



## Impact of MCH Handbook in Angola for improving continuum of care and other MCH indicators: study protocol for a cluster randomised controlled trial



Maternal and Child Health Handbook, Angola, 2018

### Why does Continuum of Care matter?

In order to improve maternal and child health, continuum of care (CoC) for women and children, starting from pregnancy through childbirth and into the infants' childhood, has been promoted. CoC has two dimensions: first, the time of care, and second the place of care. CoC involves the concept of an integrated system of care that guides and tracks individuals over time, through a comprehensive array of health services involving all levels of care. CoC for mothers, newborn and children forms the basis of health care in many high-income countries which have the best maternal and child health indicators. In Angola, as in many other low-income countries, there is a lack of an integrated system to manage the health of pregnant women and young children on an ongoing basis. Thus, the Angolan Ministry of Health is partnering with Japan International Cooperation Agency to build capacity of health workers through trainings and implementation of the Maternal and Child Health (MCH) Handbook to improve service utilisation.

### MCH Handbook in Angola

The MCH Handbook is an integrated home-based record (HBR) designed to record in a single document, all the information regarding health services provided to a pregnant woman and her child. The MCH Handbook has the potential to support CoC, which is key to strengthening maternal, newborn and child health (MNCH), by connecting CoC dimensions. The Angolan MCH Handbook is a 36-page integrated HBR designed to educate and keep health records for each pregnant woman and her child, from pregnancy through early childhood. It was developed based on the prenatal handbook and child health card currently in use, and by adding standardised educational material. The MCH Handbook contains a log for making entries on maternal and child's personal health information during the course of pregnancy, delivery and postpartum; weight during and after pregnancy; infectious disease prevention and control; infant nutrition; child developmental milestones from the ages of 0–59 months; vaccination and illnesses records and growth charts for children. The cultural appropriateness and acceptability of the handbook among pregnant women and health workers have been previously assessed within a small cohort.

### Need for the evidence on HBRs

Given its design, the Angolan MCH Handbook has the potential to respond to the need for more unified record keeping, and support improvements in CoC in Angola. Regardless, while the potentially important benefits of implementing HBRs are known and highlighted in the WHO recommendations on HBRs for MNCH, there is currently insufficient evidence to show the superiority of the integrated MCH Handbook over other alternatives – such as programme-specific HBRs including child vaccination cards for child immunisation programmes, growth charts for child nutrition programmes and prenatal cards for reproductive and maternal health programmes. Therefore, the Angola study was designed with the aim to estimate the impact of an intervention package including distribution of the MCH Handbook and its supplementary interventions to women, on the utilisation of services provided at healthcare facilities from pregnancy through the postnatal and early childhood period compared to the traditional use of two standalone HBRs – the prenatal handbook and child health card. Even though the MCH Handbook was generally well received among both mothers and health workers, training would be required to derive the full benefits of the MCH Handbook. Thus, the intervention consisted of three basic components: i) distribution of MCH Handbook (issued to pregnant women at each health facility at the HBR distribution points in the intervention arm), ii) health workers training on the MCH Handbook operation, and iii) community sensitisation and mobilisation among pregnant women on the use of the MCH Handbook. Intervention was delivered to pregnant women/mothers and health workers in the intervention arm.

### Methods and techniques of the study

This study was a cluster randomised trial (c-RCT) with over 10,000 women and involving public health care facilities across all 10 municipalities located in Benguela Province, Angola. All women who went to participating healthcare facilities and with confirmed pregnancy around the beginning of the trial period were included in the study. Women were randomised according to the municipality where their primary maternity and/or childcare services were located. The intervention was administered to women in the intervention arm while those in the control arm



Data collector using MCH Handbook to check pregnant woman's eligibility

continued the traditional use of two stand-alone HBRs. Specifically, the study aimed to i) evaluate the impact of the MCH Handbook on CoC completion, ii) assess uptake and utilisation of the MCH Handbook by both families and health workers, and iii) assess the impact of the MCH Handbook distribution and utilisation on a wide range of care for maternal and child health (Table 1). Complete CoC was defined by minimum number of antenatal care visits, facility-based delivery, postnatal care for mother and newborn, child vaccinations at birth and up to 3 months of age. The study protocol was registered and a detailed description of the study methods has been published elsewhere.

### Expected outcomes and nation-wide scale-up

The findings from this study are expected to form a basis for revising the current trial version of the Angola MCH Handbook and provide a framework for policy guiding nationwide scale-up and distribution of the MCH Handbook. Supplementary studies focusing on

barriers and facilitators of implementation of the MCH Handbook and cost-effectiveness are also ongoing to provide further evidence.

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#### Further readings:

1. Kerber, K. J, et al. Continuum of care for maternal, newborn, and child health: from slogan to service delivery. *Lancet*. 2007; **370**(9595): 1358-1369.
2. 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*. 2020; **21**(1): 1-16.
3. World Health Organization. *WHO Recommendation on home-based records for maternal, newborn and child health*. Geneva: WHO; 2018.

▼ Table 1. List of outcomes and definition of outcome indicators

Outcome	Definition	Type	Indicators
<b>Primary outcome</b> Complete CoC (maternal behaviour-based)	Time dependent composite outcome. Complete CoC is minimum number of ANC visits + facility-based delivery + PNC for mother and newborn + child vaccinations at two timepoints – at birth and at 2~3mo. Includes women who attended ANC and other MNCH services only. Complete CoC=1 when all indicators=1	Binary	First ANC timing; No. of ANC services; Facility delivery; PNC_mother; PNC_child; Vaccinations at birth and at 2 mo infant age
<b>Secondary outcomes</b> Rate of MNCH service utilisation	Total no. of actual MCH service used per person per arm compared with an expected minimum number of service utilisation. Estimate means for each arm.	Continuous	No. of ANC services; Facility delivery; PNC_mother; PNC_child; Vaccination
Complete CoC (service-based)	Time dependent composite outcome. Composite outcome including ≥4 ANC visits + facility-based delivery + PNC of mother and newborn + complete child immunisation up to 2~3 mo. Complete CoC=1 when all indicators=1	Binary	First ANC timing; No. of ANC services; Facility delivery; PNC_mother; PNC_child; Vaccination
Neonatal mortality	No of deaths within the first 28 days of life compared to total number of deliveries in each study arm. NM=1 when all indicators=1	Binary	Live birth; Infant death; Date of death
ANC service utilisation	No. of women who receive ≥4 ANC visits in each arm regardless of timing of first ANC. Adequate ANC=1 if no. of ANC services=1	Binary	First ANC timing; Received ANC; No. of ANC services
	No. of women who receive ≥8 ANC visits in each arm regardless of timing of first ANC. Adequate ANC=1 if no. of ANC services=1	Binary	First ANC timing; Received ANC; No. of ANC services
Facility-based delivery	No of facility-based deliveries in each arm	Binary	Facility delivery
Infant health check-up	Presence of at least one HBR entry from baby-well clinic attendance	Binary	Record entry for any of current weight, polio1, pentavalent, pneumo1 or rota1
Maternal morbidity and pregnancy complications detection rate	No. of cases of specified disease conditions and pregnancy complications diagnosed by an HCP in each arm. Maternal morbidity=1 if any indicator=1	Binary	High blood pressure; Preeclampsia; Miscarriage; Stillbirth; Vaginal bleeding; Anaemia; Malaria; TB; HIV; Diabetes
Infant morbidity rate	Total no. of disease cases attended by an HCP. Infant morbidity=1 if all indicators=1	Binary	Past month sickness; Sought treatment; Treatment from HP
Infant mortality	No of deaths of infants <1 yr old compared to total number of deliveries in each study arm. IM=1 when if both indicators=1	Binary	Livebirth; Infant death
Maternal health behaviour	Prevalence of maternal health behaviour between arms with regards to tobacco use, alcohol use, PMTCT, malaria prevention, use of ITNs and family planning. Prevalence of each indicator will be compared between intervention and control arms	Binary	Current alcohol use; Current tobacco use; PMTCT; Family planning use; Knowledge change tobacco use; Knowledge change alcohol use
Malaria prevention		Binary	ITN possession; ITN use; Malaria prophylaxis use
Maternal depression	No of cases of maternal postnatal depressive symptoms in each arm	Binary	EPDS
Infant feeding practices	Appropriate infant feeding practices including EIBF, EBF and absence of pre-lacteal feeding. Adequate if all indicators=1	Binary	EIBF; Pre-lacteal feeding; Current BF
Child vaccination	Composite outcome for no. of complete fully vaccinated children at 3 mo in each study arm. Vaccination=1 if all indicators=1	Binary	Polio-0; BCG; Hepatitis B; Polio-1; Pentavalent; Pneumo-1; Rotavirus-1

CoC= continuum of care; ANC=antenatal care, PNC= postnatal care; HBR=home-based record; MNCH=maternal, newborn and child health; NM=neonatal mortality; IM=infant mortality; PMTCT=prevention of mother-to-child transmission; ITN=insecticide treated net; EIBF=early initiation of breastfeeding; EBF=exclusive breastfeeding