



## CAMBODIA: Comparative advantage of MCH Handbook over card-type records in mothers' behaviors and knowledge



Maternal and Child Health Handbook (pilot version), Cambodia, 2007

### Why was a community-based controlled trial conducted?

The value of Maternal and Child Health (MCH) Handbooks has been empirically recognized. Previous studies indicated that MCH Handbooks, booklet-type records have the comparative advantages over card-type records by drawing greater attentions and supports from pregnant women and mothers in both high-income and low-income countries. However, its scientific evidence is limited.

To assess the advantage of the MCH Handbook over card-type records in Cambodia, a community-based controlled trial was conducted during the period from 2007 to 2009. The trial was conducted in two districts in Kampong Cham province. Two health centers and another two health centers were selected respectively as intervention group and as control group. A Cambodian version of the MCH Handbook was developed by customizing the Japanese MCH Handbook in Cambodian socio-economic and socio-cultural context. The customization was thoroughly based on the feedbacks on the design and contents of the draft MCH Handbook from health workers (nurses and midwives) and end-users (pregnant women and mothers). Since the study areas had an ethnic minority group (namely Cham, Muslim group consisting of less than 5% of total population), the MCH Handbook was carefully designed so as to be more acceptable in their culture. The MCH Handbook was, then, distributed to and used by pregnant women at the intervention health centers, while two separate card-type records (i.e. the child growth card and maternal health record) were implemented as usual at the control health centers.

Pre-intervention and post-intervention surveys were conducted, by involving 320 women with children under 12 months of age from intervention group and another 320 from the control group. Three key behavioral indicators were employed to measure the effectiveness of the MCH Handbook: (i) antenatal care (ANC) service utilization; (ii) delivery assisted by skilled birth attendants (SBAs); and (iii) facility-based delivery.

### Effectiveness in mothers' service utilizations and knowledge on danger signs

Three hundred and twenty mothers were randomly selected in intervention group, during pre- and post-intervention periods. All the mothers who utilized ANC services at least once were provided with the MCH handbook. Similarly, 320 mothers were randomly selected in control group, during pre- and post-intervention periods. All the mothers who utilized antenatal care services at least once were provided with the two card-type records. At the time of the post-intervention survey, 290 (90.6%) of the intervention group owned the MCH Handbook, while 260 (81.3%) of the control group owned the two separate card-type records. An increase in all the three indicators was confirmed in both intervention and control groups between pre- and post-interventions. The increase was greater in intervention group than in control group (Figure 1). Note that a significantly higher increase was detected in the proportion of mothers who made  $\geq 4$  ANC visits and the proportion of mothers who had deliveries assisted by SBAs between pre- and post-interventions, in intervention group. No significant increase was detected in these two behavioral indicators between pre- and post-interventions, in control group. Concerning the delivery at health facilities, both intervention and control groups showed a significant increase, and intervention group showed a slightly greater increase than that of control group.

The Cambodian version of the MCH Handbook contains instruction and information on danger signs during pregnancy and delivery, prevention of anemia, parasitic diseases and HIV, and breastfeeding practices, by employing user-friendly pictorial guidance with due consideration to illiterate and less literate pregnant women and mothers. Therefore, we also estimated effectiveness of the Handbook on mothers' knowledge on the aforementioned instruction and information. Although women who could correctly identify danger signs during pregnancy and delivery increased in both intervention and control groups, the increase in intervention group was greater than that of control group.



A midwife filling data in an MCH Handbook during antenatal care outreach activities

Concerning maternal knowledge on prevention and breastfeeding, women in intervention group also showed a greater increase in knowledge than those in control group .

### Contexts where the Cambodian MCH Handbook benefited

To assess the cultural appropriateness of the MCH Handbook and identify the potential contributors and obstacles to its implementation, qualitative data were collected and analyzed. Semi-structured interviews with 38 individuals (i.e. multiparous women having experiences of using both the MCH Handbook and card-type records, health-center-based nurses and midwives, village health volunteers and traditional birth attendants) were conducted in intervention group.

The results of semi-structured interviews indicated that the MCH Handbook was positively accepted and used by both end-users and health workers. Culturally appropriate illustrations helped the MCH Handbook effectively convey key health messages to the illiterate and less literate. Mothers having difficulties in reading often requested their husbands or school-aged children to read the MCH Handbook for them. Thus, the MCH Handbook served as the tool which effectively promotes MCH-related communication between husbands and wives. The information included in the MCH Handbook can sometimes be shared with adolescent girls, thereby provide them with opportunities to understand pregnancy, child-bearing and child-rearing. Health workers recognized that there were fewer cases of reissuing of the Handbook and more cases of bringing the Handbook to ANC clinics than card-

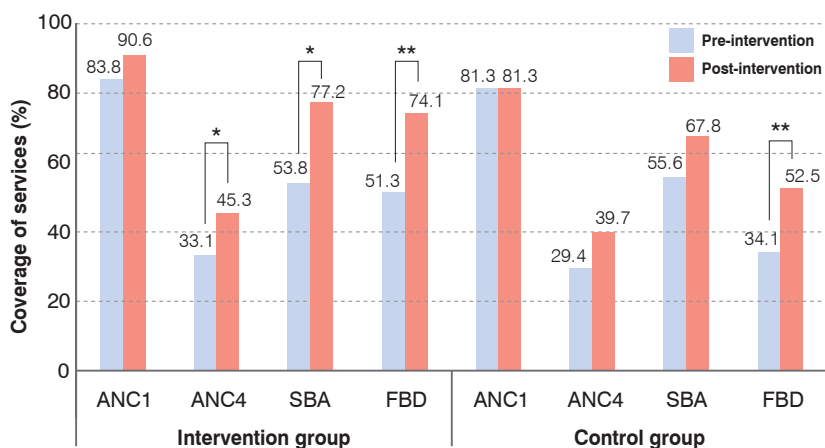
type records. Thus, the MCH Handbook served as an effective handy education material for women.

### Conclusion

The results of both quantitative and qualitative data analyses indicated that the MCH Handbook contributed to increasing the numbers of: (i) ANC service utilizations; (ii) deliveries assisted by SBAs; and (iii) facility-based deliveries. Moreover, the use of the MCH Handbook was associated with the increase in MCH-related knowledge among mothers. Previous studies reported that the use of the MCH Handbook is likely to have increased the number of facility-based deliveries, and improved maternal health-seeking behaviors. This study additionally identified that the use of the MCH Handbook promotes ANC attendance and deliveries assisted by SBAs. Previous studies already found that MCH handbooks increase mothers' knowledge on exclusive breastfeeding, child immunization, and risks during pregnancy and childbirth. Our study corroborates these results, by showing the increased MCH-related communication not only between couples but also generations.

When conducting the study, many mothers in control group attempted to obtain the MCH Handbook, having heard of it. To control contamination, health centers in the control group were adequately informed that the MCH Handbook would be introduced after the pilot study was completed. In view of its effectiveness identified in this study, it is recommended that nationwide scaling-up of the MCH Handbook be considered as an essential part of the country's maternal and child health programme.

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ANC1: > 1 antenatal care visits; ANC4: ≥ 4 antenatal care visits;  
SBA : delivery assisted by skilled birth attendant; FBD: facility-based delivery  
\*  $p < 0.05$ ; \*\*  $p < 0.01$

▲ Figure 1. Behavior changes in key MCH service utilization

### Further readings

1. Yanagisawa S, et al. Effect of a maternal and child health handbook on maternal knowledge and behaviour: a community-based controlled trial in rural Cambodia. *Health Policy Plan* 2015; **30**(9): 1184-92.
2. Baequni, Nakamura Y. Is maternal and child health handbook effective?: meta-analysis of the effects of MCH handbook. *J Int Health* 2012; **27**: 121-7.
3. Hagiwara A, et al. Is the maternal and child health (MCH) handbook effective in improving health related behavior? Evidence from Palestine. *J Public Health Policy* 2013; **34**: 31-45.