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Review of Newborn Health Content in Integrated Management of Newborn and Childhood Illnesses and Integrated Community Case Management Training Materials and Job Aids in Seven Maternal and Child Survival Program Countries

Findings and Recommendations
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The Maternal and Child Survival Program (MCSP) is a global, $560 million, 5-year cooperative agreement funded by the US Agency for International Development (USAID) to introduce and support scale-up of high-impact health interventions among USAID's 25 maternal and child health priority countries,* as well as other countries. MCSP is focused on ensuring that all women, newborns and children most in need have equitable access to quality health care services to save lives. MCSP supports programming in maternal, newborn and child health, immunization, family planning and reproductive health, nutrition, health systems strengthening, water/sanitation/hygiene, malaria, prevention of mother-to-child transmission of HIV, and pediatric HIV care and treatment.

* USAID's 25 high-priority countries are Afghanistan, Bangladesh, Burma, Democratic Republic of the Congo, Ethiopia, Ghana, Haiti, India, Indonesia, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Nepal, Nigeria, Pakistan, Rwanda, Senegal, South Sudan, Tanzania, Uganda, Yemen and Zambia.

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Acknowledgments

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Abbreviations

CHW	community health worker
cIMCI	community Integrated Management of Childhood Illness
DRC	Democratic Republic of the Congo
ENC	essential newborn care
FMOH	Federal Ministry of Health (Ethiopia)
iCCM	integrated community case management
IMCI	Integrated Management of Childhood Illness
IMNCI	Integrated Management of Newborn and Childhood Illness
KII	key informant interview
KMC	kangaroo mother care
LBW	low-birthweight
MCSP	Maternal and Child Survival Program
PNC	postnatal care
PSBI	possible serious bacterial infection
USAID	US Agency for International Development
WHO	World Health Organization

Executive Summary

Introduction and Purpose

In the early 1990s, the World Health Organization (WHO) and UNICEF developed the Integrated Management of Childhood Illness (IMCI) as the main strategy to promote health and provide preventive and curative services for children under 5 in countries with high child mortality. In 2003, care for newborns under 1 week of age was added to IMCI, and in many countries, the strategy was renamed Integrated Management of Newborn and Childhood Illness (IMNCI). While the inclusion of newborn care in IMCI initially focused on the outpatient setting, countries included some elements of inpatient newborn care into the IMNCI platform during the adaptation process. Over 100 countries have adopted IMNCI and implemented its three components. With the aim of bringing child health services closer to the community, countries have also implemented integrated community case management (iCCM) of pneumonia, diarrhea, and malaria for children 2–59 months and care for newborns at home since the early 2000s, which is seen as an extension of IMNCI.

As new evidence builds, global recommendations on newborn care delivery at the primary health care level are expanding. While it is assumed that countries generally adopt the contents of the WHO sick young infant module and global recommendations in newborn care, what the "N" in IMNCI translates to at countries level is not well understood.

This assessment was designed to understand the newborn care content in country IMNCI and iCCM materials, specifically focusing on content related to essential newborn care (ENC), postnatal care (PNC), care for low-birthweight (LBW) and preterm babies, breastfeeding and support to mothers for breast milk feeding, management of possible serious bacterial infection (PSBI), and care during referral. The review findings will contribute to global- and national-level discussions and revisions to newborn content in standard guidelines for primary health service delivery.

Methodology

The assessment was primarily conducted through a desk review and analysis of newborn content in IMNCI and iCCM materials from selected countries of the Maternal and Child Survival Program (MCSP), namely Democratic Republic of the Congo (DRC), Ethiopia, Mozambique, Nepal, Nigeria, Rwanda, and Zambia. The newborn content in these materials was compared with global recommendations. Key informant interviews (KIIs) were held with managers and experts from the Ethiopia Federal Ministry of Health (FMOH). Preliminary findings of the review were vetted in a validation workshop with child and newborn health experts from MCSP's and the US Agency for International Development's Washington, DC, offices.

Findings

IMNCI materials from DRC, Ethiopia, Mozambique, Nigeria, Rwanda, and Zambia, and iCCM materials from Ethiopia, Nigeria, Mozambique, and Nepal were reviewed. The review was limited to materials that MCSP advisors in-country provided in consultation with their ministries of health. Findings revealed variations in the newborn care content in the country IMNCI and iCCM materials compared with the current global recommendations. While DRC and Ethiopia integrated the current newborn care recommendations into their main IMNCI 0–59 months' materials for outpatient settings, Mozambique and Zambia have separate newborn/young infant chart booklets for use in inpatient and/or outpatient settings.

Table 1 provides a summary of countries' IMNCI materials that aligned with newborn content in standard WHO/UNICEF guidance.

Table 1. Countries with Integrated Management of Newborn and Childhood Illness materials aligned to World Health Organization/UNICEF newborn guidelines

	DRC	Ethiopia	Mozambique	Nigeria	Rwanda	Zambia
Essential newborn care						
Care for small babies						
Predischarge postnatal care						
Postnatal care in the first week of life						
Care for sick young infant with possible serious bacterial infection						
Stabilization and care during referral						

Key: Pale blue = Yes, white = No

DRC, Ethiopia, Mozambique, and Zambia systematically integrated essential newborn care, care for LBW and preterm babies, and PNC in line with the current global recommendations in their IMNCI materials. The IMNCI materials from Nigeria and Rwanda were found to align with the WHO/UNICEF standard IMNCI materials for newborn care, primarily focusing on management of sick young infants in outpatient settings, when to refer, and care during referral.

The review of iCCM materials revealed that Ethiopia, Mozambique, and Nepal integrated some elements of current recommendations in newborn care within their iCCM materials to varying degrees. Table 2 summarizes countries' iCCM materials that include standard WHO/UNICEF guidance. The materials from Nigeria keep with the WHO/UNICEF iCCM recommendations, so they do not have newborn content.

Table 2. Countries with integrated community case management materials aligned to World Health Organization/UNCIEF newborn guidelines

	Ethiopia	Mozambique	Nepal	Nigeria
Essential newborn care				
Care for small babies				
Predischarge postnatal care				
Postnatal care in the first week of life				
Care for sick young infant with possible serious bacterial infection				
Stabilization and care during referral				

Key: Pale blue = Yes, white = No

In terms of organization and delivery of the IMNCI and iCCM trainings, the facilitator's manuals from the countries were generally found to be in line with the guidance for organizing and delivering trainings in the standard WHO/UNICEF materials. However, KIIs with managers and experts from the Ethiopian FMOH revealed that having instructions in the facilitator's manual does not guarantee their implementation. This is a result of challenges related to short training duration, low caseload of sick young infants for practice sessions, poor quality of videos and photo booklets, and weak post-training follow-up and mentoring.

This assessment is based on the desk review of IMNCI and iCCM materials from selected MCSP countries (listed above) and KIIs. It does not assess how the content in the materials is taught or how the content is implemented at service delivery points.

Recommendations

For Global Partners

The present review revealed that countries already incorporated ENC and small and sick newborn care elements into their existing IMNCI and iCCM modules.

- It is important for global partners to update the standard WHO/UNICEF guidelines for IMNCI (latest update: 2014) and for iCCM (developed in 2011) to keep with WHO's most recent guideline related to newborn health (2017) and evidence around task shifting. This will ensure countries have access to updated newborn content whenever they plan for the next improvement of modules in-country.
- Global partners should consider developing a document with information on standardized packages of key elements of ENC and care of small and sick newborns. This document could be provided to countries as an easily accessible resource of key materials to be included if the country program considers adding elements of ENC and care of small and sick newborns into their current IMNCI and iCCM chart booklets and training materials.
- There is a need to fill the missing content on care for small (LBW and preterm) babies in the standard WHO/UNICEF IMNCI materials to enable provision of appropriate care for this vulnerable group of babies in outpatient settings. Content related to assessment, classification, and management based on weight and gestational age needs to be included. Moreover, instructions on home care counseling need to include specific content on caring for small babies at home, including feeding, hygiene, and keeping the baby warm, and how to care for twins.
- Global partners must strengthen instructions on infection prevention for providers and counseling for caretakers. Furthermore, the content on counseling caretakers on "home care," including the additional care needed for vulnerable newborns, is too generic and must be more detailed.
- Consider revising the sections of the standard WHO/UNICEF IMNCI materials that focus on feeding difficulties and underweight: add cutoffs and guidance on who should be referred for better care, and emphasize more frequent follow-up than the recommended 14 days for sick young infants with low weight for age.
- Develop a best practice document on how countries adapted and implemented their IMNCI and iCCM materials to ensure newborn content is contextually and technically sound.

For Countries

As country IMNCI and iCCM materials mirror the WHO/UNICEF standard materials, the recommendations above are applicable to countries as well.

- Develop tailored intrafacility referral systems as part of the implementation guidelines for IMNCI to ensure all sick newborns receive the requisite care, as the first point of contact for those 1 week or younger is typically either the under-5 outpatient department or the postnatal clinic, with providers in the latter often not trained in IMNCI.
- Strengthen the content on guidance/protocol on referral of young infants with PSBI in the iCCM materials to emphasize the importance of stabilization and safe transfer (i.e., community health worker referring to health center and health center further referring to hospital). It is important to avoid delays in care for critically ill young infants due to ongoing referrals that keep with the preferred management option for sick young infants.
- For countries that currently use IMNCI and iCCM as their main newborn care platform, upgrade the materials to incorporate the 2017 WHO Recommendations on Newborn Health guidelines as appropriate to the level of providers so that care providers can be trained in and have access to guidelines appropriate for their level.
- Countries that use newborn care platforms other than IMNCI and iCCM and have not already adapted the 2017 WHO Recommendations on Newborn Health should strengthen the content to incorporate current global recommendations on newborn care as appropriate to the level of provider.
- Develop context-specific, innovative, and hands-on strategies for provider capacity development in IMNCI and iCCM that do not take providers away from their posts for extended periods of time. While countries have generally adapted the standard training courses in IMNCI and iCCM, it is also important to devise contextualized capacity development strategies, including in settings where providers must often pivot between routine service delivery and "crisis mode." These could include improved capacity development approaches, such as blended learning; low-dose, high-frequency training; eLearning; and attachments to high-volume sites to ensure competency-based training is provided in a manner that allows for the "expanded package" to be appropriately presented, learned, and mastered.

Introduction and Rationale

Over the past 25 years, child mortality has decreased by more than half, dropping from 93 to 41 deaths per 1,000 live births between 1990 and 2016.[1] Yet in 2016, an estimated 5.6 million children still died before reaching their fifth birthday, mostly from conditions that are readily preventable or treatable with proven, cost-effective interventions.[2] While the child mortality rate dropped by 56% between 1990 and 2016, the decline in the newborn mortality rate was lower, at 49%, and newborn deaths now account for almost half of all deaths among children younger than 5.[3]

In 1995, the World Health Organization (WHO) and UNICEF developed Integrated Management of Childhood Illness (IMCI) as the main strategy to promote health and provide preventive and curative services for children under 5 in countries with child mortality rates greater than 40 deaths per 1,000 live births. In 2003, care for newborns under 1 week of age was added to IMCI, and the strategy was renamed Integrated Management of Newborn and Childhood Illness (IMNCI).[4] This strategy fosters a holistic approach to child health and development, focusing on major causes of childhood morbidity and mortality. In health facilities, IMNCI promotes the accurate identification of childhood illnesses in outpatient settings, facilitates appropriate treatment of major illnesses, strengthens counseling of caretakers (including prevention messages), and supports referrals for seriously ill children. While the inclusion of newborn care initially focused on the outpatient setting, countries have included some elements of inpatient newborn care, including essential newborn care (ENC) and postnatal care (PNC), into the IMNCI platform during their adaptation process.

Over 100 countries have adopted IMNCI and implemented its three components—improving health worker skills, strengthening health systems, and improving family and community practices—to varying degrees. IMNCI's distillation of case management of the major causes of mortality of under-5 children into a clinical algorithm and guideline was highly appreciated by service providers and policymakers for its simplicity and comprehensiveness, and it transformed how care for children is perceived at global and country levels.[5] However, effective coverage at scale of all the components is rarely achieved due to particular challenges related to health systems and inadequate efforts in systematically addressing community behaviors and practices.[6] Since the early 2000s, different countries have embraced a task-shifting approach and implemented integrated community case management (iCCM) of pneumonia, diarrhea, and malaria for children 2–59 months as an extension of IMNCI, with the aim of bringing child health services closer to the community.[7] Based on contextual realities, a subset of countries has also used this platform to integrate identification and management of HIV and malnutrition.

While the latest update of the standard IMNCI chart booklet was in 2014 and the iCCM standard guideline was developed in 2011, WHO published a series of four technical recommendations related to newborn,[8] child,[9] adolescent,[10] and maternal[11] health in 2017. These new recommendations, however, do not indicate at

[1] Hug L, Sharrow D, You D. 2017. *Levels & Trends in Child Mortality: Report 2017*. New York City: UNICEF.
[2] Hug L, Sharrow D, You D. 2017. *Levels & Trends in Child Mortality: Report 2017*. New York City: UNICEF.
[3] Devine S, Taylor G. 2018. *Every Child Alive: The Urgent Need to End Newborn Deaths*. New York City: UNICEF.
[4] WHO. 2016. *Towards a Grand Convergence for Child Survival and Health: A Strategic Review of Options for the Future Building on Lessons Learnt from IMNCI*. Geneva: WHO.
[5] Gera T, Shah D, Garner P, Richardson M, Sachdev HS. 2016. Integrated management of childhood illness (IMCI) strategy for children under five. *Cochrane Database Syst Rev*. (6):CD010123. doi: 10.1002/14651858.CD010123.pub2.
[6] Gera T, Shah D, Garner P, Richardson M, Sachdev HS. 2016. Integrated management of childhood illness (IMCI) strategy for children under five. *Cochrane Database Syst Rev*. (6):CD010123. doi: 10.1002/14651858.CD010123.pub2.
[7] Dalglish SL, George A, Shearer JC, Bennett S. 2015. Epistemic communities in global health and the development of child survival policy: a case study of iCCM. *Health Policy Plan*. 30 Suppl 2:ii12-ii25. doi: 10.1093/heapol/czv043.
[8] WHO. 2017. *WHO Recommendations on Newborn Health*. Geneva: WHO.
[9] WHO. 2017. *WHO Recommendations on Child Health*. Geneva: WHO.
[10] WHO. 2017. *WHO Recommendations on Adolescent Health*. Geneva: WHO.
[11] WHO. 2017. *WHO Recommendations on Maternal Health*. Geneva: WHO.

which level this care should be provided or whether provision of care can be delegated to community health workers (CHWs). Many countries have adopted and are implementing the IMNCI strategy, integrating newborn care elements to varying degrees. While it is assumed that countries generally adopt the contents of the WHO sick young infant module, what the "N" translates to at the country level is not well understood. Based on studies that demonstrated the effectiveness of community-level management of severe infection in newborns,[12,13,14,15] some countries have integrated community management of possible serious bacterial infection (PSBI) as an extension of iCCM. Some countries integrated ENC, PNC, and management and care for low-birthweight (LBW) babies into their IMNCI guidelines to a varying degree. Considering that newborns increasingly account for a large share of under-5 mortality in many of the countries using the IMNCI strategy, ensuring adequate newborn content in the materials is critical, now more than ever, to minimize missed opportunities for effective newborn care.

This assessment was designed to review the newborn care content in IMNCI materials in selected Maternal and Child Survival Program (MCSP) countries, primarily focusing on ENC, PNC, management of PSBI, and care for preterm and LBW babies. The review focused on training modules and chart booklets for both facility- and community-level management of childhood illnesses (collectively referred to as "materials" in this report). The review examined in detail and analyzed the newborn content in these materials, evaluating the completeness of the relevant contents and comparing them with the current global recommendations on newborn care in primary health care units. The findings of the assessment and its recommendations aim to contribute to global discussions and guidelines to strengthen the newborn content in integrated maternal and child health materials.

Objectives of the Assessment

The objective of this assessment was to review in detail and analyze the newborn content in national IMNCI materials focusing on elements of ENC, PNC, management of PSBI, and care for LBW babies in selected MCSP countries.

Research Questions

Do the IMNCI materials (training modules, chart booklet, and implementation guidelines) for facility- and community-level management of childhood illnesses include newborn care content focusing on ENC, predischarge PNC, home-based PNC, management of PSBI, and care for LBW babies?

- What specific elements of ENC are included in the materials?
- What specific elements of predischarge PNC (including home-based) for newborns are included in the materials?
- What specific contents related to the identification and management of PSBI are included in the materials?
- What are the contents related to care and management of LBW babies?
- Are referral criteria clearly indicated where appropriate? What are the referral criteria? Are aspects of care pre-referral and during referral included?

[12] Bang AT, Bang RA, Reddy HM. 2005. Home-based neonatal care: summary and applications of the field trial in rural Gadchiroli, India (1993 to 2003). *J Perinatol*. 25 Suppl 1:S108–22.
[13] Baqui AH, El-Arifeen S, Darmstadt GL, et al. 2008. Effect of community-based newborn-care intervention package implemented through two service-delivery strategies in Sylhet district, Bangladesh: a cluster-randomized controlled trial. *Lancet*. 371(9628):1936–44. doi: 10.1016/S0140-6736(08)60835-1.
[14] Bang AT, Bang RA, Baitule SB, Reddy MH, Deshmukh MD. 1999. Effect of home-based neonatal care and management of sepsis on neonatal mortality: field trial in rural India. *Lancet*. 354(9194):1955–61.
[15] Bhutta ZA, Memon ZA, Soofi S, Salat MS, Cousens S, Martines J. 2008. Implementing community-based perinatal care: results from a pilot study in rural Pakistan. *Bull World Health Organ*. 86(6):452–9.

- Are the specific contents complete and accurate? Do the specific contents meet the WHO and global standards for newborn care?

Description of WHO and UNICEF IMNCI and iCCM Materials

IMNCI Standard Materials

The standard IMCI training package developed by WHO and UNICEF in 1997[16] that addresses the first component of the IMNCI strategy contains a chart booklet along with the following 10 modules:

- Module 1: Assess and classify the sick child age 2 months up to 5 years
- Module 2: Identify treatment
- Module 3: Treat the child
- Module 4: Counsel the mother
- Module 5: Management of the sick young infant age 1 week up to 2 months (updated in 2003 to 0–2 months of age)
- Module 6: Follow-up
- Module 7: Facilitator guide for outpatient clinical practice
- Module 8: Facilitator guide for modules
- Module 9: Guide for clinical practice in the inpatient ward
- Module 10: Course director's guide

The modules are mostly used as reference for training, while the chart booklet is used as the primary job aid by providers (chart booklet was last revised in 2014[17]). The standard materials form the basis to which countries should adapt depending on their prevailing contexts.

The most relevant of the modules for the current assessment, Module 5: Management of sick young infant age 0–2 months, includes step-by-step instructions on assessing, classifying, and managing common signs and symptoms linked with poor outcomes in very young infants in outpatient settings. The module covers classification and management for PSBI, jaundice, diarrhea, HIV infection, feeding problem, low weight for age, and immunization status, including when to refer, pre-referral care, and care during referral. It also outlines how to counsel mothers on home care for local infections, breastfeeding (including a detailed account of educating them on positioning and attachment, how to express breast milk, and how to feed by cup), and home care (focusing on exclusive breastfeeding, keeping the baby warm, and when to return to the facility immediately). There is also instruction and guidance on when to return for follow-up and what to do during the follow-up visit based on the presenting problem/classification.

The standard WHO/UNICEF IMNCI materials, however, were designed for the outpatient setting and do not include newborn content on ENC, PNC, and inpatient care for preterm and LBW babies.

Global iCCM Standard Materials

The standard WHO/UNICEF iCCM materials are modeled on the IMNCI modules[18] for CHWs to manage illness in children 2–59 months old. *Integrated Management of Childhood Illness: Caring for Newborns and Children in*

[16] WHO, UNICEF. 1997. IMCI in-service training: Set of training modules, facilitator's guides and course director's guides. WHO website. https://www.who.int/maternal_child_adolescent/documents/9241595650/en/.
[17] WHO. 2014. *Integrated Management of Childhood Illness Chart Booklet*. Geneva: WHO.
[18] WHO. 2011. *Caring for the Sick Child in the Community: Participant's Manual*. Geneva: WHO.

the Community[19] is the "gold standard" training package for iCCM. Designed with simplicity in mind, the package is intended for use by CHWs who have completed a basic education until at least sixth grade. Developed in 2011, the package is composed of three sets of materials for the training and support of CHWs, each with its own facilitator notes, participant manual, counseling card, and/or photo booklet:

- Caring for the newborn at home
- Caring for the child's healthy growth and development
- Caring for the sick child in the community (2 months–5 years)

In addition to the three packages, a handbook for program managers and planners was developed in 2015 to provide guidance in the selection of these materials.

For the purpose of this assessment, MCSP considered the training package as part of iCCM materials because its content is the most relevant. This package provides guidance for CHWs to counsel women during five home visits: two during pregnancy; one on the day of birth, if the mother gave birth at home, or soon after she has returned home from the health facility; and one each on days 3 and 7 after birth. Additional visits are proposed for LBW babies (less than 2.5 kg) on day 2 and 14.

- **Pregnancy home visits:** In addition to encouraging antenatal care, supporting birth preparedness, and promoting facility delivery, there is clear guidance on encouraging families to follow optimal newborn care practices immediately after birth.
- **Postnatal home visits:** Postnatal home visits are advised on days 1, 3, and 7 to weigh the baby, assess for signs of illness, support the mother with early and exclusive breastfeeding and keeping the baby warm, and counsel the mother on optimal care beyond the first week of life. For all postnatal visits, there are instructions for CHWs to assess the baby for signs of illness (inability to feed, convulsion, fast breathing, chest in-drawing, high or low temperature, jaundice, lethargy and local infection, low weight) and to refer those with one or more danger signs.

Current Global Guidance on Newborn Care Content

Based on various research and best practices, the global guidance on newborn care content at the primary health care level (facility and community) has gradually expanded.[20, 21, 22,23, 24, 25, 26, 27] Current global recommendations on newborn care content for primary health care include promotion of health and prevention of illness in newborns and young infants (including care immediately after birth, PNC, newborn immunization), and management of sick newborns and young infants (including resuscitation, management of newborn sepsis, care of preterm and LBW newborn, care for newborns with an HIV-infected mother, and management of other severe conditions).

In this content analysis of materials from seven MCSP countries, the team attempted to compare the newborn care content in the materials with the "expanded" current global recommendations mentioned above.

[19] WHO. 2011. *Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community*. Geneva: WHO.
[20] WHO. 2012. *Recommendations for Management of Common Childhood Conditions*. Geneva: WHO.
[21] WHO. 2012. *Guidelines on Basic Newborn Resuscitation*. Geneva: WHO.
[22] WHO. 2013. *WHO Recommendations on Postnatal Care of the Mother and Newborn*. Geneva: WHO.
[23] Partnership for Maternal, Newborn, and Child Health. 2006. *Opportunities for African Newborns: Practical Data, Policy and Programmatic Support for Newborn Care in Africa*. Geneva: WHO.
[24] WHO. 2015. *Managing Possible Serious Bacterial Infection in Young Infants When Referral Is Not Feasible*. Geneva: WHO.
[25] WHO, UNICEF. 2017. *WHO/UNICEF Joint Statement: Managing Possible Serious Bacterial Infection in Young Infants 0–59 Days Old When Referral Is Not Feasible*. Geneva: WHO.
[26] WHO. 2015. *WHO Recommendations on Interventions to Improve Preterm Birth Outcomes*. Geneva: WHO.
[27] WHO. 2017. *WHO Recommendations on Newborn Health*. Geneva: WHO.

Methodology

The assessment was based on content analysis of IMNCI materials from selected MCSP countries. Countries were selected based on a set of selection criteria (see Box 1). Attempts were made to include as many countries as possible to ensure that the findings and recommendations are based on a relatively good sample. The eight countries initially selected for the assessment based on the criteria were Bangladesh, Democratic Republic of the Congo (DRC), Ethiopia, Mozambique, Nepal, Nigeria, Rwanda, and Zambia. Bangladesh was excluded from the assessment at a later stage, as the country has a separate newborn health program outside of the IMCI platform.

Box 1. Country selection criteria

- MCSP priority country where there is a national-/subnational-endorsed IMNCI program
- MCSP is currently supporting the implementation of newborn and/or child health intervention(s) and has a working relationship with the ministry of health or its equivalent at national or subnational level
- MCSP has a newborn or child health focal person (advisor, specialist, or related position) who understands and supports the implementation of IMNCI and iCCM interventions
- IMNCI materials are available in English or, if in another language, MCSP in-country staff can allocate time to carry out the detailed newborn content analysis of the materials

Scope

This was an assessment of newborn care content focusing on ENC, predischarge counseling, care for small babies, PNC in the first week of life, management of PSBI, and care during referral—all based on the current global recommendations for newborn care. The assessment was primarily based on a desk review of IMNCI and iCCM training materials and job aids. The review also looked at the overall organization of the training as it relates to newborn content.

Desk Review

Review and analysis of documents focused on IMNCI and iCCM training materials and job aids in the seven MCSP countries. A self-administered content assessment questionnaire was developed and distributed to newborn and child health advisors in the seven MCSP countries to collect newborn care content from the training materials and job aids (see Annex 1 for questionnaire). The materials reviewed were those endorsed by the national and/or subnational government in each country.

Materials used for review included the IMNCI and iCCM sick young infant facilitator and participant modules and the IMNCI and iCCM chart booklets. IMNCI materials from DRC, Ethiopia, Mozambique, Nigeria, Rwanda, and Zambia, and iCCM materials from Ethiopia, Mozambique, Nepal, and Nigeria were reviewed (see Annex 2 for list of documents reviewed). In addition, other policy and implementation documents were reviewed to provide context for the training materials (see Annex 3 for list of materials). Country-based MCSP technical advisors completed the self-administered content assessment questionnaire after conducting an initial newborn content review of the training materials and job aids. They then shared the training materials and job aids along with the completed questionnaire with the assessment lead. The assessment lead conducted further content analysis of the materials to answer the specific research questions. Country material contents were compared with the standard WHO/UNICEF IMNCI and iCCM materials and current global standards for newborn care. Materials reviewed were in English, French, and Portuguese.

Key Informant Interviews

In-depth key informant interviews (KIIs) were conducted with national program managers and experts from the Federal Ministry of Health (FMOH) in Ethiopia. Ethiopia was purposively selected for the KII, as the assessment lead was based in Ethiopia. The main purpose of the KII was to help understand how the newborn content in the training materials and job aids is taught and promoted in practice.

Face-to-face interviews were conducted with four informants from the FMOH in Ethiopia: the child health team lead, a child health expert, and two technical assistants seconded to the child health team by nongovernmental organizations. Interviews were conducted in Amharic, and transcripts were summarized in English.

Preliminary Findings Review and Validation Workshop

Findings on the newborn content in IMNCI and iCCM materials and job aids from the seven MCSP countries were summarized and presented to child and newborn health experts from the US Agency for International Development (USAID) and MCSP based in Washington, DC, during a 1-day workshop (see Annex 4 for list of participants). Participants reviewed and provided input to the preliminary findings and their interpretations. The team of experts also conducted a quick review of the training materials and job aids by validating the completed questionnaires.

Limitations

The assessment methodology was limited to a desk review of newborn content training materials and job aids. It was not supported by in-depth discussions and observation of how the content is implemented in the seven MCSP countries. As such, it will be difficult to reach a firm conclusion about the adequacy and quality of the newborn content. The attempt to assess the context in which the IMNCI and iCCM programs are implemented in each country was primarily based on document review, which may not reflect the on-the-ground reality. Due to language barriers, the details of some content may have been missed in non-English materials. Furthermore, the findings from the seven countries are in no way representative of the newborn content in IMNCI and iCCM materials in all USAID priority countries. However, the findings provide a glimpse of how countries have adapted IMNCI and iCCM content to accommodate newborn care and can be used as a starting point for further work in the area.

Findings

Overview of Newborn Care Content in IMNCI and iCCM Materials

A detailed review of the newborn content in the WHO/UNICEF standard IMNCI and iCCM materials (see Box 2); IMNCI materials from DRC, Ethiopia, Mozambique, Nigeria, Rwanda, and Zambia; and iCCM materials from Ethiopia, Mozambique, Nigeria, and Nepal was carried out. The specific newborn care contents assessed include elements related to ENC, predischarge PNC, care for preterm and LBW babies, PNC in the first week of life, care for sick young infants, and pre-referral treatment and care during referral.

Box 2. Overview of newborn care content in WHO/UNICEF standard IMNCI and iCCM materials

WHO/UNICEF IMNCI standard materials focus on:

- Management of sick young infants 0–2 months old in outpatient settings
- Step-by-step instructions for the assessment, classification, and management of sick young infants focusing on PSBI, local bacterial infection, jaundice, diarrhea and dehydration, HIV infection, feeding problem, and low weight for age
- Instructions on when to refer, pre-referral treatment, and care during referral

WHO/UNICEF iCCM standard materials include a specific package on caring for the newborn at home, which provides guidance for CHWs on early postnatal home visits for newborns, identification and care for LBW babies, and identification of danger signs in newborns and referral to a health facility.

Review of country materials revealed variations in terms of how newborn content is integrated in IMNCI materials. These include:

- Ethiopia integrated significant newborn content in IMNCI materials developed for outpatient settings. The ENC and care for small babies content is intended for babies who are delivered at or receive care at a facility on the day of birth.
- Mozambique developed three separate chart booklets: 0–7 days, 7 days–2 months, and 2–59 months. The 0–7 days chart booklet is for inpatient and outpatient settings.
- Rwanda separated the guidance for 0–7 days and 7 days–2 months within the sick young infant section of the IMNCI chart booklet.
- Zambia developed a separate ENC chart booklet for use in inpatient settings, detailing ENC and care for small and preterm babies.

The sections below present detailed findings of the assessment, comparing them with the current global recommendations on newborn care.

Specific Newborn Care Content in IMNCI and iCCM Materials

ENC Content

Table 3 summarizes the findings related to ENC content. The IMNCI materials from DRC, Ethiopia, Mozambique, and Zambia have detailed, step-by-step instructions and guidance on current key global recommendations for ENC. There are detailed, step-by-step instructions on resuscitating a baby who is not breathing or crying at birth: how to assess, what to use, how to resuscitate, when to stop, when to refer and how, and how to monitor afterward. For cord care, use of chlorhexidine gel is indicated in the materials from Ethiopia and Zambia. Although material from Nigeria does not include ENC content, there is instruction to teach the mother to apply chlorhexidine gel to the umbilicus for children under 7 days old. The DRC, Ethiopia, and Zambia materials have instructions on maintaining skin-to-skin contact for at least 60 minutes immediately after birth and initiating breastfeeding within 1 hour.

In keeping with WHO/UNICEF standard materials (see Box 3), the materials from all six countries have detailed instructions on assessing breastfeeding and supporting the mother to breastfeed properly based on observation findings for all babies who do not need urgent referral and are not exposed to HIV.

Box 3. Essential newborn care content in WHO/UNICEF standard IMNCI materials

Essential newborn care **is not** part of the current WHO/UNICEF IMNCI standard materials. There is, however:

- Instruction for counseling on initiating breastfeeding within the first hour of birth under the general 2–59 months' "feeding counseling" section of the IMNCI chart booklet
- For all sick young infants who do not need urgent referral, detailed instructions to assess breastfeeding, observe while baby is being breastfed, and teach the mother about correct breastfeeding based on observation findings, including expressing breast milk and feeding by cup if necessary, in the "assess feeding problem and low weight for age" section

The Zambia ENC chart booklet includes many details related to ENC content. It has detailed, step-by-step instructions for the elements of routine care for all newborns immediately after birth and until discharge, including a detailed instruction section on maintaining warmth (referred to as the "warm chain").

The ENC content in the IMNCI materials from DRC, Ethiopia, Mozambique, and Zambia is intended for use in an inpatient setting (maternity wards) or outpatient setting, in case a newborn is brought to the facility immediately after birth.

While the IMNCI materials from Nigeria and Rwanda are used in outpatient settings and have not integrated essential newborn content, instructions on cord care, breastfeeding assessment, and support are included in the materials.

Table 3. Elements of essential newborn care content in the Integrated Management of Newborn and Childhood Illness (IMNCI) and integrated community case management (iCCM) materials reviewed compared with current global recommendations

Current Global Recommendations *Essential Newborn Care*	IMNCI							iCCM				
	World Health Organization/ UNICEF standard materials	*Democratic Republic of the Congo*	*Ethiopia*	*Mozambique*	*Nigeria*	*Rwanda*	*Zambia*	*World Health Organization/ UNICEF standard materials*	*Ethiopia*	*Mozambique*	*Nepal*	*Nigeria*
There are specific instructions on assessing breathing or crying.												
There are specific instructions on maintaining skin-to-skin contact for a minimum of 60 minutes at birth with the mother.												
There are specific instructions on drying the baby at birth.												
There are specific instructions on resuscitation using bag and mask if baby is not breathing or gasping and does not respond to stimulation.												
There are specific instructions on cord care.												
There are specific instructions for delayed cord clamping.												
There are specific instructions on initiating breastfeeding within 1 hour of birth.												
There are specific instructions on observing breastfeeding and supporting the mother to do so properly.												
There are specific instructions on eye care.												
There are specific instructions on vitamin K administration.												
There are specific instructions on weighing the baby.												

Key: Pale blue = Yes, in a specific essential newborn care section. Gray = Yes, as a general section. White = No.

Similar to the WHO/UNICEF materials (see Box 4), iCCM materials from Nigeria and Mozambique do not have ENC content, and CHWs are not expected to attend to or be present at the time of birth. However, there are instructions on some elements of ENC integrated as part of early postnatal contact. The Nigeria materials have integrated instructions and guidance on chlorhexidine cord care. Mozambique materials have instructions on assessing breathing/crying, cord care, breastfeeding support, and eye care.

Box 4. ENC content in WHO/UNICEF standard iCCM materials

The WHO/UNICEF iCCM package includes a booklet on caring for the newborn at home. While there are instructions for CHWs to promote and support facility delivery, the booklet does not have ENC content.

Materials from Ethiopia and Nepal have detailed, step-by-step instructions and guidance for most of the ENC elements listed in Table 3.

Care for Preterm and LBW (Small) Babies

The IMNCI materials from Ethiopia, Mozambique, Rwanda, and Zambia contain instructions and guidance on the elements of care for preterm and LBW babies listed in Table 4. All four country IMNCI materials have instructions on the cutoffs for determining preterm/low birthweight and criteria for referral. There is also step-by-step guidance on kangaroo mother care (KMC) and additional care needed for small babies. In terms of supporting breastfeeding, there are detailed instructions on positioning and attachment; expressing breast milk, if the baby is not able to suck; and cup feeding.

The DRC materials have instructions to refer all LBW (< 2,500 g) babies (identified during outpatient visits) to the next level of facility.

The Zambia chart booklet is unique in terms of its specific, detailed instructions on KMC. It includes guidance on educating and supporting the mother until she is confident enough to practice KMC on her own and provides information on the practice of intermittent KMC as a viable alternative in circumstances that do not permit the practice of continuous KMC. It also delineates the role of the father or other close family member in providing KMC and details the need for proper hygiene and handwashing. In addition, the chart booklet emphasizes the need to keep the mother and baby at the facility until the mother is confident enough to practice KMC by herself and the baby is feeding well, gaining weight, and has a stable body temperature. The booklet also stresses the need to reassess the baby frequently and the importance of providing special support to mothers with twins.

Counseling/advice on home care specific to preterm and LBW babies' care includes information on keeping the baby warm at all times, including KMC; counseling on optimal breastfeeding; prevention of infection; and when an immediate return to the facility is necessary. Except for the Zambia IMNCI chart booklet—which has instructions on the need for good hygiene, including handwashing after using a toilet, before feeding the baby, and when applying chlorhexidine on the cord—the Ethiopia, Mozambique, and Rwanda materials do not have specific instructions on counseling the mother on infection prevention.

The Ethiopia and Mozambique IMNCI materials include instruction to weigh babies brought to the facility within 7 days of birth and to consider the weight as proxy to classifying the birthweight if the actual weight at birth is not known.

In keeping with the WHO/UNICEF standard IMNCI materials (see Box 5), the materials from all six countries include a section to assess, classify, and manage feeding problems and low birthweight in young infants in an outpatient setting. The instruction is to manage any feeding problem/underweight at the facility (including counseling the mother on feeding and home care) and follow up for feeding problems in 2 days, and low birthweight for age in 14 days. There is no guidance on cutoffs for cases that might need referral for management at a higher facility.

Box 5. WHO/UNICEF IMNCI standard materials content related to care for preterm and LBW babies

Care for preterm and LBW babies **is not** part of the WHO/UNICEF standard IMNCI materials, as the materials are designed for the outpatient setting.

- For all babies who do not require urgent referral, the materials have instructions to determine weight for age.
- For low-weight-for-age young infants, there are instructions to advise mothers on optimal breastfeeding, keeping warm, home care, when to return to facility immediately, and follow-up in 14 days.
- There are no instructions on referral based on a cutoff weight.

Table 4. Elements of care for preterm and low-birthweight (LBW) babies in the Integrated Management of Newborn and Childhood Illness (IMNCI) and integrated community case management (iCCM) materials reviewed compared with current global recommendations

Current Global Recommendations *Care for preterm and LBW babies*	IMNCI							iCCM				
	World Health Organization/ UNICEF standard materials	*Democratic Republic of the Congo*	*Ethiopia*	*Mozambique*	*Nigeria*	*Rwanda*	*Zambia*	*World Health Organization/ UNICEF standard materials*	*Ethiopia*	*Mozambique*	*Nepal*	*Nigeria*
There are specific instructions on assessing and classifying for birthweight.												
There are specific instructions on management of preterm/LBW babies based on classification.												
There are specific instructions on prolonged skin-to-skin contact.												
There are specific instructions on feeding.												
There are clear criteria for referral of preterm/LBW babies based on classification.												

Key: Pale blue = Yes, in a specific preterm/LBW section. Gray = Yes, as general guidance. White = No.

The WHO/UNICEF *Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community* booklet has instructions for CHWs to assess, classify, and manage LBW babies (see Box 6). The iCCM materials from Ethiopia and Nepal include instructions on key elements of care for LBW and preterm newborns listed in Table 4. The materials contain detailed guidance on supporting breastfeeding, including how to educate on positioning and attachment, and how to express breast milk for cup feeding. However, there is no clear guidance on what "adequate" feeding for small babies entails. The materials are also not explicit about the practice of KMC.

Box 6. WHO/UNICEF iCCM standard materials content related to care for preterm and LBW babies

The WHO/UNICEF iCCM *Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community* booklet has instructions for CHWs to:

- Weigh all babies during the first postnatal home visit (in the first 24 hours of birth) irrespective of the place of delivery and classify these babies based on birthweight.
- Manage LBW babies based on classification (including skin-to-skin care and referral).
- Provide detailed instructions on home care: optimal breastfeeding, keeping the baby warm, handwashing, and early stimulation.
- Two additional home visits for babies with low birthweight: on days 2 and 14.

The Ethiopia iCCM chart booklet has clear instructions on how to counsel mothers on infection prevention, including general hygiene (handwashing at critical times, keeping clean/washing everything that comes in contact with the young infant, bathing and washing clothes, and preventing contact with sick people). The chart booklet also offers guidance on general support, optimal breastfeeding, cord care, use of insecticide-treated bed nets, avoiding smoke in the house, immunization, and immediate care seeking for any danger signs. It also has instructions for additional home visit for LBW babies on day 14.

PNC Content

Standard PNC content is not included in the WHO/UNICEF IMNCI materials (see Box 7). Table 5 summarizes assessment findings related to PNC. Instructions and guidance on various elements of PNC are included in IMNCI materials from DRC, Ethiopia, Mozambique, and Zambia to varying degrees.

The Ethiopia IMNCI chart booklet has a specific subsection with instructions on routine PNC follow-up. There are detailed instructions on what must be done during each of the visits (6–24 hours, day 3, day 7, and 6 weeks). The "6–24 hours" evaluation assumes potential contact with a newborn on the day of birth in an outpatient setting.

Box 7. PNC content in WHO/UNICEF IMNCI standard materials

The WHO/UNICEF standard IMNCI materials **do not** contain postnatal (predischarge and in the first week of life) newborn care content. However, the instructions on the following are included in the sick young infant modules:

- Checking for immunization status and provision of missed doses (unless being referred)
- Counseling and support for optimal breastfeeding
- Provision of antiretroviral prophylaxis
- Counseling on danger signs and when to return immediately and on home-based care

There are **no** instructions on counseling for use of bed nets and timing of postnatal visits.

The ENC chart booklet from Zambia has specific instructions on predischarge newborn assessment and care that include provision of immunization, as well as counseling on optimal breastfeeding, home care, timing of routine PNC (day 3, day 7, and 6 weeks), and when to return immediately. There are no instructions on what should be done during postnatal visits after discharge (this information is not included in the general IMNCI chart booklet either).

While the IMNCI materials from Mozambique do not have specific PNC sections, the "0–7 days" chart booklet (intended for use in both inpatient and outpatient settings) includes instructions on various elements of PNC, including counseling on exclusive breastfeeding, hygiene, home-based care, danger signs and when to return, and timing of postnatal visits.

The IMNCI materials from DRC, Nigeria, and Rwanda do not have specific instructions on PNC. However, instructions on various elements of PNC content listed in Table 5 are included as part of the general sick newborn assessment, counseling, and care.

Counseling on use of bed nets is included in the IMNCI materials from Ethiopia and Zambia, while timing of discharge from health facility after delivery is outlined in the materials from Mozambique and Zambia.

In terms of instructions on preventive counseling (anticipatory guidance), IMNCI materials from DRC, Ethiopia, Mozambique, and Zambia have instructions for counseling on cord care, optimal feeding, skin care, eye care, and danger signs. While there is instruction to counsel on hygiene, the specifics of what this entails is lacking. Moreover, none of the countries' IMNCI materials include instructions to counsel on safe sleep and smoke exposure.

Table 5. Elements of postnatal care content in the Integrated Management of Newborn and Childhood Illness (IMNCI) and integrated community case management (iCCM) materials reviewed compared with current global recommendations

Current Global Recommendations *Postnatal Care*	IMNCI							iCCM				
	World Health Organization/ UNICEF standard materials	*Democratic Republic of the Congo*	*Ethiopia*	*Mozambique*	*Nigeria*	*Rwanda*	*Zambia*	*World Health Organization/ UNICEF standard materials*	*Ethiopia*	*Mozambique*	*Nepal*	*Nigeria*
Predischarge postnatal care												
There are specific instructions on providing immunization before discharge.												
There are specific instructions on counseling on exclusive breastfeeding.												
There are specific instructions on counseling on cleanliness and hygiene at home.												
There are specific instruction on counseling on use of bed nets (high-malaria-burden countries).											N/A	
There are specific instruction on counseling on antiretroviral treatment/HIV (high-HIV-burden countries).												
There are specific instructions on counseling about timing of postnatal care visits before discharge.												
There are specific instructions on counseling about newborn danger signs.												
There are specific instructions on counseling the caretaker on immediate care seeking for danger signs.												

Current Global Recommendations *Postnatal Care*	IMNCI							iCCM				
	World Health Organization/ UNICEF standard materials	*Democratic Republic of the Congo*	*Ethiopia*	*Mozambique*	*Nigeria*	*Rwanda*	*Zambia*	*World Health Organization/ UNICEF standard materials*	*Ethiopia*	*Mozambique*	*Nepal*	*Nigeria*
There are specific instructions on the timing of discharge (e.g., 24 hours, 48 hours).								N/A	N/A	N/A	N/A	N/A
There is specific guidance on home-based care for newborns.												
Postnatal care in the first week of life												
There are specific instructions on the timing of postnatal visits.												
There are specific instructions on what to look for during the visits.												
There are specific instructions on what to counsel the mother/caretaker.												
There are clear criteria/specific instructions on when to refer.												
There are specific instructions on anticipatory guidance (e.g., safe sleep, smoke exposure, cord care, handwashing and hygiene, optimal feeding, skin care, eye care, danger signs).								*				

Key: Pale blue = Yes, in a specific PNC section. Gray = Yes, as general guidance. White = No.

** World Health Organization/UNICEF standard materials on caring for newborns at home do not include guidance/counseling on safe sleep or smoke exposure.*

The iCCM materials from Ethiopia, Mozambique, and Nepal include postnatal newborn content to varying degrees. Instructions related to predischarge PNC in the iCCM materials of these three countries assume potential contact between CHWs and newborns on the day of birth during/after home deliveries. Counseling during initial contact during or immediately after birth across all the three countries (predischarge counseling) includes provision of immunization, in addition to counseling on exclusive breastfeeding, cleanliness and hygiene, and newborn danger signs. Concerning postnatal home visits in the first week of life, guidance on the timing of visits included in the countries' iCCM materials is in line with the current WHO/UNCEF standard recommendations (see Box 8)—on days 1, 3, and 7. These materials also include instructions on what to look for during the visits, criteria on when to refer the baby, and counseling on preventive hygiene, preventing smoke exposure, maintaining good sleeping area, cord care, skin care, eye care, optimal feeding, and danger signs.

Box 8. PNC content in WHO/UNICEF iCCM standard materials

The WHO/UNICEF iCCM *Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community* booklet has instructions for CHWs to:

- Conduct PNC home visits on days 1, 3 and 7, and provides guidance on what to look for during these visits and how to manage complications.
- Support referral when needed.
- Perform a follow-up home visit on third day for all referred newborns.
- Advise the mother on care beyond the first week of life.

The iCCM materials for community resource people[28] from Nigeria, also known as community IMCI (cIMCI), include a brief community newborn care section. This section includes instructions on postnatal home visits (at days 1, 3, and 7, and 6 weeks), such as counseling mothers on immediate and exclusive breastfeeding, keeping the baby warm, handwashing and hygiene, cord care (including application of chlorhexidine), use of insecticide-treated bed nets, timing of PNC, and newborn danger signs. There is also instruction on assessing for danger signs and immediate referral. They do not have clear guidance and instructions on what to do during each visit.

Management of Sick Young Infants with PSBI

Table 6 summarizes the findings related to management and care for sick young infants with PSBI. Management and care of sick young infants with PSBI is the most common newborn care content included in the IMNCI and iCCM materials from all seven countries included in this assessment. The IMNCI materials from DRC, Ethiopia, Mozambique, Nigeria, Rwanda, and Zambia include instructions on how to assess, classify, and manage sick young infants based on the PSBI danger signs included in the WHO/UNICEF standard materials (see Box 9). Assessment, classification, and management standards (including referral criteria and care during referral) are in line with the WHO/UNICEF IMNCI chart booklets for DRC, Ethiopia, Mozambique, Rwanda, and Zambia.

[28] A community resource person is nominated by his/her community and trained to counsel caregivers on the key household and community practices in their community, collect data for community-based information system, and be willing and available to work voluntarily.

Table 6. Elements of care for sick young infant with possible serious bacterial infection (PSBI) in the Integrated Management of Newborn and Childhood Illness (IMNCI) and integrated community case management (iCCM) in the materials reviewed compared with current global recommendations

Current Global Recommendations *Care for sick young infants with PSBI*	IMNCI							iCCM				
	World Health Organization/ UNICEF standard materials	*Democratic Republic of the Congo*	*Ethiopia*	*Mozambique*	*Nigeria*	*Rwanda*	*Zambia*	*World Health Organization/ UNICEF standard materials*	*Ethiopia*	*Mozambique*	*Nepal*	*Nigeria*
There are specific instructions on how to assess and classify fever.												
There are specific instructions on how to assess and classify fast breathing.												
There are specific instructions on how to assess and classify chest in-drawing.												
There are specific instructions on how to assess and classify feeding problems.												
There are specific instructions on how to assess and classify lethargy.												
There are specific instructions on how to assess and classify convulsion.												
There are specific instructions on how to assess and classify inflamed umbilicus.												
There are specific instructions on how to assess and classify skin pustules.												
There are specific instructions on how to assess and classify jaundice.												
There are specific instructions on how to manage fever.												

Current Global Recommendations ***Care for sick young infants with PSBI***	**IMNCI**							**iCCM**				
	World Health Organization/ UNICEF standard materials	***Democratic Republic of the Congo***	***Ethiopia***	***Mozambique***	***Nigeria***	***Rwanda***	***Zambia***	***World Health Organization/ UNICEF standard materials***	***Ethiopia***	***Mozambique***	***Nepal***	***Nigeria***
There are specific instructions on how to manage fast breathing.												
There are specific instructions on how to manage chest in-drawing.												
There are specific instructions on how to manage feeding problems.												
Thera are specific instructions on how to manage lethargy.												
There are specific instructions on how to manage convulsion.												
There are specific instructions on how to manage inflamed umbilicus.												
There are specific instructions on how to manage skin pustules.												
There are specific instructions on how to manage jaundice.												
There are clear criteria for referral of sick young infants with PSBI danger signs.												

Key: Pale blue = Yes, as specific SYI management section. Gray = Yes, during PNC home visits in the first week. White = No.*

**World Health Organization/UNICEF standard materials on caring for newborns at home have detailed instructions for community health workers to assess danger signs in all newborns during postnatal care visits in the first week of life and if/when identified to immediately refer.*

Materials from all six countries[29] consider referral as the first option for sick young infants with PSBI after administering the first dose of antibiotics and stabilizing the infant, as appropriate. Except for Mozambique, the other four countries' materials have instructions to treat the young infant at the facility with two injectable antibiotics (ampicillin and gentamycin) when referral is not possible. While the material from Ethiopia specifies that PSBI management be outpatient, there are no such instructions in the materials from the other countries. The Ethiopia material also indicates prescribing gentamycin every 48 hours for very preterm babies.

The iCCM materials from Ethiopia, Mozambique, and Nepal instruct CHWs to assess all young infants they come into contact with, to check for PSBI danger signs and, if any danger signs are identified, immediately refer the infant to a health facility. The materials from these three countries include instructions for CHWs to administer pre-referral antibiotics (injectable gentamycin and oral amoxicillin) and to teach/support mothers to keep the baby warm and continue breastfeeding on the way to the health facility. The first treatment option in the iCCM materials from all the three countries is referral after administering pre-referral treatment. However, if referral is not possible or acceptable, the materials instruct CHWs to continue treatment using injectable gentamycin once daily for 7 days with oral amoxicillin twice daily for 7 days.

In keeping with the WHO/UNICEF iCCM materials (see Box 9), the cIMCI materials from Zambia instruct CHWs to refer any sick young infant with PSBI danger signs to health facilities and to support the referral.

Box 9. WHO/UNICEF IMNCI and iCCM standard materials content related to management of sick young infants

Management of sick young infants **is** a key component of the WHO/UNICEF standard IMNCI materials. Instructions include:

- Details on assessment, classification, and management (including referral) for key PSBI danger signs (fever or low temperature, fast breathing, chest in-drawing, feeding problem, movement only when stimulated, and convulsions)
- Criteria for referral of sick young infants with PSBI, pre-referral care, and care during referral
- Continuing antibiotic treatment for at least 5 days when referral is not possible (no clear instruction whether treatment is as ambulatory or as an inpatient)

The WHO/UNICEF iCCM *Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community* booklet has instructions for CHWs to:

- Assess all newborns for PSBI danger signs during PNC home visits in the first week of life and, if identified, immediately refer.
- Encourage and support referral. Conduct home visit in 3 days to check on the newborn.

IMNCI and iCCM materials from all countries assessed include detailed instructions on how to counsel/educate the mother on home care for sick young infants, including administering drugs, increasing feeding frequency during illness, and monitoring danger signs that require immediate return to the facility.

[29] The material from Nigeria has adopted the 2015 WHO recommendations on a simplified antibiotic regimen: Refer fast breathing as single sign in those under 7 days old; if referral is not possible, treat with oral amoxicillin twice daily for 7 days. Treat fast breathing as single sign in those under 7 days old at facility with oral amoxicillin twice daily for 7 days. All other PSBI danger signs, refer; if referral is not possible, treat either oral amoxicillin twice daily with injectable gentamycin once daily for 7 days or injectable gentamycin once daily for 2 days with oral amoxicillin twice daily for 7 days.

Stabilization and Care during Referral

The WHO/UNICEF standard IMNCI materials include content related to stabilization and care during referral (see Box 10). Table 7 summarizes findings related to stabilization and care during referral. IMNCI and iCCM materials from all seven countries have content related to stabilization and care for newborns during referral. The IMNCI materials include instructions on administration of pre-referral treatment for sick young infants with PSBI, treatment to prevent low blood sugar, regulation of temperature, and regulation of hydration to stabilize the baby. The materials also include instructions on counseling the mother to keep the baby warm (skin-to-skin contact or adequate layers of clothing) and to continue breastfeeding on the way to the hospital.

Box 10. WHO/UNICEF IMNCI and iCCM standard materials content related to stabilization and care during referral

The WHO/UNICEF standard IMNCI materials include instructions and guidance on:

- Administration of pre-referral treatment for PSBI (intramuscular ampicillin and gentamycin)
- Care during referral: treat to prevent low blood sugar, advise and teach the mother to keep the baby warm
- Preparing the referral note

The WHO/UNICEF iCCM *Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community* booklet has instructions for CHWs to:

- Assist referral: Convince the mother to comply with the urgent referral, counsel/advise on care during referral (frequent feeding, keeping the baby warm), and follow-up home visit on the next day to check on compliance.
- Give referral note/slip to the mother, with sample referral slip provided in the booklet.

The iCCM materials from Ethiopia, Mozambique, and Nepal include instructions for care during referral, including administration of pre-referral antibiotics, as well as counseling the mother to continue feeding the baby (increase feeding frequency) and to keep the baby warm on the way to the health facility.

Instructions on use of referral slips are included in the materials from Ethiopia, Mozambique, Rwanda, and Zambia, and sample referral slips are available in materials from Ethiopia and Zambia.

Table 7. Elements of stabilization and care during referral in the Integrated Management of Newborn and Childhood Illness (IMNCI) and integrated community case management (iCCM) materials reviewed compared with current global recommendations

Current Global Recommendations *Pre-referral treatment and care during referral*	IMNCI							iCCM				
	World Health Organization /UNICEF standard materials	*Democratic Republic of the Congo*	*Ethiopia*	*Mozambique*	*Nigeria*	*Rwanda*	*Zambia*	*World Health Organization/ UNICEF standard materials*	*Ethiopia*	*Mozambique*	*Nepal*	*Nigeria*
There are specific instructions on stabilization of sick newborns as part of the referral process (for pre-referral treatment).												
There are specific instructions on stabilization of sick newborns as part of the referral process (for temperature regulation).												
There are specific instructions on stabilization of sick newborns as part of the referral process (for hydration).												
There are specific instructions on stabilization of sick newborns as part of the referral process (for feeding).												
There are specific instructions on counseling caretakers of newborns during referral (for thermal regulation).								**				
There are specific instructions on counseling caretakers of newborns during referral (for feeding).												
There are specific instructions on counseling caretakers of newborns during referral (importance of referral adherence).												
There are referral slips used for referral of newborns/sick young infants to higher-level care.	*											
There are counterreferral (slips from the higher facility to lower health facility) used for communicating back to the referring facility.												

Key: Pale blue = Yes. White = No.

** World Health Organization/UNICEF standard IMNCI materials provide instruction on preparation of referral notes; sample referral slips are not provided.*

*** World Health Organization/UNICEF* Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community *materials focus on assessment and care during PNC visits in the first week of life*

In Summary

IMNCI materials from DRC, Ethiopia, Mozambique, Nigeria, Rwanda, and Zambia were reviewed. Table 8 provides a summary of the newborn content in standard WHO/UNICEF materials and those of the countries assessed, with the dark green, light green, and yellow shading depicting the completeness of all elements examined for the topic area (darker green indicating more complete); white boxes indicate a lack of any of the content areas assessed for the particular theme. The content in IMNCI materials from Nigeria and Rwanda was found to align with newborn care content outlined in WHO/UNICEF standard IMNCI materials and primarily focused on management of sick young infants in outpatient settings, when to refer, and care during referral. DRC, Ethiopia, Mozambique, and Zambia systematically integrated more newborn content in line with the current global recommendations in their IMNCI materials. While DRC and Ethiopia integrated the current newborn care recommendations in their main IMNCI 0–59 months materials for outpatient settings, Mozambique and Zambia have separate newborn/young infant chart booklets for use in inpatient and/or outpatient settings. Rwanda split the sick young infant section of the IMNCI chart booklet into separate instructions for newborns 0–7 days and 1 week–2 months.

iCCM materials from Ethiopia, Nigeria, Mozambique, and Nepal were reviewed. Ethiopia, Mozambique, and Nepal integrated current recommendations in newborn care in their iCCM materials to varying degrees. Materials from Nigeria contain a community-based newborn care section, which provides general guidance on what to advise mothers on during postnatal contact (scheduled twice in the first week) and includes advising the mother to undergo facility-based PNC on days 1, 3, and 7, and at 6 weeks. The section also provides instruction on breastfeeding and thermal regulation, application of chlorhexidine to the umbilicus, handwashing, and assessment of danger signs.

Subject matter related to the provision of care in IMNCI and iCCM materials across the six countries primarily emphasized care for sick young infants with PSBI and referral care.

Table 8. Summary of newborn content in Integrated Management of Newborn and Childhood Illness (IMNCI) and integrated community case management (iCCM) materials by component and country

Newborn care components assessed	IMNCI							iCCM				
	World Health Organization/ UNICEF standard materials	*Ethiopia*	*Nigeria*	*Zambia*	*Rwanda*	*Democratic Republic of the Congo*	*Mozambique*	*World Health Organization/ UNICEF standard materials*	*Ethiopia*	*Nigeria*	*Mozambique*	*Nepal*
Essential newborn care												
Care for small babies												
Predischarge postnatal care												
Postnatal care in the first week of life												
Care for sick young infant												
Pre-referral treatment and care during referral												

Dark green, light green, and yellow = completeness of all elements examined for the topic area (darker green indicating more complete). White = no content areas assessed for the particular theme.

Overall Organization and Delivery of Trainings

Aspects related to the overall organization and delivery of training are included in the training facilitator modules, course director modules, or introductory booklet. The IMNCI materials of all countries assessed are in line with the WHO/UNICEF standards for organizing trainings (Table 9). All materials have clear instructions and guidance on availability of proper training materials; suitability of classrooms for adult teaching methodology, with close proximity of classrooms to clinical practice sites; early selection and preparation of clinical practice sites; competency of trainers and adequacy of the number of available trainers for class size; sufficient balance of knowledge and skills-based activities; and availability of supervised clinical practice sessions for the duration of the training.

The iCCM materials reviewed for the four countries were also largely in line with WHO/UNICEF standards, with some gaps in guidelines for classroom selection, post-training supervision, and post-training follow-up for providing tailored support and ensuring skills retention.

Table 9. Aspects related to organization of Integrated Management of Newborn and Childhood Illness (IMNCI) and integrated community case management (iCCM) trainings in the materials reviewed

World Health Organization/ UNICEF Standards	IMNCI							iCCM				
	World Health Organization/ UNICEF standard materials	*Democratic Republic of the Congo*	*Ethiopia*	*Mozambique*	*Nigeria*	*Rwanda*	*Zambia*	*World Health Organization/ UNICEF standard materials*	*Ethiopia*	*Mozambique*	*Nepal*	*Nigeria*
Are there specific instructions on ensuring appropriate training materials?												
Is there a chart booklet?												
Are there guidelines for classroom selection?												
Are there guidelines for required trainer-to-trainee ratio?												
Are there appropriate knowledge-based activities for teaching, such as readings, lecture, case studies, brainstorming, facilitated discussions, group activities, role-plays, and videos?												
Are there appropriate skills-based activities for teaching such, as skills demonstrations, simulated practice, skills practice, clinical simulations, case studies, structured observations, role-plays, and videos?												
Are there supervised, skills-based practical trainings at clinical sites?												
Are there post-training supportive supervision and mentoring to aid skill retention?												

Key: Pale blue = Yes. White = No.

KIIs

Interviews with key informants from Ethiopia to understand how newborn content is put into practice revealed the following:

- When the newborn content in IMNCI materials was expanded, in an effort to strengthen the content, training duration in the expanded package remained the same as that in the non-expanded package. To accommodate the additional content, facilitators had to compress some information, since additional time was not provided in trainings. As a result, discussion sessions were shortened, and facilitators did not have sufficient time to review and provide feedback on individual overnight assignments. Key informants believed this affected the quality of the training.
- Practice sessions for newborn content were often difficult during IMNCI and iCCM trainings due to a low caseload of sick young infants in outpatient facilities. Practice sessions were primarily conducted using manikins.
- Overuse and resource shortages resulted in poor video quality, which affected the quality of trainings.

Other important issues raised by the informants were:

- Frequent global-level revisions to existing child health recommendations relevant to IMNCI (for example, nutrition guidelines and immunization components) and the challenges to harmonize these with country-level IMNCI materials (chart booklet, registration books at facilities)
- Overall health system challenges reflected by weak post-training follow-up, weak and irregular supervision/mentoring, and poor training on database management

Discussion

The standard WHO/UNICEF IMNCI and iCCM materials adapted by countries were last updated in 2014 and 2011, respectively. As such, the newborn content in the standard materials is limited to evidence and best practices available at these points in time. Moreover, the materials were developed for outpatient settings, catering to children, including newborns, who are brought to outpatient facilities due to illness. As a result, newborn content on ENC, care for preterm and LBW babies, and PNC are not part of the standard WHO/UNICEF IMNCI materials. The standard iCCM package is primarily designed for use by CHWs in the management of common childhood illness among children 2–59 months old. *Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community* focuses on newborn care in the immediate postnatal period through structured home visits in the first week of life, with an additional home visit on day 14 for LBW babies.

IMNCI materials from DRC, Ethiopia, Mozambique, Nigeria, Rwanda, and Zambia, and iCCM materials from Ethiopia, Mozambique, Nepal, and Nigeria generally mirror the standard WHO/UNICEF materials. Management of sick young infants with PSBI and care during referral is the most common newborn content comprehensively addressed in the IMNCI country materials. Postnatal home visit in the first week of life is the most common newborn content comprehensively addressed in the iCCM materials.

The review clearly revealed that countries have gone beyond standard WHO/UNICEF IMNCI and iCCM materials and adapted the newborn content in their IMNCI and iCCM materials to accommodate current global recommendations on newborn care. There were variations in the specific content and in details on the newborn content across the countries—some were minimal, while others were extensive. This may be because current global recommendations are not packaged in an easily adaptable/replicable format, as in the standard IMNCI materials, for the countries to refer to.

A few of the countries assessed integrated ENC content in their IMNCI materials and extended their use in inpatient settings, either by integrating this into the main IMNCI chart booklet or augmenting the existing IMNCI materials with an additional chart booklet focused on this clinical area (separate chart booklet for 0–7 days in Mozambique and separate ENC chart booklet in Zambia). Ethiopia, on the other hand, integrated the ENC content into its main IMNCI materials for 0–59 months to ensure providers have clear guidance on care for newborns who may visit outpatient care facilities on the day of birth.

Most of the countries in this assessment integrated content related to assessment and care for LBW and preterm babies in their IMNCI materials, focusing on babies identified as such on the day of birth or in the first week of life. There is a need, however, to strengthen the content on infection prevention counseling for LBW and preterm babies who do not require referral, as the instructions currently provided are too generic. Although the standard WHO/UNICEF IMNCI chart booklet does not include care for LBW and preterm babies, it has instructions and guidance for assessing, classifying, and managing feeding problems and undernutrition in young infants. Thus, this section could be expanded to include care for LBW babies in the outpatient setting or when referral is not possible. Current sections on feeding difficulties and sick young infants with low birthweight for age lack clarity, as they do not differentiate among growth-restricted, premature, and undernourished infants. Moreover, guidelines in both the standard WHO/UNICEF and IMNCI materials from countries that advise follow-up of babies with low weight for age in 14 days must be reassessed, as the long intervisit interval may not allow provision of optimal care.

The results of the detailed content analysis highlighted a notable content gap in the IMNCI materials of several of the countries assessed for KMC. While there is mention of skin-to-skin contact and KMC, most country documents lack instruction and guidance on details related to the practice of skin-to-skin contact and KMC, and on counseling mothers. A strong link to other services is needed, either within or outside the health facility, since the existing content in IMNCI materials from most countries in this assessment is not

adequate to support mothers in the proper practice of KMC for positive outcomes. Supporting KMC practice requires more intensive efforts than what is feasible in most outpatient settings. Another critical gap observed in the content of care for LBW/preterm babies relates to counseling on infection prevention and home care. Furthermore, the general guidance on infection prevention and home care included in the IMNCI materials does not adequately cater to additional vulnerabilities that affect small babies.

Further variations in content were seen for PNC. While country materials are consistent in their instructions on the timing of the first PNC visit (within the first 24 hours), they do not specifically speak to ensuring a predischarge check at 24 hours; there are also inconsistencies in the content about subsequent visits. Given that the first 7 days are a critical period for newborn survival, it is important that country recommendations align with WHO recommendations, which advise three PNC visits within the first week.

Gaps are also seen in instruction on postnatal counseling (both routine PNC and during home visits) on important illness prevention strategies. While both the IMNCI and iCCM materials mention hygiene and cleanliness, the details of what this entails are inconsistent across different country materials. As there can be a difference in the way providers and caretakers interpret the terms "hygiene" and "cleanliness," it is important to have clear and specific guidance to maximize outcomes. In addition, most of the materials do not include safe sleep and prevention of smoke exposure in their counseling content, which are critical considerations for the context of the countries included in this assessment.

In keeping with the standard WHO/UNICEF iCCM materials and current global recommendations, referral to the health center (primary facility level) is the preferred option for the management of PSBI in young infants and preterm/LBW babies under the cutoff point. The standard IMNCI material also recommends referral to hospital as the preferred option for the management of these problems. This means sick young infants with PSBI whose first point of contact has been a CHW will be referred to the next level of health center as per the protocol; the health center provides onward referral to a hospital per protocol. This is likely an inconvenience to families (who often face various barriers in adhering to the referral) and can be a cause of delay in seeking appropriate care, inadvertently undermining the guidance for prompt referral.

The assessment also revealed that countries took additional steps to adapt their iCCM materials to include care for newborns beyond care in the early postnatal period included in WHO/UNICEF *Integrated Management of Childhood Illness: Caring for Newborns and Children in the Community*. This appears to relate to the level of education, limited length of training, and mandate of CHWs in different countries. For instance, Ethiopia and Nepal largely integrated global recommendations into their iCCM materials in line with the mandate of their CHWs, while Nigeria has not, given low literacy levels and limited mandate of community resource people.

All of the materials reviewed provide instructions and guidance on the organization and delivery of IMNCI and iCCM trainings that are in alignment with standard WHO/UNICEF guidance. However, inclusion of instructions in the facilitator's manual does not necessarily translate into implementation, as revealed by key informants from Ethiopia. While findings from Ethiopia may not reflect the experience in other countries, the integration of newborn content without increasing the duration of the training is likely to have implications for the quality of the training, confidence of health workers/volunteers, and actual care provided to sick young infants. Moreover, the gaps in the practice sessions during training (due to low caseload of sick young infants in outpatient facilities) and poor quality of visuals (videos and photo booklets) are likely to affect the quality of the training, which in turn negatively affects the care given to children. These gaps, compounded by overall health system challenges, such as weak post-training follow-up and irregular supervision, should be considered serious concerns.

Conclusion

The standard WHO/UNICEF IMNCI (last reviewed in 2014) and iCCM (developed in 2011) materials include limited content on newborn care, in contrast to current global recommendations. While WHO endorses the expanded newborn content in current global recommendations, these recommendations are not integrated into IMNCI and iCCM materials. In 2017,[30] WHO issued an updated guideline incorporating current key global recommendations on newborn care, overriding the standard IMNCI and iCCM materials.

The IMNCI and iCCM materials in the seven countries assessed largely mirror the standard IMNCI and iCCM materials from WHO/UNICEF. As such, care for sick young infants, including pre-referral care and care during referral, is the most extensively integrated newborn care content across materials from all seven countries. Moreover, countries took steps to update their materials beyond the WHO/UNICEF standard materials, further revising their materials to align with current global newborn care recommendations to best cater to the contexts of their individual countries. Given that these recommendations have not been packaged in a format that can easily be adapted/replicated by countries, there are considerable variations in the newborn content in IMNCI and iCCM materials from these countries.

The review also identified gaps in newborn care content in the WHO/UNICEF standard IMNCI and iCCM materials, as well as the materials from the seven countries. Gaps related to care for LBW and preterm babies are of particular concern, given the heightened vulnerabilities of these babies. Additionally, potential gaps in the quality of teaching/delivery at country level may undermine the overall quality of care provided.

[30] WHO. 2017. *WHO Recommendations on Newborn Health*. Geneva: WHO.

Recommendations

The IMNCI materials are rich with detailed instructions and guidance for the assessment, classification, management, and counseling of sick young infants for every encounter. In addition, the iCCM materials provide guidance for CHWs to counsel women during five home visits and recommend additional visits for LBW babies. The practicality of translating this comprehensive care guidance into the day-to-day work of a provider in a busy outpatient clinic should be considered. Any addition of content into the existing IMNCI and iCCM platforms calls for innovative strategies to simplify the processes and action to ensure its feasibility in a high-burden facility.

Recommendations for Global Partners

- Update the standard WHO/UNICEF guidelines for IMNCI (latest update 2014) and for iCCM (developed in 2011) to keep with WHO's most recent guideline related to newborn health (2017) and evidence around task shifting.
    - There is a need to fill in the missing content on care for small (LBW and preterm) babies in the standard WHO/UNICEF IMNCI materials to enable provision of appropriate care for this vulnerable group of babies in outpatient settings. Content related to assessment, classification, and management based on weight and gestational age need to be included. Moreover, instructions on home care counseling need to include specific content on caring for small babies at home, including feeding, hygiene, and keeping the baby warm, as well as how to care for twins.
    - Content related to instructions on infection prevention for providers and counseling for caretakers must be strengthened. Furthermore, the content on counseling caretakers on home care, including the additional care needed for vulnerable newborns, is too generic and must be detailed.
- Consider revising the sections on feeding difficulties and underweight in the standard WHO/UNICEF IMNCI materials: add cutoffs and guidance on who should be referred for better care, and add more frequent follow-up than the recommended 14 days for sick young infants with low weight for age.
- Conduct a review of best practices on how countries adapted and implemented their IMNCI and iCCM materials to ensure newborn content is contextually and technically sound. Global partners should consider developing a document with information on standardized packages of key elements of ENC and small and sick newborn care. This document could be provided to countries with a template of what key materials need to be included if the country considers adding these elements into the current IMNCI and iCCM chart booklets and training materials.

Recommendations for Countries

As country IMNCI and iCCM materials mirror the WHO/UNICEF standard materials, the recommendations can be used for countries as well. Additionally, countries should:

- Develop tailored intrafacility referral systems as part of the implementation guideline for IMNCI to ensure all sick newborns receive the requisite care, as the first point of contact for newborns 1 week or younger is typically either the under-5 outpatient department or the postnatal clinic, with providers in the latter often not trained in IMNCI.
- Clarify the guidance/protocol on referral of young infants with PSBI in the iCCM materials (i.e., CHW referring to health center, health center further referring to hospital). It is important to avoid delays in care for critically ill young infants due to ongoing referrals that keep with the preferred management option for sick young infants.

- For countries that currently use IMNCI and iCCM as their main newborn care platforms, upgrade the materials to incorporate the 2017 *WHO Recommendations on Newborn Health guidelines* as appropriate to the level of providers so that care providers can be trained in and have access to these guidelines, as appropriate for their level.
- Countries that use newborn care platforms other than IMNCI/iCCM and have not already adapted the 2017 *WHO Recommendations on Newborn Health* should strengthen the content to incorporate current global recommendations on newborn care, as appropriate to the level of provider.
- Develop context-specific, innovative, and hands-on strategies for provider capacity development in IMNCI and iCCM that do not take providers away from their posts for extended periods of time. While countries generally adapted the standard training courses in IMNCI and iCCM, it is also important to devise contextualized capacity development strategies, including in settings where providers must often pivot between routine service delivery and "crisis mode." These could include improved capacity development approaches, such as blended learning; low-dose, high-frequency training; eLearning; and attachments to high-volume sites to ensure competency-based training is provided in a manner that allows for the "expanded package" to be appropriately presented, learned, and mastered.

Annexes

Annex 1. Data Extraction Tools

Assessment of Newborn Care Content in Integrated Management of Newborn and Childhood Illness and Integrated Community Case Management Materials in Maternal and Child Survival Program Countries

Purpose: The objective of this assessment is to conduct a detailed review and analysis of the newborn content in national Integrated Management of Newborn and Child Illness (IMNCI) and integrated community case management (iCCM) materials focusing on essential newborn care, postnatal care, management of possible serious bacterial infection (PSBI), and care for low-birthweight babies in selected Maternal and Child Survival Program countries. The materials to be reviewed include but will not be limited to training modules (facilitator's and participant's manuals), implementation guidelines, and chart booklets for facility- and community-level management of childhood illness. The findings of the assessment and its recommendations will contribute to the global discussion and guidelines to strengthen newborn content in integrated maternal and child health materials.

Brief guidance: Below, you will find a short questionnaire developed to assess the newborn content in the national IMNCI and iCCM materials in your country. As inconsistencies in the content in trainers' and participants' modules and the chart booklet were seen in some countries, it is important to review all three materials and any other additional materials that may be available in the country separately. To complete the questionnaire:

- Review the national IMNCI and iCCM materials (training module [both facilitator and participant guides], chart booklet, others) used for management of childhood illness at facility and community levels.
- Provide response to the questions below based on your review of the materials. Complete one questionnaire for each of the materials you have.
- Use the remarks section at the end of the table to provide any explanation, background, and/or additional information as necessary.
- Depending on how the country teams are organized, this questionnaire may need to be jointly completed by the child and newborn health advisors.

As appropriate, please engage ministry and other stakeholders to complete the questionnaire.

Finally, please share copies of the IMNCI and iCCM materials and guidelines to which you referred to complete this questionnaire for further content analysis and comparison across the different countries.

Please send the completed questionnaire to XXXXXXXX. Upload the IMNCI/iCCM materials XXXXX.

Data extraction tool for newborn content assessment of IMNCI and iCCM materials

Introduction	
Name of country:	
Name of person/s completing the questionnaire:	
Position of the person/s completing the questionnaire:	
Email address of the person/s completing the questionnaire:	
Full title of the material being assessed:	
Content analysis: essential newborn care (choose your response from the drop-down menu on the right-hand column)	
a) Are there specific instructions on assessing breathing or crying?	Choose an item.
b) Are there specific instructions on skin-to-skin contact for a minimum of 60 seconds at birth with the mother?	Choose an item.
c) Are there specific instructions on drying the baby at birth?	Choose an item.
d) Are there specific instructions on resuscitation using bag and mask if baby is not breathing or gasping and does not respond to stimulation?	Choose an item.
e) Are there specific instructions on cord care?	Choose an item.
f) Are there specific instructions for delayed cord clamping?	Choose an item.
g) Are there specific instructions on initiating breastfeeding within 1 hour of birth?	Choose an item.
h) Are there specific instructions on observing breastfeeding and supporting the mother to do so properly?	Choose an item.
i) Are there specific instructions on eye care?	Choose an item.
j) Are there specific instructions on vitamin K administration?	Choose an item.
k) Are there specific instructions on weighing the baby?	Choose an item.
Content analysis: predischarge postnatal care (choose your response from the drop-down menu on the right-hand column)	
a) Are there specific instructions on providing immunization before discharge?	Choose an item.
b) Are there specific instructions on counseling on exclusive breastfeeding?	Choose an item.
c) Are there specific instructions on counseling on cleanliness and hygiene at home?	Choose an item.
d) Are there specific instruction on counseling on use of bed nets (high-malaria-burden countries)?	Choose an item.
e) Are there specific instruction on counseling on antiretroviral treatment/HIV (high-HIV-burden countries)?	Choose an item.
f) Are there specific instructions on counseling on timing of postnatal care visits before discharge?	Choose an item.
g) Are there specific instructions on counseling about newborn danger signs?	Choose an item.
h) Are there specific instructions on counseling the caretaker on immediate care seeking for danger signs?	Choose an item.
i) Are there specific instructions on the timing of discharge (e.g., 24 hours, 48 hours)?	Choose an item.

j) Is there specific guidance on home-based care for newborns?	Choose an item.
Content analysis: care for small babies (low birthweight/preterm)	
a) Are there specific instructions on assessing and classifying for birthweight?	Choose an item.
b) Are there specific instructions on management of small babies based on classification?	Choose an item.
c) Are there specific instructions on prolonged skin-to-skin contact?	Choose an item.
d) Are there specific instructions on feeding?	Choose an item.
e) Are there clear criteria for referral of small babies based on classification?	Choose an item.
Content analysis: postnatal care for newborns in the first week of life (community case management/community health workers)	
a) Are there specific instructions on the timing of postnatal home visits?	Choose an item.
b) Are there specific instructions on what to look for during the home visits?	Choose an item.
c) Are there specific instructions on what to counsel the mother/caretaker?	Choose an item.
d) Are there clear criteria/specific instructions on when to refer?	Choose an item.
f) Are there specific instructions on anticipatory guidance (e.g., safe sleep, smoke exposure, cord care, handwashing and hygiene)?	Choose an item.
Content analysis: sick young infants (birth–2 months old)	
a) Are there specific instructions on how to assess and classify fever?	Choose an item.
b) Are there specific instructions on how to assess and classify fast breathing?	Choose an item.
c) Are there specific instructions on how to assess and classify chest in-drawing?	Choose an item.
d) Are there specific instructions on how to assess and classify feeding problems?	Choose an item.
e) Are there specific instructions on how to assess and classify lethargy?	Choose an item.
f) Are there specific instructions on how to assess and classify convulsion?	Choose an item.
g) Are there specific instructions on how to assess and classify inflamed umbilicus?	Choose an item.
h) Are there specific instructions on how to assess and classify skin pustules?	Choose an item.
i) Are there specific instructions on how to assess and classify jaundice?	Choose an item.
j) Are there specific instructions on how to assess and classify other danger signs? **If yes, please specify which additional danger signs are included:**	Choose an item.
k) Are there specific instructions on how to manage fever?	Choose an item.
l) Are there specific instructions on how to manage fast breathing?	Choose an item.
m) Are there specific instructions on how to manage chest in-drawing?	Choose an item.
n) Are there specific instructions on how to manage feeding problems?	Choose an item.

o) Are there specific instructions on how to manage lethargy?	Choose an item.
p) Are there specific instructions on how to manage convulsion?	Choose an item.
q) Are there specific instructions on how to manage inflamed umbilicus?	Choose an item.
r) Are there specific instructions on how to manage skin pustules?	Choose an item.
s) Are there specific instructions on how to manage jaundice?	Choose an item.
t) Are there clear criteria for referral of sick young infants with possible serious bacterial infection danger signs?	Choose an item.
u) Are there specific instructions on provision of pre-referral treatment for sick young infants?	Choose an item.
Pre-referral and care during referral	
a) Are there specific instructions on stabilization of sick newborns as part of the referral process (for pre-referral treatment)?	Choose an item.
b) Are there specific instructions on stabilization of sick newborns as part of the referral process (for temperature regulation)?	Choose an item.
c) Are there specific instructions on stabilization of sick newborns as part of the referral process (for hydration)?	Choose an item.
d) Are there specific instructions on stabilization of sick newborns as part of the referral process (for feeding)?	Choose an item.
e) Are there specific instructions on counseling caretakers of newborns during referral (for thermal regulation)?	Choose an item.
f) Are there specific instructions on counseling caretakers of newborns during referral (for feeding)?	Choose an item.
g) Are there specific instructions on counseling caretakers of newborns during referral (importance of referral adherence)?	Choose an item.
h) Are referral slips used for referral of newborns/sick young infants with possible serious bacterial infection to higher-level care? **If yes, please attach a copy of the referral form.**	Choose an item.
i) Are counterreferral (slips from the higher facility to lower health facility) used for communicating back to the referring facility? **If yes, please attach a copy of the counterreferral form.**	Choose an item.
j) Are referral slips used for referral of small/low-birthweight babies that need referral for higher-level care? **If yes, please attach a copy of the referral form.**	Choose an item.
k) Are counterreferral (slips from the higher facility to lower health facility) used for communicating back to the referring facility? **If yes, please attach a copy of the counterreferral form.**	Choose an item.
Overall organization and delivery of the trainings	
a) Are there specific instructions on ensuring appropriate training materials are available?	Choose an item.
b) Is there a trainer's/facilitator's guide?	Choose an item.
c) Is there a participant's manual?	Choose an item.
d) Is there a chart booklet?	Choose an item.
e) Are there guidelines for classroom selection?	Choose an item.
f) Are there guidelines for required trainer-to-trainee ratio?	Choose an item.

a) Are there appropriate knowledge-based activities for teaching, such as readings, lectures, case studies, brainstorming, facilitated discussions, group activities, role-plays, and videos?	Choose an item.
b) Are there appropriate skills-based activities for teaching, such as skills demonstrations, simulated practice, skills practice, clinical simulations, case studies, structured observations, role-plays, and videos?	Choose an item.
g) Are there supervised, skills-based practical trainings at clinical sites?	Choose an item.
h) Are there post-training supportive supervision and mentoring to aid skill retention?	Choose an item.

Remarks:

Please provide any additional context or details related to how newborn health content has been integrated into your country's IMNCI and/or iCCM materials.

Annex 2. List of Documents Reviewed

Integrated Management of Newborn and Childhood Illness

Ethiopia	IMNCI: Management of Sick Young Infant aged up to 2 months, September 2015
	IMNCI: Introduction
	IMNCI Chart Booklet, Sept 2015
Mozambique	IMCI: Newborn (0–7 days) Chart Booklet (Portuguese), 2018
	IMCI: Newborn (0–7 days) Trainer's Manual (Portuguese), 2018
	IMCI: Newborn (0–7 days) Participant's Manual (Portuguese), 2018
Nigeria	IMCI: Chart Booklet, October 2017
Rwanda	IMCI: Chart Booklet (French), March 2016
Zambia	Essential Newborn Care Chart Booklet, 2017
	IMNCI: Chart Booklet, July 2013
	IMCI: Abridged Course for Health Workers – Management of Every Young Infant Age up to 2 months, 2016
DRC	IMCI: Chart Booklet (French)
	IMCI: Training Module (French)

Integrated Community Case Management

Ethiopia	iCCM: Chart Booklet
	CBNC: Facilitator Guide
Mozambique	Childhood iCCM for Community Health Workers: Participant's Manual (Portuguese), 2015
Nigeria	iCCM: Community Health Worker Chart Booklet
	iCCM: Community Health Worker Manual
	iCCM: Community Health Worker Facilitator Guide
	cIMCI: Promotion of Key Household and Community Practices for MNCH: Training Manual for Community Resource Persons
Nepal	Community-Based iCCM Chart Booklet

Annex 3. Additional Materials Reviewed

Nigeria	Promotion of Key Household and Community Practices for Maternal, Newborn, and Child Health. Manual for Trainers of Community Resource Persons and Training Manual for Community Resource Persons. Ministry of Health.
Rwanda	Rwanda National Postnatal Care Guideline for Mother and Newborn, September 2015. Ministry of Health.
	Rwanda Essential Newborn Care Reference Manual, December 2015. Ministry of Health.
Zambia	National Maternal and Neonatal Services Referral Guidelines, 2018. Ministry of Health.

Annex 4. List of Participants in Attendance at the Workshop to Validate Preliminary Findings

Maternal and Child Survival Program

Stella Abwao
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Patricia Jodrey
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Pavani Ram