

2. Weight at birth: 3.0 kg
   4 months: 5.0 kg
   6 months: 6.0 kg
   12 months: 10.5 kg

3. Weight at birth: 4.0 kg
   3 months: 6.0 kg
   9 months: 8.5 kg
   12 months 10.0 kg

Other examples can be made up.

Point out again that weight (kg) is on the vertical axis and is changing over a period of time (months) on the horizontal axis.

6.1.2 Plotting cervical dilatation

Now participants should practice plotting cervical dilatation against time on a graph (not on the partograph itself, which is too complicated at this stage).

If each participant has one sheet of graph paper (if necessary they can make it up by drawing lines) and a pencil and eraser, several examples can be plotted on the same paper.

First they should mark hours (h) along the bottom (horizontal) axis and the centimetres (cm) along the vertical axis. Cervical dilatation is assessed every 4 hours.

Call out these cervical dilatations for different times and make sure participants plot them correctly. Also plot them yourself on a blackboard graph for everyone to see.
1. On admission 2 cm
   After 4 hours 4 cm
   After 8 hours 8 cm

2. On admission 1 cm
   After 4 hours 2 cm
   After 8 hours 4 cm
   After 12 hours 9 cm

3. On admission 5 cm
   After 4 hours 10 cm

4. On admission 3 cm
   After 4 hours 7 cm

5. On admission 1 cm
   After 4 hours 2 cm
   After 8 hours 3 cm
   After 12 hours 8 cm

Other examples can be made up, but at this stage try to make sure that they will make a curve on the graph which shows the rate of normal labour, as all the above examples do.

6.1.3 Discussion

The participants should look at the pattern of each graph after they have drawn it. The exercises have been designed to show the pattern of typical normal labour.

Make sure participants can also see that 1 box on the graph represents 1 cm of dilatation upwards and 1 hour of time along the bottom.

Seeing these two things will help their understanding of the next unit, which brings together what participants have learned from this unit and the preceding one.

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**Learning Objectives**

By the end of Unit 3, the participants should be able to:

1. Understand how a graph records something changing over time.
2. Plot cervical dilatation against time on a graph.
7. UNIT 4: PLOTTING CERVICAL DILATATION ON THE PARTOGRAPH

Teaching Objectives

1. Review and combine knowledge learned in Units 2 and 3.
2. Teach plotting of cervical dilatation on the partograph.
3. Teach recognition of the normal pattern of latent and active phases of labour on the partograph.

Materials Required

- Blackboard, overhead projector or flannelgraph
- Centre part of partograph with marked latent phase and alert line
- Partographs
- Pencils and erasers

By now, the participants should have a firm understanding of the two different phases of labour, and how to record cervical dilatation on a graph. They can now apply this knowledge to the partograph.
7.1 Understanding the Partograph

A copy of the central part of the partograph (see Fig. III.2) should be drawn on a blackboard or an overhead projector or a flannelgraph to help you to teach this unit.

Remind the participants of what they learned in the previous units:

- The latent phase lasts up to 8 hours.
- In the active phase, the cervix should dilate at 1 cm/hour or faster.
- Look at the shape of the graphs they drew as exercises in the last unit.
- Each box on a graph like the partograph means 1 cm up and 1 hour along.

7.2 When to Start the Partograph

The large multicentre trial of the WHO partograph showed how very important it is that the partograph be started only when a woman is in labour. The criteria used in that trial and shown in section 5.1.1 of the User's Manual must be strongly emphasised.

- In the latent phase, contractions must be 2 or more in 10 minutes, each lasting 20 seconds or more.
- In the active phase, contractions must be 1 or more in 10 minutes, each lasting 20 seconds or more.
The importance of this is again emphasized in the *User’s Manual* and should be further discussed when you are teaching Unit 5. The partograph must not be started if a woman is not in labour.

Now build up your partograph on the blackboard. At this stage, do not draw in the action line, so it should look like Fig. III.3.

Show how the heavy black lines emphasize all four of the above points. The name of the alert line is unimportant at this stage, but show how it moves at 1 cm/hour, joining the corners of the boxes.

Take time to make sure participants understand these features before moving on to plotting cervical dilatation, although they may find understanding easier as they work through this unit practising plotting dilatations on the partograph.

Fig. III.3

The participants should now read and study section 5.1.2 of the *User’s Manual*, paying particular attention to the central part of the partograph where cervical dilatation is recorded graphically. They should ignore the action line and other features of the partograph at present.

7.3 Charting Cervical Dilatation on Admission

Teach participants to plot cervical dilatation on admission in the correct place by doing things in the following order:

1. Do vaginal examination and note cervical dilatation.

2. Decide if labour is in the *latent phase* (cervical dilatation 0, 1, or 2 cm) or in the *active phase* (cervical dilatation 3 or more cm).
3. Put a cross to mark cervical dilatation on the right place on the partograph.
   - If the cervix is in the latent phase (less than 3 cm), place the cross at the left hand end of the graph (0 hours).
   - If the cervix is in the active phase (3 cm or more), place the cross on the alert line at the correct number of centimetres’ dilatation (3 to 10 cm).

Use your blackboard or flannelgraph partograph to demonstrate this several times.

4. Note the time of the vaginal examination and record that in the "Time" box to the nearest 1 hour or half-hour under the cross that has just been placed.

Point out that other routine recordings will be made on the partograph at the same time but that initially you will concentrate on plotting cervical dilatation.

7.3.1 Exercises

If possible, give each participant several blank partographs or at least one each with a pencil and eraser. Call out several different cervical dilatations and ensure that each trainee is plotting this initial cervical dilatation correctly on their partograph. Do not discuss the plotting of subsequent cervical dilatations until all the participants are competently plotting the initial one in the correct place.

7.4 Charting Subsequent Cervical Dilatations

Teach the participants the following rules:

1. Perform vaginal examinations to assess cervical dilatation every 4 hours.

2. Mark with an arrow on the partograph the time of the next examination. (This should not normally be necessary once participants are familiar with using the partograph in practice.)

3. Plot this cervical dilatation on the partograph.

Labours that are already in the active phase on admission or are remaining in the latent phase should be easy to plot, but illustrate this several times with your blackboard/flannelgraph partograph.

7.4.1 Other examples

In addition to your own examples, the participants should study those in section 5.1.2 of the *User's Manual.*
7.4.2 Exercises

Call out two separate cervical dilatations 4 hours apart and ask participants to record them on their partographs. Ensure that the dilatations you call out are both in the latent phase (0-2 cm) or both in the active phase (3-10 cm). Ensure also that the dilatations you call out in the active phase will keep on or to the left of the alert line (i.e. at least 4 cm progress in 4 hours).

7.5 Charting Transfer from Latent to Active Phase

By now, the participants should be wondering how to record a labour which moves from the latent to the active phase in less than 8 hours, and must be taught about this transfer.

At the first vaginal examination that shows that labour is in the active phase, cervical dilatation must be plotted on the alert line.

In practice, this means trainees must learn the following rule:

The first time that the cervix is 3 or more cm dilated, plot this on the alert line.

Ask them to study Figure II.4 and observations on this figure in the User’s Manual and discuss together what has happened.

Make sure they understand the following steps:

1. On admission, labour was in the latent phase.

2. Labour was in the active phase 4 hours later, and after plotting this cervical dilatation, it was immediately transferred onto the alert line where active labour should be recorded.

3. The time (18:00) was transferred to the correct place.

4. Point out that all other recordings will also be transferred to the new position on the partograph.
7.6 Unit 4 Exercises

The participants must now carry out several exercises to ensure they have a firm grasp of the technique of recording cervical dilatation during normal labour.

Ask them to record the following findings correctly, making a separate partograph for each numbered case:

1. Admitted 16:00, cervical dilatation 1 cm.  
   At 20:00, 2 cm.

2. Admitted 9:00, cervical dilatation 5 cm.  
   At 13:00, 9 cm.

3. Admitted 2:00, cervical dilatation 1 cm.  
   At 6:00, 2 cm.  
   At 10:00, 3 cm.  
   At 14:00, 8 cm.

4. Admitted 5:00, cervical dilatation 3 cm.  
   At 9:00, 9 cm.

5. Admitted 18:00, cervical dilatation 2 cm.  
   At 22:00, 5 cm.  
   At 2:00, 10 cm.

6. Admitted 1:00, cervical dilatation 1 cm.  
   At 5:00, 2 cm.  
   At 9:00, 8 cm.

7. Admitted 16:00, cervical dilatation 2 cm.  
   At 20:00, 2 cm.  
   At 24:00, 3 cm.  
   At 4:00, 7 cm.

8. Admitted 22:00, cervical dilatation 1 cm.  
   At 2:00, 10 cm.

If you make up other examples, ensure that they illustrate normal labour, i.e. a latent phase of less than 8 hours and an active phase which progresses at the rate of at least 1 cm/hour and thus keeps on or to the left of the alert line. These exercises can be reversed, i.e. you can make up several partographs illustrating normal labour, and ask the participants to write down or tell you what the graphs tell them:

1. What time was vaginal examination carried out?

2. What was the cervical dilatation at different times?

3. What phase is labour in?
7.6.1 Discussion

Emphasize to the participants that they have been recording normal labour with latent phases less than 8 hours and active phases progressing at 1 cm/hour or faster.

Therefore crosses in the latent phase should not normally pass beyond the heavy line at 8 hours on the partograph and crosses in the active phase should not normally move to the right of the heavy alert line.

These points are emphasized at the end of section 5 of the *User's Manual* and the participants should read and learn these "Points to Remember".

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**Learning Objectives**

By the end of Unit 4, the participants should be able to:

1. Know the normal pattern of the latent and active phases of labour.
2. Accurately record the progress of cervical dilatation in normal labour on the partograph.

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8. **UNIT 5: RECORDING OTHER SIGNS OF PROGRESS IN LABOUR**

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**Teaching Objectives**

1. Describe abdominal palpation for level of fetal head and teach how to plot this on the partograph.
2. Teach recording and plotting of uterine contractions.
3. Review all aspects of recording progress of labour on the partograph.

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**Materials Required**

- Pelvis and doll or fetal skull
- Partographs
- Pencils and erasers

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THE PARTOGRAPH:
• Paper with boxes drawn in
• Blackboard

8.1 Discussion

Although cervical dilatation is the most important sign of progress in labour and recording of this forms the central part of the partograph, other important signs are:

• Uterine contractions
• Descent of the fetal head

These are comprehensively described in sections 5.1.3 and 5.1.4 of the User's Manual, but participants should not read these pages until later on in this unit.

Before teaching about these other important signs or asking the participants to read these pages, ask the participants for their own ideas about assessment of progress apart from cervical dilatation and discuss their replies. Lead the discussion around to the two features you are about to explore with them.

8.2 Descent of the Fetal Head

Some participants may be familiar with the concept of assessing the level of the head by the number of fifths palpable abdominally. Even if they are, review this with them. They will still need to be taught about recording the level of the head on the partograph.

• In some populations, the head does not descend into the pelvis until late in labour and your teaching must take the local situation into account.
• Remind participants that the bladder must be empty when the level of the fetal head is assessed.

8.2.1 Practical teaching

Try to obtain a model of a pelvis and a fetus to demonstrate more fully Figures II.6 and II.7 in the User's Manual, which participants should study.

Try to arrange attendance at an antenatal clinic where the participants can practice palpating the level of the head abdominally in women with advanced pregnancy. Use fingers to measure the number of fifths.

8.2.2 Recording head descent on the partograph

This is illustrated in Figure II.8 of the User's Manual.

Teach participants the following guidelines:
1. Assess the level of the fetal head abdominally before every vaginal examination (normally once every 4 hours).

2. Note the number of fifths that can be felt above the pelvis, i.e. the number of "fingers" of head that can be felt. This number measures the level of the head.

3. Record the level by an "O" on the partograph. This means that every time they mark an "X" for cervical dilatation, they must also mark an "O" for level of fetal head.

4. If the "X" is transferred to the alert line when labour enters the active phase, the "O" should also be transferred.

5. The head should normally descend during labour so that you can feel less and less of it abdominally. This means that as the "X" recording cervical dilatation rises up the graph, the "O" recording fetal head level should drop down the graph. The "O" should never go up the graph - this does not happen in labour.

Figure II.8 in the User's Manual illustrates all these points.

### 8.2.3 Exercises

a) If possible, ask participants to palpate pregnant women's abdomens and state the level of the head in fifths.

b) Ask the participants to record various levels of head on their blank partographs. Call out numbers representing cervical dilatation and head descent level and ask trainees to mark both on the same partograph.

### 8.3 Uterine Contractions

Ask the participants how they assess uterine contractions at present and how they record their findings. Many will suggest assessing the strength of contractions. Point out that this is very difficult to assess as different health workers and different mothers may feel differently about a contraction that is actually the same strength. It is best to record features that can be measured accurately using a watch, such as:

- How often do the contractions come? (frequency)
- How long do they last? (duration)

If the attendants in labour change, the recordings continue to be made in the same way and are comparable.

Section 5.1.4 of the User's Manual describe these features and how to record them on the partograph. Ask your participants to read these pages.
The frequency and duration of uterine contractions must be assessed when deciding when to start the partograph. A review of the rules for starting the partograph is described in Unit 4.

8.3.1 Recording contractions on the partograph

Teach the following guidelines:

1. Uterine contractions are measured and recorded on the partograph more often than cervical dilatation or level of fetal head: every hour in the latent phase, and every half-hour in the active phase of labour.

2. Assess contractions in the last 10 minutes of each half-hour or hour.

3. Count all the contractions in that 10 minutes and measure in seconds how long each one lasts (frequency and duration).

4. Fill in one box at the right time on the partograph for each contraction counted (up to 5 contractions - there are only 5 boxes).

5. The longer the contractions last, the more heavily the box is filled in.

8.3.2 Exercises

Rather than wasting several more blank partographs, prepare several sheets of paper with boxes to record contractions for the participants to fill in. Or use the blackboard and have participants fill in boxes on the blackboard.

1. Call out figures for the number of contractions in 10 minutes and how long each contraction lasted. Ask participants to fill in boxes accordingly.

2. Reverse the exercises by filling in boxes on the blackboard and asking participants to interpret what they mean.

3. Make some of the contractions short and infrequent so that participants can decide if the woman is in labour and if the partograph should be started.

Figure II.10 in the User’s Manual illustrates how recording contractions fits in with other recordings. Participants should now study this.

8.4 Unit 5 Exercises

Participants have now learned to record all observations on the progress of normal labour on the partograph and this is a good time to review this. This is best done by giving the participants the following exercises to fill in partographs or to interpret recordings on a partograph. The questions can be reversed if you fill in a partograph with
the information given in these exercises. Show it to the participants and ask them to interpret it.

For each of the four cases described, fill in information on a partograph and answer these questions each time.

1. How long is it since the woman was admitted in labour?
2. What phase of labour is she in?
3. What is the latest time you would expect her to be fully dilated?
4. When should the next vaginal examination for cervical assessment be carried out?
5. When should the level of the fetal head next be assessed?
6. How often should contraction frequency and duration be recorded?

Fill in a likely contraction pattern between assessments, where there is more than one.

Case 1: Mrs A, admitted 4:00.

Level of head, 3/5.
Cervical dilatation, 5 cm.
Contraction 3 in 10 minutes, each lasting 50 seconds.

Case 2: Mrs B, admitted 20:00

Level of head, 4/5.
Cervical dilatation 2 cm.
Contraction 2 in 10 minutes, each lasting 25 seconds.

At 24:00
Level of head, 2/5.
Cervical dilatation, 3 cm.
Contraction 4 in 10 minutes, each lasting 45 seconds.

Case 3: Mrs C, admitted 21:00

Level of head, 5/5.
Cervical dilatation, 6 cm.
Contraction 3 in 10 minutes, each lasting 30 seconds.

At 1:00
Level of head, 0/5.
Cervical dilatation, 10 cm.
Contraction 4 in 10 minutes, each lasting 55 seconds.

THE PARTOGRAPH:
Case 4:  Mrs D, admitted 10:00

Level of head, 5/5.
Cervical dilatation, 1 cm.
Contractions 2 in 10 minutes, each lasting 20 seconds.

At 14:00
Level of head, 4/5.
Cervical dilatation 2 cm.
Contractions 2 in 10 minutes, each lasting 30 seconds.

At 18:00
Level of head, 3/5.
Cervical dilatation 4 cm.
Contractions 3 in 10 minutes, each lasting 35 seconds.

At 22:00
Level of head, 0/5.
Cervical dilatation 9 cm.
Contractions 5 in 10 minutes, each lasting 50 seconds.

Other similar examples can be made up.

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Learning Objectives

By the end of Unit 5, the participant should be able to:

1. Know when to start the partograph in the latent and active phases of labour.

2. Assess the progress of normal labour by measuring cervical dilatation, descent of fetal head and uterine contractions.

3. Know how often to make these assessments.

4. Record their findings accurately on a partograph.

5. Understand the difference between the latent and active phases of labour.
9. UNIT 6: RECORDING FETAL AND MATERNAL CONDITIONS

Teaching Objectives

1. Discuss observations of maternal and fetal conditions.
2. Teach how these are recorded on the partograph.
3. Review all aspects of recording normal labour on the partograph.

Materials Required

- Partographs
- Fetal skull and pelvis
- Blackboard or flipchart

The partograph’s main role is to help in the early recognition of prolonged labour, but it is also a concise and complete tool for recording all routine observations in labour. It saves on paper and on time, and makes it easy to rapidly review the total pattern of labour.

During Unit 6, you should teach the participants how to record observations on the fetal and maternal conditions during labour. Most of the information should be review but they must learn where and how to record it on the partograph.

9.1 The Fetal Condition

(See section 5.2 of the User’s Manual.)

Discuss with the participants how they assess the fetal condition in labour, how often they carry out observations and how they record their findings at present. Write down the main results of your discussion on the blackboard. These should include:

- Fetal heart rate
- State of liquor
- Moulding of fetal skull bones

Discuss why each is important. All trainees should be familiar with the first two. Some may not know about moulding.
To teach about moulding, try to obtain a model of a fetal skull and examine the head of a newborn baby. Show how the bones are separate and can move closer together in labour as the head squeezes through the pelvis.

Make sure participants understand the difference between caput and moulding, although each may be a sign of difficult prolonged labour with possible disproportion. It is usually impossible to assess the degree of moulding until the cervix is at least 4 cm dilated.

Some participants may be unsure of their ability to assess moulding. Reassure them about this. It sometimes is difficult, even for experts, and as long as they are able to assess cervical dilatation accurately, they will still be able to detect an abnormal labour using the partograph.

Participants should review section 5.2.3 of the User's Manual. Discuss any problems they have in understanding this unit.

9.1.1 Recording fetal condition on the partograph

Point out that the fetal condition is recorded on the top part of the partograph.

Fetal heart: Record every half-hour. If the participants have fully grasped how to record cervical dilatation on a graph, they should have no difficulty recording fetal heart rate. If necessary, review Unit 3, which describes recording events on graphs.

Liquor: Record once every 4 hours at the time of vaginal examination, but at any time if the liquor changes (e.g. becomes meconium-stained).

Moulding: Note and record at each vaginal examination.

Make sure all participants are able to record the fetal condition accurately on the partograph. Abbreviations to be used are explained in section 5.2.3 of the User's Manual.

Remind participants that when labour moves from the latent to the active phase, all recordings must be transferred at the same time.

Figure II.11 in the User's Manual illustrates this.

9.1.2 Management of fetal distress

Trainees will raise questions at this stage about what to do when any of the observations on fetal condition are abnormal. Take the opportunity to discuss this with
them. Action will vary depending on the local situation, but possible actions can be summarized as either:

<table>
<thead>
<tr>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer</td>
</tr>
<tr>
<td>or</td>
</tr>
<tr>
<td>Delivery</td>
</tr>
</tbody>
</table>

9.1.3 Artificial rupture of membranes (ARM)

As liquor is discussed, questions are also likely to be asked about artificial rupture of membranes (ARM) in labour. This is discussed in section 7 of the User’s Manual. Advice and guidelines differ from place to place so, in general, you should teach the local policy.

9.2 The Maternal Condition

Before reading about this in the User’s Manual (section 5.3), ask the trainees what observations they make on women in labour and how they record them. List them on the blackboard.

Discuss why these observations are made and what the normal ranges are. Trainees should now read this unit to revise these observations.

9.2.1 Recording maternal condition on the partograph

Demonstrate that maternal observations are made on the bottom part of the partograph. Point out that you have now covered and discussed every part of the partograph (except the action line) and what may at first have appeared confusing and difficult should now be much more clear and easy to follow.

9.2.2 Drugs, intravenous fluids and oxytocin

Many participants may not have access to these, but when they are used, demonstrate how their use should be recorded on the partograph. Apart from analgesics, no drugs, oxytocin, or IV fluids are likely to be needed in normal labour. (Oxytocin and its usage is discussed further in section 7 of the User’s Manual.)
9.3 Unit 6 Exercises

1. Ask participants to list all observations on the fetal and maternal condition and how often they should be recorded.

2. Make sure participants can record observations correctly on the partograph by calling out various recordings of, for example, fetal heart rate, condition of liquor and blood pressure. Check that they have been correctly recorded.

3. Gradually construct a completed partograph on your blackboard or flannelgraph by calling out observations and asking the participants to come and record them in turn. This kind of exercise is usually enjoyable and helps highlight problem areas.

4. Find labour records that have not used a partograph and see if participants can construct a partograph from them. This is often difficult, but can help a lot in understanding the partograph. It will also demonstrate how well the partograph gives a clear, concise picture of labour.

5. Where possible, have participants observe women in labour and record findings on a partograph. They should now be able to fully complete a partograph. At this stage, try to choose women likely to have normal labours.

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**Learning Objectives**

By the end of Unit 6, the participant should be able to:

1. Know what observations are made to assess fetal and maternal condition in labour.

2. Record fetal and maternal conditions accurately on the partograph.

3. Recognize abnormal recordings of fetal and maternal condition and be able to discuss action to fit the local situation.

4. Make all recordings and complete a partograph for a woman in normal labour.
10. UNIT 7: USING THE PARTOGRAPH TO RECOGNIZE ABNORMAL LABOUR

Teaching Objectives

1. Teach the recognition of prolonged labour using the alert and action lines.
2. Discuss other problems in labour.
3. Discuss management options for problems in labour.

Materials Required

- Blackboard
- Partographs
- Pencils and erasers

The participants should now be competent at making observations on the partograph and should be fully aware of the partograph pattern of normal labour.

This unit teaches the recognition of abnormally slow labour using the partograph and suggests possible actions at different stages. Other problems in labour are then discussed briefly.

10.1 Prolonged Labour

Review Unit 2.

Remind participants of these important facts:

- The partograph must only be started if contractions are 1 in 10 minutes, each lasting more than 20 seconds in the latent phase; or 2 in 10 minutes, each lasting more than 20 seconds in the active phase.
- The latent phase of labour should last no longer than 8 hours.
- In the active phase of labour, the cervix should dilate at 1 cm/hour, or faster.
On the partograph this means that the heavy black line after 8 hours of latent phase should not be crossed and, in the active phase, dilatation should not move to the right of the heavy alert line.

10.1.1 Prolonged latent phase

The participants should read and study section 6.1 of the User's Manual.

If labour has not reached the active phase after 8 hours of observation, the latent phase is prolonged.

A decision must be made about further management. This decision will depend on the local situation, but normally, possible actions are as follows:

- In a health centre: transfer to a central unit.
- In a hospital: continue to observe.

OR

- Rupture membranes and augment labour.

Discuss these actions within the context of the local situation with the participants.

10.1.2 Prolonged active phase

When cervical dilatation moves to the right of the alert line, this is a warning that labour is slow and there may be problems.

At this stage draw in the action line on the partograph. Show how the action line starts 4 hours to the right of the alert line and moves at 1 cm/hour, joining the corners of the boxes.

If cervical dilatation continues to progress slowly and reaches the action line on the partograph, labour is dangerously slow, and a decision about definite action must be taken.
Teach participants:

*Moving to the right of the alert line* means **WARNING**: Transfer woman from health centre to hospital.

*Reaching the action line* means **POSSIBLE DANGER**: Decision needed on further management (usually by obstetrician or medical officer).

Participants should now read and study sections 6.2 and 6.3 of the *User’s Manual*.

10.2 Management of Abnormal Progress of Labour

The WHO partograph gives early warning of slow progress in labour and also indicates when intervention is indicated.

Local situations and facilities vary greatly and each area can develop its own management plans. The management protocol described in section 7 of the *User’s Manual* was used successfully in a multicentre trial of the WHO partograph and is recommended in most settings. Participants should read these pages.

Discuss with them what options are appropriate in their local situation. Depending on the level of your participants, certain aspects of management may be discussed in detail. The possibility of artificial rupture of the membranes (ARM) may require particular discussion. The protocol recommends ARM in the active phase at any time, but particularly if dilatation moves to the right of the alert line.

10.3 Recognizing Other Problems in Labour

The partograph is particularly designed to recognize prolonged labour, but other problems may, of course, develop during a labour that is progressing normally. Discuss what these problems can be. Invite the participants’ suggestions, and draw up a list on the blackboard, or ask them to write their own list and then discuss all of their answers. Possible problems which should be included are:

- Rising blood pressure
- Passing no urine or marked proteinuria
- Bleeding
- Fetal distress
- Pyrexia
- Tachycardia and ketonuria
- Persisting high head
- Diagnosis of twins or malpresentation
All except the last of these can be diagnosed from recordings on the partograph. Point this out to the participants. It is also important to point out that obstructed labour may occur, even if labour is not prolonged. Watch especially for a head which remains high.

Discuss briefly what management each of these problems requires. This will largely depend on the local situation. In general, however, if any of these problems develop in a health centre without full obstetric facilities, transfer to hospital is indicated where possible.

### 10.4 Unit 7 Exercises

Participants should complete partographs demonstrating prolonged labour. Examples (plotting cervical dilatation only) follow. As before, the exercises can be reversed by asking participants to interpret completed partographs. (The participant also should be ready now to complete the exercises at the end of the User's Manual.)

1. Admitted 8:00, cervical dilatation 4 cm.
   - At 12:00, 6 cm.
   - At 16:00, 7 cm.

2. Admitted 14:00, cervical dilatation 1 cm.
   - At 18:00, 2 cm.
   - At 22:00, 2 cm.

3. Admitted 22:00, cervical dilatation 4 cm.
   - At 2:00, 8 cm.
   - At 6:00, 9 cm.

4. Admitted 5:00, cervical dilatation 2 cm.
   - At 9:00, 3 cm.
   - At 13:00, 5 cm.
   - At 17:00, 7 cm.

5. Admitted 3:00, cervical dilatation 1 cm.
   - At 7:00, 5 cm.
   - At 11:00, 9 cm.
   - At 13:00, still undelivered.

After plotting each dilatation, participants should decide which of these options should now be carried out.

- Wait 4 hours and perform next vaginal examination?
- Transfer to hospital?
- Decide further management based on careful assessment?
Learning Objectives

By the end of Unit 7, the participant should be able to:

1. Know when to start the partograph.
2. Understand and complete all parts of the partograph.
3. Describe all abnormalities in labour.
4. Know how to recognize prolonged labour on the partograph.
5. Know when to transfer a woman in labour from a health centre to hospital.
6. Have some knowledge of possible management options during prolonged labour.
Safe Motherhood Resource list

Abortion: A tabulation of available data on the frequency and mortality of unsafe abortion. WHO/FHE/MSM/93.13


Detecting pre-eclampsia: A practical guide – Using and maintaining blood pressure equipment. WHO/MCH/MSM/92.3.


The risks to women of pregnancy and childbearing in adolescence: A selected annotated bibliography. 1989. WHO/MCH/89.5.

The role of women's organizations in primary health care with special reference to maternal and child health including family planning. WHO/FHE/WHD/88.1

Women's Groups, NGOs and Safe Motherhood. WHO/FHE/MSM/92.3


Unless otherwise stated, all the above materials are available free of charge from:
World Health Organization,
1211 Geneva 27, Switzerland.
Tel 41 22 791 21 11,
Fax 41 22 791 0746; Telex 27821
Complications arising during pregnancy and childbirth cause the deaths of half a million women every year, the vast majority in the developing world. Over 4 million newborn babies die each year, most of them as a result of poorly managed pregnancies and deliveries. Millions more women and babies suffer debilitating and life-long consequences of ill-health.

The World Health Organization seeks to alleviate the burden of suffering borne by women, children and families, through its Maternal Health and Safe Motherhood Programme which seeks to reduce levels of maternal and neonatal mortality and ill-health significantly by the year 2000.

The Organization's activities fall into four main areas:

- technical cooperation with countries in planning, implementing, managing and evaluating national safe motherhood and newborn care programmes;
- epidemiological research into levels and causes of maternal and neonatal mortality and operational research on cost-effective ways of reducing deaths and disabilities;
- strengthening human resources for the provision of essential obstetric care, including development of standard treatment and management protocols, programme planning guidelines and training materials;
- production of advocacy materials and collection, analysis and dissemination of information to provide scientifically sound data on the nature and dimensions of maternal and newborn mortality and morbidity and how change can be brought about.

If you would like to know more about the WHO Maternal Health and Safe Motherhood Programme, write to:

Maternal Health and Safe Motherhood Programme
Division of Family Health
World Health Organization
1211 Geneva 27
Switzerland