Technical Brief
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ANGOLA: Use of pregnancy wheel for more accurate expected date of delivery recording on MCH Handbook

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Background

The Angola Ministry of Health (MOH) in collaboration with Japan International Cooperation Agency (JICA) started developing the Maternal and Child Health (MCH) Handbook in 2013. Two existing home-based records at the time and several educational materials were integrated into one tool. After several pilot tests and corresponding revisions, the integrated MCH Handbook in Angola has been officially implemented in three model provinces since 2017.

While developing and finalizing the integrated tool was a big first step toward MCH Handbook implementation, capacity building of health workers was equally an imperative step. This is because health workers play an important role in implementing the MCH Handbook through providing healthcare and knowledge to mothers and children; and by recording necessary information in the MCH Handbook. Health worker training, monitoring and supervision (M&S) were the main components of capacity building, and these activities were continuously assessed and necessary improvements were made in the three model provinces.

Challenges in calculating EDD

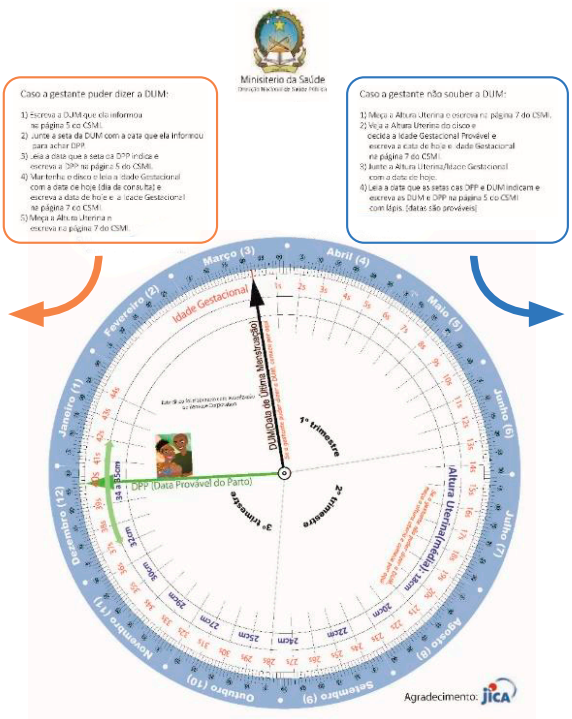
The health worker training in Angola is designed to provide basic knowledge on MCH services as well as how to fill out the MCH Handbook. In the early stages of the trainings, it was discovered that some health workers had difficulties in estimating pregnant women's expected date of delivery (EDD), especially if EDD fell into the following year. However, the practice of fundal height (FH) measurement as recommended by the WHO was quite common. Many cases were also found where FH (in cm) was considered equal to gestational age (in weeks) even for pregnancy of less than 24 weeks gestation. Consequently, M&S after the training revealed that the EDD recording section in many MCH Handbooks was not completed and left blank. To address these challenges, the MOH and JICA experts decided to develop the pregnancy wheel to help health workers determine EDD.

Development of pregnancy wheel

Estimating gestational age and EDD accurately is essential for health workers to: (i) provide necessary health care based on gestational age (e.g. malaria

Instructions for when pregnant women know the date of last menstration (DLM)

1) Record DLM that the pregnant woman informed on page 5 of MCH Handbook.
2) Locate the arrow of DLM to the date she informed in order to find EDD.
3) Read the date that the arrow of EDD indicates and record EDD on page 5 of the MCH Handbook.
4) Keep the disc and read the gestational age with today's date (date of consultation) and write today's date and gestational age on page 7 of MCH Handbook.
5) Measure fundal height and record it on page 7 of MCH Handbook.



Instructions for when pregnant women do not know DLM

1) Measure fundal height and record it on page 7 of MCH Handbook.
2) Find the fundal height on the disc and determine probable gestational age. Record today's date and gestational age on page 7 of MCH Handbook.
3) Locate the fundal height/ gestational age to today's date.
4) Read the date that the arrows of EDD and DLM indicate and record them on page 5 of the MCH Handbook with pencil (These are provable dates).

▲ **Figure 1. Pregnancy wheel developed in Angola**

Introducing the pregnancy wheel at the training

prevention, de-worming medicine); (ii) educate pregnant women based on gestational age (e.g. danger signs at each trimester, when to start breast massage); and (iii) help pregnant women prepare for delivery (e.g. securing transportation to the facility, purchasing necessary items for the newborn). Therefore, the pregnancy wheel was developed to help health workers estimate pregnancy gestational age and EDD quickly and more accurately. The pregnancy wheel was pilot tested in a few trainings after it was revised to contain instructions indicating how to find EDD in two different scenarios: when pregnant women know the date of their last menstruation and when they don't (Figure 1).

Follow up through M&S

As is often the case, health workers feel that they understand everything during the training, when they return to their own facility to actually conduct ANC and disseminate their knowledge to their colleagues, they face many challenges. Thus, M&S was initiated immediately after training to assess the health workers' understanding and, if necessary, to help them fill out the MCH Handbook correctly during ANC, especially with regards to EDD. Supervisors took ample time to review how to use the pregnancy wheel at the initial M&S. Furthermore, they provided advice on actual ANC consultations since many health workers were yet to fully figure out their consulting procedure using the new tools (MCH Handbook and pregnancy wheel). Supervisors often reminded health workers about the ANC role-play held during the training and reinforced the right timing to move a pregnant woman to the examination bed to measure FH if she did not know the date of her last menstruation. In order to prevent the same pregnant woman from lying on the examination bed repeatedly and reduce the burden on her, it is necessary to follow the prescribed consultation procedures.

As a result, health workers have experienced dramatic improvement in their own daily work. Positive feedback was given by most health workers such as; *"The pregnancy wheel made my job not only easier but also much faster. I wish I had known this back then (Health worker, Benguela)." "Now that I have this pregnancy wheel, I am confident in recording the EDD on the MCH Handbook and assisting women properly (Health worker, Huambo)."* Municipal and Provincial supervisors also acknowledged that it was much easier to show how to determine EDD by using the pregnancy wheel at the training and observed improvements in recording EDD at many health facilities (Table 1). Based on the trial use in Benguela province, the pregnancy wheel was printed and officially introduced to the other model provinces.

Conclusion

It was observed that use of the pregnancy wheel promoted speed and accuracy in finding and recording EDD in the MCH Handbook by health workers. It also helped health workers learn how to accurately measure FH. These certainly contributed to health workers providing necessary ANC services based on gestational age. Along with plans to scale up the implementation of MCH Handbook nationwide, the MOH and JICA experts also plan to create a short movie demonstrating how to use the pregnancy wheel so that health workers will be able to check themselves without waiting for the M&S teams visiting their facilities. In the near future, it may become even easier to find the EDD with development of digital applications. Till then, the pregnancy wheel will keep serving as a good tool for supporting health workers to provide better MCH services in Angola.

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▼ Table 1. Representative comments and observations on use of the pregnancy wheel

Position	Comments and Observations
Health workers	• It is much easier and faster to determine EDD. • I am more confident in recording EDD on the MCH Handbook.
Municipal supervisors	• It was easier to show health workers how to determine EDD at the training. • This tool helped a lot of health workers who were not very good at calculation. • We will still need to closely monitor and supervise whether the tool is properly used at each health facility.
Provincial supervisors	• Accuracy of EDD was highly improved. • By implementing the pregnancy wheel, more health workers were able to measure FH accurately.
MOH supervisors	• Thanks to the pregnancy wheel, the way supervisors teach how to determine EDD in different scenarios was also standardized, which will be an advantage for scale-up phase.

Further readings:

1. Balogun, O, et al. Impact of the Maternal and Child Health handbook in Angola for improving continuum of care and other maternal and child health indicators: study protocol for a cluster randomised controlled trial. *Trials.* 200; **21**(1): 1-16.

2. World Health Organization. *WHO recommendations on antenatal care for a positive pregnancy experience.* Geneva: WHO; 2016.