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Local and Global Guidance for Improved Delivery of Routine Services for Supporting Optimal Infant Feeding



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A catalyst for global health

**List of acronyms**

|  |  |
| --- | --- |
| ANC | antenatal care |
| ART | antiretroviral therapy |
| ARV | antiretroviral drug |
| DHS | Demographic and Health Survey |
| eMTCT | elimination of mother-to-child transmission of HIV |
| EPI | expanded program on immunization |
| FANTA | Food and Nutrition Technical Assistance |
| FBP  FNS | food by prescription  Food and Nutrition Subdivision |
| GMP | growth monitoring and promotion |
| HAART | highly active antiretroviral therapy |
| HEW | health extension workers |
| IFA | iron folic acid |
| IMNCI | integrated management of neonatal and child illnesses |
| I-TECH | International Training & Education Center for Health |
| IYCF | infant and young child feeding |
| MAM | moderate acute malnutrition |
| MNP | micronutrient powders |
| MOHSS | Ministry of Health and Social Services |
| MTCT | mother-to-child transmission of HIV |
| MUAC | mid-upper arm circumference |
| NACS | nutrition assessment, counseling, and support |
| NAFIN | Namibia Alliance for Improved Nutrition |
| NIMART | nurse initiated and managed antiretroviral treatment |
| OPD | outpatient department |
| PEPFAR | US President’s Emergency Plan for AIDS Relief |
| PHC | Primary Health Care |
| PMTCT | prevention of mother-to-child transmission of HIV |
| PNC | postnatal care |
| PROPAN | Process for the Promotion of Child Feeding |
| QI | quality improvement |
| RMT | regional management team |
| RUSF  RUTF  SAM  SUN | ready-to-use supplementary food  ready-to-use therapeutic food  severe acute malnutrition  Scaling Up Nutrition |
| STI | sexually transmitted infections |
| WFP | World Food Programme |
| WHO | World Health Organization |

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# 1. Executive summary

Under the leadership of Government of Namibia, this joint initiative with UNICEF aims to define and implement a minimum package of services for improved outcomes in nutrition, maternal and child health, and HIV across the continuum of care in the critical window of opportunity of the first 1,000 days. The joint team did not initially set out to develop a minimum package, we however realized that services were implemented in varied degrees of quality and opportunities and entry points existed to package services in a way that will facilitate improved quality of care and faster scale-up. The central point of the process of developing the guidance focused on assessing how service delivery at critical stages in continuum of care from pregnancy through childbirth and 24 months of the child (including ANC; PNC; nutrition assessment, counseling, and support [NACS]/antiretroviral therapy [ART] services; integrated management of neonatal and childhood diseases; growth monitoring and promotion; etc.) can be reorganized and/or streamlined more efficiently for improved quality and faster scale -up.

To further strengthen the local and global guidance in the minimum package is an appreciation of the need to increase awareness—not only within the regional and national levels of the MOHSS PHC Directorate, but also in related departments such as Policy and Planning of the MOHSS. In addition to the MOHSS, it is necessary to engage the Ministry of Finance and the National Planning Commission to improve the allocation of financial resources, as well as tertiary training institutions to embed the minimum package into pre-service training curricula for health providers.

Globally, the minimum package model could be tested in a number of countries/settings to set the tone for accumulation of the body of evidence for a systems strengthening and then allow the sharing and comparisons of best practices. Furthermore, in recognition of the advocacy needs, tailored advocacy kits need to be developed in Namibia and subsequently in focus countries. Such efforts are required to increase multi-sectoral support for the minimum package process in transitioning from existing to improved service delivery of nutrition and maternal and child health services.

**2. Introduction**

The first 1,000 days of life from conception until age 2 years are crucial for the optimal growth and development of infants and young children. Undernutrition that is not addressed during this critical window of opportunity is often irreversible. Therefore, optimal and appropriate infant and young child nutrition during the first 1,000 days of life has the potential of reducing stunting, as well as improving child survival outcomes through reduction in mortality and morbidity from common childhood diseases such as diarrhea and pneumonia.

Within the context of HIV, optimal and appropriate infant and young child feeding (IYCF) will not only lead to improved nutritional outcomes, but also reduction in the transmission of HIV from an HIV-positive mother to her infant. During the past few years, a global consensus began to emerge on the need for—and the feasibility of—substantially reducing the number of children newly infected with HIV and improving the nutritional status of women and children in order to accelerate progress towards achieving the related Millennium Development Goals (MDGs) 1, 4, 5, and 6. A Global Plan toward the elimination of mother-to-child transmission of HIV (eMTCT) was launched at the UN General Assembly High-level Meeting on AIDS in June 2011.

The Global Plan recognizes the need to better integrate HIV interventions with other critical services to expand coverage, ensure the sustainability of service delivery, and ultimately improve health outcomes of mothers and children in countries with a high burden of HIV. In the area of prevention of mother-to-child transmission of HIV (PMTCT), UNICEF, in collaboration with the World Health Organization (WHO), is leading the global response toward elimination of new HIV infections in children by 2015 and keeping their HIV-positive mothers alive. The four program elements of the UN comprehensive approach to the prevention of HIV infection in infants and young children cut across the spectrum of nutrition and maternal and child health services and are reliant on the same national, sub-national, and facility-based health systems and the same opportunities for community engagement. Generally speaking, current national scale-up efforts for HIV may not adequately address the full spectrum of maternal and child health and nutrition in an integrated manner.

In light of the current momentum toward integration and streamlining of HIV services toward the goal of eMTCT and in order to deliver on key milestones of the Global Plan, UNICEF—in collaboration with global and regional partners—is undertaking a number of activities to specifically address the scaling up of optimal IYCF feeding practices in the 22 countries with a high burden of HIV prevalence. Within the broader scope of work, UNICEF had an opportunity to provide support to Namibia in their national strategic review process for eMTCT. Namibia is one of the 22 high-burden countries and is currently undertaking a review of the national PMTCT program and developing a national strategic planning for eMTCT. The Namibia National Strategic Framework (NSF) on HIV/AIDS response aims toward virtual eMTCT in the country by 2016. Strengthening infant feeding—including exclusive breastfeeding—and nutritional counseling are listed as priority actions in the NSF.

UNICEF formed a partnership with the Government of Namibia with technical assistance from PATH to develop national guidance on scaling up optimal infant feeding practices—including in the context of HIV—as an integral component of facility- and community-based services. The national guidance shall also be shared globally to advise similar programs elsewhere.

**3. The Namibia context**

Malnutrition among children is a serious problem in Namibia. According to the 2006–07 Demographic and Health Survey (DHS) data, roughly 29 percent of children under the age of five years are stunted, while 7.5 percent suffer from acute malnutrition.[[3]](#footnote-3) Severe acute malnutrition affects roughly 1.9 percent of children below five years. Roughly 17 percent of children under five are underweight. These figures suggest that in Namibia, long-term malnutrition (i.e., chronic malnutrition) resulting from continuous lack/shortage of quality foods and/or recurring episodes of illnesses (including HIV) is of significantly more concern than acute malnutrition caused by recent episodes of illness and/or lack/shortage of food. Chronic malnutrition in the first two years of life—if not treated—is irreversible, and results in permanent developmental damage, which is manifested in poorer outcomes in growth, education, and livelihoods over the course of a lifetime.[[4]](#footnote-4)

**3.1 Infant and young child feeding practices**

Breastfeeding is common in Namibia, with 94 percent of children being breastfed early in life.[[5]](#footnote-5) The DHS also reported that 71 percent of children were breastfed in the hour following birth and 92 percent in the first day after birth.[[6]](#footnote-6) However, the DHS data shows that only about half of the children under two months old age are exclusively breastfed. The use of artificial milk feeding is high with about 35 percent of children between 0 and 5 months receiving artificial milk. The proportion of children who are exclusively breastfed drops to 6 percent by the age of 4–5 months from 53.6% at birth.[[7]](#footnote-7)

In terms of initiation of complementary feeding, the DHS reports that complementary feeds are initiated in 59 percent of infants and young children in the 4–5-month age group and among 70 percent of children in the 6–8-month old age group. However a quality diet is not provided to all infants and young children during the initiation of complementary feeding, as indicated by the fact that only 39 percent of children 6–8 months, 33 percent of children 9–11 months, and overall 34 percent of children under 24 months of age received a minimum acceptable diet.[[8]](#footnote-8) A minimum acceptable diet for children under 24 months who are breastfed should include 4 food groups or more every day and a minimum of 2 meals for children 6–8 months and 3 meals for children 9–23 months olds. A minimum acceptable diet for non-breastfed children under 24 months should include at least 4 food groups and 4 meals per day.[[9]](#footnote-9)

The data also indicates that when children were ill with diseases such as diarrhea, around 36 percent were fed less liquids and 44 were fed less solids. These feeding practices are found across all levels of wealth and education, as well as across both urban and rural areas. In addition to poor infant and young child nutrition, poor maternal nutrition is a cause of concern in Namibia. The data shows the quantity of nutrition is less of a concern compared to the quality of nutrition. Women having less education and lower incomes are less likely to consume fruits and vegetables rich in vitamin A, foods rich in iron, and protein-rich animal foods.

Poor hygiene is another factor that exacerbates malnutrition. Poor hygiene is a problem in Namibia, with great disparities between rural and urban areas. For instance, even though around 88 percent of households have access to an improved source of water, only 34 percent of households have an improved toilet that they do not share with other households. In rural areas, 78 percent of the population defecates in the open.

**3.2 The enabling environment for infant and young child feeding—including infant feeding within the context of HIV—in Namibia**

In 2010, Namibia renewed its PMTCT guidance to take into account the new (2010) WHO PMTCT guidelines and selected Option A for ARV prophylaxis. Since then, Namibia has adopted Option B+. In May 2011 the country issued the following guidelines:

“*Mothers should breastfeed their infants exclusively for the first six months of life, introduce appropriate complementary foods thereafter and continue breastfeeding for the first twelve months of life, with ARVs up to 4 weeks after all breastfeeding has stopped. However for those mothers on HAART for their own health, the infant only takes NVP for 6 weeks. Breastfeeding should then only stop once a nutritionally adequate and safe diet without breast milk can be provided.”*

The guidelines also provide general guidance for the counseling of mothers during antenatal care (ANC), postnatal care (PNC), and follow-up visits at 6 days, 6 weeks, 10 weeks, and 14 weeks, and then monthly until 12 months. Nationwide dissemination and training of the guidelines to health workers has been undertaken.

PMTCT services were first introduced in March 2002 at two hospitals in the country. As of March 2010, coverage level of such services is estimated at 77 percent, with the “universal access” target of 75 percent having been reached by 2010. Around eight out of every ten facilities offer ANC services and among these, close to nine of every ten facilities report that they offer PMTCT services.[[10]](#footnote-10) PMTCT services include pre-test counseling, drawing of blood for HIV testing, post-test counseling, rapid testing, issuance of antiretroviral drugs (ARVs) to mothers and babies, drawing of blood for CD4 testing, referral of eligible women for highly active antiretroviral treatment (HAART), conduction of safe deliveries, and infant feeding counseling and support.

Namibia is fully committed to virtual eMTCT, which is evidenced not only by the NSF target of 4 percent mother-to-child transmission of HIV (MTCT) by 2015/16, but also by the recently launched campaign of the First Lady to increase male involvement in PMTCT and promote breastfeeding and other high level commitments made during the UN High Level Meeting on AIDS in June 2011.[[11]](#footnote-11),[[12]](#footnote-12)

Namibia, has one of the highest antenatal coverage rates for PMTCT in sub-Saharan Africa, but is still limited by unique challenges. It is reported that up to 90 percent[[13]](#footnote-13) of pregnant women in need of ARVs attending ANC receive medication. However, gaps still remain with regard to the quality of PMTCT services being delivered and compliance with the services and advice provided. In recognition of these gaps, PMTCT stakeholders under the guidance of the national technical working group on PMTCT conducted a comprehensive review of key challenges in the PMTCT program, so as to develop a costed strategy to guide the country toward virtual eMTCT by 2015/16.[[14]](#footnote-14) The technical working group identified the elements listed below as critical to achieve the eMTCT goals:

1. PMTCT monitoring and reporting system.
2. PMTCT prongs 1 and 2 (primary prevention of HIV and preventing unwanted pregnancies among HIV-positive women).
3. HIV testing and counseling and ARV provision.
4. Postnatal follow-up (up to 18 months): early infant diagnosis.
5. HIV and infant feeding.
6. Continuum of care

The identification of these critical elements provided direction for the development of a process to address the challenges common to HIV, IYCF, and overall nutritional status of mothers and their children.

With respect to health service delivery, challenges to optimal IYCF programming include: (1) the high workload for health workers with limited time for IYCF counseling and limited time to be adequately trained on IYCF counseling;[[15]](#footnote-15), [[16]](#footnote-16) the absence of a special care of health workers for nutrition or IYCF counseling in health centers; and limited and often absent community-based system that promotes and supports health issues and/or IYCF. Limited financial investment in developing systems for the sustainable promotion of IYCF [[17]](#footnote-17) was identified as a huge gap hindering the effectiveness of IYCF programming.

**4. Why a local and global guidance**

In a bid to further support PMTCT and safeguard the nutritional health of infants and young children, Namibia adopted the updated guidelines on IYCF released in 2010 by the World Health Organization.[[18]](#footnote-18) Furthermore, in 2011 Namibia was granted membership to the Scaling Up Nutrition (SUN) movement.[[19]](#footnote-19) All these commitments provide the ideal environment required for the convergence of Namibia’s strategy to eliminate maternal to child transmission of HIV with the need to reduce stunting.

Under the leadership of Government of Namibia, the joint initiative with UNICEF aims to define and implement a minimum package of services for improved outcomes in nutrition, maternal and child health, and HIV across the continuum of care in the critical window of opportunity of the first 1,000 days. The joint team did not initially set out to develop a minimum package, we however realized that services were implemented in varied degrees of quality and opportunities and entry points existed to package services in a way that will facilitate improved quality of care and faster scale-up. The central point of the process of developing the guidance focused on assessing how service delivery at critical stages in continuum of care from pregnancy through childbirth and 24 months of the child (including ANC; PNC; nutrition assessment, counseling, and support [NACS]/antiretroviral therapy [ART] services; integrated management of neonatal and childhood diseases; growth monitoring and promotion; etc.) can be reorganized and/or streamlined to more efficiently deliver these services.

The reorganization aims at supporting better adherence to counseling on part of service recipients, enhancing the understanding of health-seeking behaviors, and looking at ways to improve health-seeking behaviors. For service providers, the process aims to equip health workers at the facility and community level with the knowledge, skills, and resources that will streamline and improve service delivery to promote maternal, infant, and young child nutrition and health, as well as HIV-free survival.

The minimum package was developed on the basis of sound health programming theory and not from rigorous field experience due to financial and human resource constraints. The development of the minimum package therefore involved researching existing evidence on guidelines for optimal service delivery processes within the continuum of care and synthesizing this evidence.

Midway during the process of development the minimum package has been incorporated into the ongoing Quality Improvement (QI) program aimed at consolidating and improving an integrated approach to nutrition programming that is being spearheaded by the Food and Nutrition Subdivision (FNS) of the Ministry of Health and Social Services (MOHSS).

The guidance was developed with the aim of being a user-field friendly tool for use by health service providers. The MOHSS was conscious that this package would not be yet another set of guidelines that will be parallel to the on –going system. MOHSS stressed the importance of developing a package that breaks down current approaches into minimum acceptable doable actions for service providers. The guidance therefore aimed to be practical, incorporating existing services into a more logical and efficient process flow for the benefit of service providers and service recipients.

**5. Development of a local and global guidance**

The process involved a step-by-step approach with a focus on the building blocks of health systems strengthening: (1) delivery of effective, quality interventions; (2) capacity building of service providers; (3) dissemination of nutrition information; (4) improving access to supplies and commodities; (5) financing of interventions; and (6) developing an enabling policy environment. The following framework (Figure 1) outlines the major steps in the process.

**Figure 1: Step-by-step process for developing the minimum package**

**Step 1: PARTNERSHIPS**

* **MOHSS programs**
* **UNICEF**
* **Maternal, Infant, and Young Child Nutrition Group**
* **NAFIN**
* **RMTs**
* **Health facility managers**
* **Nongovernmental organizations**

**GOVERNMENT LEADERSHIP AT EVERY STAGE**

**PARTICIPATORY APPROACH**

**Step 2: EVALUATION OF SERVICES**

* **Literature/Document review**
* **Visits to health facilities and communities**
* **Discussions with RMTs, district-level stakeholders, nongovernmental partners**

**FOCUS**

**Addressing the building blocks of health systems strengthening**

**Step 3: IDENTIFYING OPPORTUNITIES FOR IMPROVED SERVICE DELIVERY**

* **Process mapping of health services**
* **Facility and community level stakeholder mapping for integration**
* **Articulating services, tools, messages to be integrated into existing services**

**Step5: MINIMUM PACKAGE**

**Where:** **OPD/ triage, family planning, ANC, labor/delivery, postpartum visits, monthly EPI and GMP, ART, community points, etc**.

**How:** **Health service provider at each point, HEW, task-sharing, QI**

**What: Key actions, reference values , specific job aids, and tools**

**Step 4: DEVELOPMENT OF THE MINIMUM PACKAGE**

* **Negotiations with managers and supervisors**
* **“Shadow” practice in selected facilities and communities**
* **Fine tune key messages, job aids, flow of services**
* **Focus groups with clients**
* **Verifying and validating key service integration points**
* **Validating minimum package**

**5.1 Partnership building**

The initial interaction with the led FNS-MOHSS process took the form of presentations and dialogue with the management level within the Primary Health Care (PHC) directorate. This was part of the inception stage of the process. Additionally, interviews with separate key stakeholders in nutrition in Namibia were held during the inception stage. Subsequently, led by the FNS, efforts were made to strengthen collaboration between current MOHSS programs such as PMTCT, child health, primary health care, reproductive health, maternal and child health, neonatal health, and HIV. We identified a gap in joint planning of health and nutrition activities among these programs and generated discussions around strengthening collaboration and ways to improve integration of programs. Consensus-building meetings were also held with partners outside of MOHSS, especially the maternal, infant, and young child nutrition group, the Namibia Alliance for Improved Nutrition (NAFIN) group, US President’s Emergency Plan for AIDS Relief (PEPFAR) partners such as FANTA-III and I-TECH academic groups, and regional/district/facility and community program managers. These partners contribute significantly to nutrition, HIV, and health related programs in facilities and communities and were therefore instrumental in guiding the partnership to hone in on crucial areas that needed to be addressed in health facilities and communities in the minimum package.

In selected regions, districts, and health facilities, we conducted negotiation workshops in which managers discussed what is feasible, difficult, or impossible to integrate in routine services, as well as new ideas that could be adopted. Applying a participatory approach, a series of consultations and consensus building workshops were organized at every stage of the process with these partners and we also conducted joint visits to regions, districts, and health facilities. The outcome of this approach resulted in buy-at all levels from the facility/community levels to the national level. The MOHSS has defined the minimum package as “integrated minimum package for routine nutrition services: *reaching every mother and child*.”

**5.2 Evaluation of current services**

The partnership reviewed documents, conducted field visits to health facilities and communities, and held discussions with regional and district teams and nongovernmental organizations. The team observed that opportunities to integrate nutrition services were missed at service delivery points such as patient registration points, outpatient departments (OPD)/triage, waiting rooms, ANC, PMTCT/ART clinics, labor and delivery wards, postnatal clinics, and well-baby/immunization clinics. Our review also revealed the following:

* Communities are aware of the importance of breastfeeding, but have low awareness about risks of early initiation of complementary foods (and giving water before six months), as well as the benefits of breastfeeding for mothers. Some mothers expressed their inability to buy nutritious complementary foods. Other mothers said they had problems expressing breastmilk. Reach of IYCF messaging is poor—even in Windhoek, the capital of Namibia.
* Barriers to exclusive breastfeeding include early return to work (or school for the many young mothers), poor positioning and attachment, confusion around breastfeeding in the context of HIV (including supposed positive effects of formula feeding), limited support of partners, and incorrect messaging from health providers. Other cultural barriers include (for example in the Damara/Nama community) taboos against people eating foods prepared by a breastfeeding mother.
* Most mothers said they received health information during ANC visits and from health workers, as well from the media.
* Job aids were not found at all facilities visited. The job aids were not always suitable for nutrition and related maternal and child health education, especially with a focus on the first 1,000 days. Where job aids were available, not all were used optimally.
* Grandmothers are involved in taking care of children, but did not often have access to necessary health and nutrition information. Support from fathers was identified to be very low with only about 37 percent of children living with both parents, while 50 percent lived with their mothers.

**5.3 Opportunities for improved service delivery**

Participatory workshops with district and facility level managers were very thorough in a bid to extract necessary details at each service delivery point right down to the community level. We observed that nutrition services were mostly left out in the various service delivery points. Heath workers had no job aids on nutrition and scanty information or guidance on what to do in the case of stock outs of therapeutic and supplementary foods. In the target facilities, weights and heights taken at the OPD were only used for drug administration, while service providers thought nutritional services were an added burden even though they agreed they formed part of their job descriptions. We also observed several missed opportunities to include nutrition services in delivery points such as the OPD, waiting time at ANC, PNC, expanded program on immunization (EPI), and family planning. Counseling given to PMTCT and ART clients missed opportunities for inclusion of nutritional assessment and counseling. Duration of counseling was raised as an issue and more insights are needed to guide health workers on efficient utilization of time spent on overall services. These areas have been captured under the QI component of the minimum package. Structured discussions and consultations were undertaken in facilities in collaboration with managers and supervisors to identify the following main questions for consideration:

1. What happens when a client first enters a clinic, which service delivery points does she go through, what is her first point of contact? For example, some clinics registered all clients (pregnant, adults, children) at one contact point after which there is a significant waiting time outside before clients are called to the OPD for another length of waiting. Several opportunities were identified to capitalize on waiting time.
2. Who is doing what at the various delivery points and who is reaching communities and households? How smoothly are the services flowing? Who will lead strengthening of nutritional counseling? For example some clinics had more health providers, while others had less numbers of health workers with higher workload. “Community counselors” were identified in some clinics providing HIV counseling services mainly at the facility level.
3. How will integrated services be conducted—for example, assessment and counseling at the community and facility levels? What are the key messages and how will they be packaged taking into consideration time staff constrains, workload etc.? What are the needs for specific job aids at each delivery point? How effective would it be to have an inventory of job aids?

**5.4 Development of the minimum package**

The minimum package can be described as a minimum acceptable set of standards designed to guide health workers in optimal delivery of maternal and child health and nutrition services. The minimum package is designed to be used as a user-friendly process tool to streamline delivery of these services. Under the current MOHSS plans, the minimum package will serve as an operational guideline that combines IYCF program delivery under the PHC umbrella as an opportunity to improve routine services.

In the development of the minimum package, participatory regional- and district-level workshops were conducted to bring together health facility managers and district and regional supervisors, in addition to the maternal, infant, and young child nutrition working group, PHC management at the national level of the MOHSS. The consultative methodology included the following:

* + - Half-day workshop with the regional management team(s) (RMTs) in target region(s) to agree on how RMTs intend to supervise the implementation of the minimum package.
    - One day “shadow” implementation of the minimum package in 3–6 clinics and possibly one hospital—including exploring opportunities for integration of the minimum package into PNC services.
    - Focus group discussions with ANC clients, including testing of take-home materials for ANC and PNC clients.
    - Feedback meeting with RMTs to improve on the process and work planning by RMTs on next steps.

Workshops participant reviewed all the information collected during the evaluation process and agreed on the following:

* Key service delivery points (at both facility and community levels) that render feasible opportunities for integration.
* Appropriate categories of service providers.
* Key messages and job aids specific to teach service delivery point.
* Supervisory roles.

Furthermore, planned focus group discussions with ANC clients as well as caregivers such as grandmothers were undertaken. These workshops also developed an overarching methodology that fits into routine MCH/ANC/PNC/ART/growth monitoring and promotion (GMP)/family planning/nutrition service delivery at the facility and community levels. This methodology responded to the practical needs of the facility and the beneficiaries of the services.

A series of revisions were undertaken in collaboration with RMTs with emphasis on the continuum of care from the first ANC booking visit, through ANC, labor and delivery, three days after delivery to the first six months, 6–12 months, and 12–24 months as well as key service contacts during this continuum of care (Table 1).

**Table 1: Contact points for continuum of care**

|  |  |
| --- | --- |
| Point of service delivery | Entry points for scale up |
| Antenatal care clinics (ANC) and PMTCT | Strengthen nutritional assessment and identification of malnourished clients |
| Postnatal care (PNC) clinics up to 6 months | Strengthen nutritional counseling within PNC related services |
| MCH clinics (expanded program on immunization [EPI] and growth monitoring and promotion [GMP]) | Strengthen how to interpret growth card to caretaker, provide nutritional counseling and referrals on growth faltering |
| OPD | Strengthen nutritional assessment and active identification of malnourished, especially children OVC |
| HIV testing and counseling | Strengthen nutritional counseling |
| ART services | Strengthen correct classification of malnourished clients  Strengthen nutritional counseling |
| Management of acute malnutrition | Strengthen correct classification of malnourished clients, administration of specialized foods |
| Outreach/Community services | Strengthen nutritional assessment and counseling |
| Referral between service delivery points | Strengthen correct classification of malnourished clients |
| In-patient services | Strengthen correct classification of malnourished clients  Strengthen nutritional counseling during discharge |

The package has also taken into consideration the needs for resource-constrained settings, where mothers are unable to attend ANC early in pregnancy and are unlikely to continue on a monthly basis from the second trimester. For examples, 81 percent of women attend ANC at least once during their pregnancy, but 67 percent make up to four visits.[[20]](#footnote-20) Therefore, some of the activities at the different stages have been merged for more effectiveness depending on the stage at which a woman presents herself for ANC.

In order to ensure integration into existing structures, relevant areas of existing protocols were incorporated in the package—e.g., the Partnership for Maternal, Newborn and Child Health tool, which addresses ways to strengthen service provision. Moreover, the minimum package recommends tools/job aids at each service delivery point and specifies whether they are specifically meant for health workers as counseling tools or also for health education in group settings. Take-home materials for clients seeking health services at the different service delivery points are also specified. The contact points in the package include the visit stage, the kind of services that should be provided, task-sharing suggestions in light of ongoing nurse initiated and managed antiretroviral treatment (NIMART) activities, and suggested capacity building activities. The activities and tools of each visit stage are summarized in the matrix in addition to the messages and recommended content in take-home materials.

**5.5 Content of the minimum package**

At each service delivery point (as indicated in Table 1), the team identified minimum standards within the package that will facilitate scale up of nutrition services at facility and community levels taking into consideration the following:

* Every client (children, mothers, HIV/TB clients) presenting at each service delivery point is nutritionally assessed correctly according to a set of minimum standards.
* Every client ((children, mothers, HIV/TB clients)) being assessed receives nutritional counseling according to a set of minimum standards. The methodology for “effective” counseling is packaged and defined under “individual counseling” and “group counseling”
* Every qualified client is provided with appropriate treatment and specialized foods and follow up support.
* Outreach and community services are equipped with minimum package for nutritional care and counseling activities.
* Referrals of nutrition clients within health services and between health facilities and community services are guided by a set of minimum standards.
* Health staff posted at each service delivery point are skilled in the use of the package
* Each service delivery point is equipped with appropriate standards as well as relevant supporting job aids.
* Job aids, standards, protocols are available in all service delivery points.

It provides guidance on service delivery, reference values, relevant job aids and take home materials. Finally, it makes room for service providers to score themselves on whether key actions have been implemented and if they have correctly followed the reference values. The content is arranged as follows:

* ANC package: Provides key actions at the various stages of ANC visits and includes tools for pregnant women covering topics such as dietary diversity, HIV prevention, and the encouragement of male involvement in ANC and IYCF. During the late ANC period, women are also given counseling on breastfeeding and the dangers of mixed feeding in preparation for childbirth. Health workers job aids emphasize skills and knowledge required to monitor nutritional status of pregnant women during ANC to prevent malnutrition in pregnancy.
* Postnatal: Covers the first 6 months postpartum and includes the period of exclusive breastfeeding. This package also focuses on maternal nutrition and preparing mothers for complementary feeding that begins at 6 months. Key actions on HIV prevention in addition to the family planning and actions for women who are on ART under Option B+.
* EPI: This stage has been identified as a crucial vehicle for the improvement of IYCF programming as a part of strengthening combined routine nutrition and maternal and child health services. The package highlights key GMP activities to strengthen, especially monitoring of the infants’ growth and weight gain for early prevention of malnutrition. The micronutrient deficiency control program starts when the baby receives its first vitamin A capsule at 6 months in addition to multiple micronutrient powders (Namibia policy distributes 12 months’ supply for children 6-24 months). The package includes take-home materials, key messages, and services to be provided through EPI to work toward strengthening routine programming. Opportunities for referrals between EPI and other PHC programs related to IYCF programming have been highlighted.
* Community /Outreach: Namibia is currently training a cadre of community health workers called health extension workers (HEWs) who are being deployed in all health facilities to undertake community-based service delivery. The package takes advantage of this development and provides standards for community-based IYCF service delivery which includes key messages and services to be provided by HEWs in communities.

**Table 2: Matrices of minimum package**

**Service delivery point: Antenatal Care (including PMTCT)**

**Service providers: Nurses, clinicians, community counselors, outreach clinic teams**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Service description** | **Action to be taken** | **Reference values** | **Scoring**  **Y/N** | **Job aid** |
| **Nutrition Assessment** | Dietary assessment | Take diet history of **EVERY** ANC client during **EVERY** visit (1st 2nd 3rd and 4th visit including **EVERY** additional visit) | None  ***NOTE***: Food selection should be from all food groups |  | Diet history form  Food Group Chart  Patient register  ANC Pink Client card |
| Record all data in patient file and client card |
| Anthropometric measures | Refer to MUAC chart for procedure  Measure MUAC of **EVERY** Antenatal Care client during **EVERY** visit (1st 2nd 3rd  and 4th visits including **EVERY** additional visit)  **Note: Do not use ordinary measuring tape**  *Classify malnutrition using MUAC* | **Pregnant women**  Normal nutritional status: MUAC from **22.0** **cm** or moreMAM: MUAC from **19cm** to below **22.0 cm**  SAM: MUAC less than **19.0 cm** with or withoutmedical complications |  | MUAC tapes  Pregnant and 6 months post-partum MUAC chart  ANC Pink Client card  Patient register  Oedema chart |
| Look for signs of bilateral pitting oedema | Bilateral pitting oedema is a sign of severe acute malnutrition. Both feet or legs are swollen and the skin stays indented when pressed with a finger |  |
| Weigh every pregnant woman attending EVERY ANC and counsel on weight changes; insufficient weight gain or weight loss counsel on increased dietary intake, excessive weight gain counsel on associated risks | Recommended maximum weight gain during pregnancy |  | Scales and weight charts |
| Prescription of specialized foods | Provide specialized food for clients who are classified as MAM or SAM | Entry, and Exit Criteria for Specialised food products |  | Entry, and Exit Criteria for Specialised food products  Referal form for SAM and MAM |
| Record all data in patient file and client card |  |  |  |  |

**Service delivery point: Antenatal Care (including PMTCT)**

**Service providers: Nurses, clinicians, community counselors, outreach clinic teams**

| **ANC service** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
| **Booking visit** | Registration at clerk’s desk | Provide women with ‘take home’ brochure on pregnancy and nutrition | None |  | Take home brochure |
| **Counseling** One-on-one counseling for pregnant women (time: 15 min per client) | Diet history | Use diet history obtained to counsel pregnant woman on need for one extra meal or snacks throughout the day, and the need to include iron and vitamin A rich foods such as animal meats, pumpkin, orange fleshed sweet potato, carrots, mangoes, pawpaw, etc. | Consumption of extra meal per day  Inclusion of meats and animal proteins, orange fleshed sweet potatoes, yellow flesh fruits and vegetables, leafy green vegetables and drinking at least 2L of water from a safe drinking source |  | Diet history form  Foods for pregnancy guidelines–food plate model  ANC Pink Card |
| Based on anthropometric assessment and diet history counsel on severe acute malnutrition (SAM), moderate acute malnutrition (MAM) |  |  |
| Assess for presenting medical and nutrition related problems |  |  |
| Discuss ways to deal with the nutrition related problems |  |  |
| Weight monitoring | Weigh every pregnant woman at every ANC visit, plot weight and counsel as needed. | Insert recommended maximum weight gain during pregnancy |  | Scales and weighing charts |
| IFA supplementation | Discuss benefits of taking iron/folic acid tablets; One daily tablet (60 mg iron) throughout pregnancy for 6 months (180 tablets) | Record IFA supplements given in ANC register |  | IFA information from flipchart  Counseling cards |
| Counsel on side effects and compliance, and when and how to get more tablets. |  |
| Discuss strategies to overcome barriers to taking iron/folic acid tablets |  |
| 1st ANC visit | Discuss benefits of exclusive breastfeeding (0–6 months) | 0–6 months:  **Breastmilk only**  No other fluids  No water  Exclusively breastfeed even if the baby is HIV exposed |  | Counseling chart |
| Discuss benefits of early initiation of breastfeeding and feeding colostrum | 1st hour of delivery put baby to the breast  Colostrum is important for building immunity of the baby |  | Counseling chart |
| Discuss preventing transmission of HIV through breastfeeding | Adherence to ARVs  Exclusive breastfeeding 0–6 months even if baby is HIV exposed |  | Counseling chart |
| Refer client for HIV counseling and testing | All pregnant women should be given HIV counseling and testing |  | PMTCT guidelines |
| 2nd ANC visit | Emphasize benefits of breastfeeding for mother and baby. | Easy to give  Safe and healthy  Not expensive  Growth of the baby  Health of mother |  | Counseling chart |
| 3rd ANC visit | Reinforce benefits of breastfeeding for mother and baby  Discuss risks of mixed feeding in relation to PMTCT for HIV infected mothers, and risk of mixed feeding for health of baby (diarrhea) | Growth of baby, health of mother  Mixed feeding increases transmission of HIV from infected mothers  Mixed feeding increases risks of diarrhea for baby |  | Counseling chart |
| 4th ANC visit | Reinforce benefits of breastfeeding for mother and baby  Discuss skin-to-skin contact at birth; early initiation of breastfeeding within 60 min after delivery, feeding baby colostrum, importance of attachment and positioning | Easy to give  Safe and healthy  Not expensive  Growth of the baby  Health of mother  1st hour of delivery put baby to the breast  Colostrum is important for building immunity of the baby |  | Counseling chart |
| Family planning | At 4th or final ANC visit discuss importance of family planning to prevent subsequent pregnancy and to promote birth spacing | Insert family planning key messages |  |  |
| HIV prevention and ARV adherence | Discuss importance of HIV prevention and the benefits of ARV adherence with respect to PMTCT | ARV adherence protects the mother ARV adherence prevents HIV transmission from mother to the baby during breastfeeding  HIV prevention protects mother and baby |  |  |
| Hygiene and sanitation | Discuss desired hygiene and sanitation practices  Emphasize hand washing with soap at critical times | Wash hands with soap after using toilet, after changing baby’s nappies and before food preparation and feeding of babies |  |  |
| Deworming | Only provide deworming medication from second trimester onwards |  |  |  |
| Counseling on SAM or MAM | Based on anthropometric assessment, counsel women on SAM or MAM management |  |  |  |
| Prescribe specialized foods according to guidelines if SAM or MAM is indicated | Mid-upper arm circumference (MUAC) for pregnant and postpartum women  Normal >22.0 cm  Moderate malnutrition 18.5–21.0 cm  Severe <18.5 cm |  | NACS guidelines for treating SAM and MAM  Algorithm for management of malnutrition in pregnant women  Instruction chart on use of ready-to-use therapeutic foods (RUTF), ready-to-use supplementary foods (RUSF), food by prescription (FBF) |
| Issue prescribed specialized foods in the required quantities |  |  |  |
| Explain how the prescribed food should be prepared and consumed |  |  |  |
| Explain benefits and frequency for consumption of prescribed foods |  |  |  |
| Counsel on adequate dietary intake for pregnant women, emphasize an extra meal per day and nutrient rich foods |  |  |  |
| Instruct client **NOT** to throw away the empty sachets but keep them for the purpose of monitoring consumption of the **prescribed food** |  |  |  |
| Emphasize that **prescribed foods should not be shared** with other family members |  |  |  |

**Contact point: ANC group counseling**

**Service delivery point: Antenatal Care (including PMTCT)**

**Service providers: Nurses, midwives, clinicians, nutritionists, community counselors**

| **ANC service** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
| **Group education and counseling (20min)** | Triage | Triage clients into categories of malnutrition levels (maximum 8–10 clients)  Refer SAM and MAM clients for one-to-one counseling |  |  |  |
| Dietary intake during pregnancy | Counsel **EVERY** client on the need for adequate nutrition | Consumption of extra meal per day  Inclusion of meats and animal proteins, yellow flesh fruits and vegetables, leafy green vegetables drink at least 2L of water from a safe drinking source |  | Food group plate model  Flipchart |
| Discuss how to achieve a balanced diet (mixed or variety of foods) using food group concept; counsel pregnant women on need for one extra meal or snacks throughout the day, and the need to include iron and vitamin A rich foods such as animal meats, pumpkin, yellow flesh sweet potato, carrots, mangoes, pawpaw, etc. |
| IFA  Breastfeeding | Discuss benefits of taking iron/folic acid tablets; One daily tablet (60 mg iron) throughout pregnancy for 6 months (180 tablets) | One tablet daily – total 180 tablets |  | IFA information from flipchart |
| Counsel on side effects and compliance, and when and how to get more tablets. |  |  |
| Discuss strategies to overcome barriers to taking iron and folic acid tablets |  |
| Family planning | At 4th or final ANC visit discuss importance of family planning to prevent subsequent pregnancy and to promote birth spacing | Insert family planning key messages |  |  |
| ARV adherence and HIV prevention | Remind clients on the need for taking ARVs at right time and consistently to prevent/reduce possible side effects  Discuss importance of HIV prevention | ARV adherence protects the mother ARV adherence prevents HIV transmission from mother to the baby during breastfeeding  HIV prevention protects mother and baby  HIV prevention protects mother and baby |  |  |
| Hygiene and Sanitation | Discuss desired hygiene and sanitation practices  Emphasize hand washing with soap at critical times | Wash hands with soap after toilet, after cleaning baby, before food preparation and feeding babies |  | WASH video  WASH flipchart |
|  | 1st ANC visit | Discuss benefits of exclusive breastfeeding (0 – 6 months) | 0-6 months:  **Breastmilk only**  no other fluids  no water  Exclusively breastfeed even if the baby is HIV exposed |  |  |
| Discuss benefits of early initiation of breastfeeding and feeding colostrum | 1st hour of delivery put baby to the breast  Colostrum is important for building immunity of the baby |  |  |
| Discuss preventing transmission of HIV through breastmilk | Adherence to ARV  Exclusive breastfeeding 0-6 months even if baby is HIV exposed |  |  |
| 2nd ANC visit | Emphasize benefits of breastfeeding for mother and baby. | Easy to give  Safe and healthy  Not expensive  Growth of the baby  Health of mother |  |  |
| 3rd ANC visit | Reinforce benefits of breastfeeding for mother and baby  Discuss risks of mixed feeding in relation to PMTCT for HIV infected mothers, and risk of mixed feeding for health of baby (Diarrhea) | Growth of baby, health of mother  Mixed feeding increases transmission of HIV from infected mothers  Mixed feeding increases risks of diarrhea for baby |  |  |
| 4th ANC visit | Reinforce benefits of breastfeeding for mother and baby  Discuss skin-to-skin contact at birth; early initiation of BF within 60 min after delivery, feeding baby colostrum, importance of attachment and positioning | Easy to give  Safe and healthy  Not expensive  Growth of the baby  Health of mother  1st hour of delivery put baby to the breast  Colostrum is important for building immunity of the baby |  |  |

**Service delivery point: Delivery and immediate 6 hour PNC**

**Service providers: nurses, clinicians, community counselors, expert patients**

| **PNC service** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
| **Maternity Ward and delivery services** | Delivery room | Immediately after delivery of baby, put baby on mother’s chest for skin-to-skin contact. |  |  | Wall Chart in Delivery Room |
| Assist mother to attach baby for initiation of breastfeeding | Attachment and positioning |  |
| 6 hours PNC  Maternity ward | Administer high dose vitamin A to mother and record on pink ANC/PNC card | Immediately after delivery give all mothers one oral dose of 200,000 IU Vitamin A |  | ANC/PNC Card |
| Mother and baby need to room together | Kangaroo mother care |  | Posters in maternity wards |
| **Before discharge** | IFA | Discuss benefits of taking iron and folic acid tablets; One daily tablet (60 mg. iron) 6 weeks after delivery | Take one tablet daily until 6 weeks after delivery |  | Flipcharts etc |
| Counsel on compliance, and when and how to get more tablets. |  |  |
| Discuss strategies to overcome barriers to taking iron and folic acid tablets | How to overcome side effects |  |
| Breastfeeding counseling | Observe mother breastfeeding and assist with attachment and positioning | Signs of good attachment and positioning |  | IYCF counseling cards |
| Discuss breast health issues |  |  | IYCF counseling cards |
| Maternal nutrition | Discuss with mother the importance for her to eat a nutritious diet from all food groups; emphasize iron and vitamin A rich foods | Consumption of extra meal per day  Inclusion of meats and animal proteins, orange fleshed sweet potatoes, yellow flesh fruits and vegetables, leafy green vegetables and drinking at least 2L of water from a safe drinking source |  |  |
| Family planning | At every PNC visit discuss importance of family planning to prevent subsequent pregnancy and to promote birth spacing | Family planning methods |  |  |
| ARV adherence | Discuss the benefits of ARV adherence with respect to PMTCT | Reduction in transmission of HIV through breastfeeding |  |  |
| Hygiene and sanitation | Discuss desired hygiene and sanitation practices  Emphasize hand washing with soap at critical times | Hand washing with soap at critical times: after using toilet, after changing baby’s nappies, before food preparation and feeding child |  |  |
| Client Data Management | Record all PNC services on the pink card |  |  | Pink Client Card |

**Contact point: PNC**

**Service: Nutrition assessment**

**Service providers: nurses, clinicians, community counselors, expert patients**

| **PNC** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
| Nutrition assessment | Dietary assessment | Take diet history of **EVERY** PNC client during **EVERY** visit | Diet diversity from all food groups |  | Diet history form  Food Group Chart  Patient register  ANC/PNC Pink Client card |
|  | Anthropometric measures | Record all data in patient file and client card | **Post-partum women up to 6 months**  Mid-upper arm circumference (MUAC) for pregnant and postpartum women  Normal >22.0 cm  Moderate malnutrition 19.0–22.0 cm  Severe <19.0 cm |  | MUAC tapes, MUAC chart  Weighing Scales  Entry, and Exit Criteria for Specialized food products  ANC/PNC Pink Client card  Patient register  Referral form for SAM and MAM |
| Refer to MUAC chart for procedure  Measure MUAC of **EVERY** Postnatal client during **EVERY** visit (6 days, 6 weeks, 14 weeks, EPI visits etc.)  **Note: Do not use ordinary measuring tape**  *Classify malnutrition using MUAC* |
| Look for signs of bilateral pitting edema | Bilateral pitting edema is a sign of severe acute malnutrition. Both feet or legs are swollen and the skin stays indented when pressed with a finger |  | Edema chart |
| Measure and classify Hb levels | Cut off points for Hb levels |  | Hb chart |
| Prescription of specialized foods | Provide specialized food for clients who are classified as MAM or SAM | Entry and exit criteria for specialized food products |  | Entry and exit criteria for specialized food products  Referral form for SAM and MAM |
| Record all data in patient file and client card |  |  |  | Client card and patient register |

**Service delivery point: Postnatal care- every contact of the mother during EPI and other visits**

**Service provider: nurses, clinicians, community counselors, expert patients**

| **PNC service** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
| **Counseling** One-on-one counseling for postpartum women (time 10- 15min per client) | Diet History | Take diet history of ALL PNC clients during ALL visits ( 6 days, 6 weeks, 6 months, EPI visits, mother-baby-pair and every additional visit)  Discuss client’s reported food intake from all the food groups in the diet list  Use diet history obtained to counsel postpartum women on the need for iron and vitamin A rich foods such as animal meats, pumpkin, orange flesh sweet potato, carrots, mangoes, pawpaw, etc.  Discuss breastfeeding history  Record data in register and client cards | Consumption of extra meal per day  Inclusion of meats and animal proteins, orange fleshed sweet potatoes, yellow flesh fruits and vegetables, leafy green vegetables and drinking at least 2L of water from a safe drinking source |  | Diet history form  Foods for pregnancy guidelines – food plate model  ANC /PNC Pink card  Take home brochure on nutrition during and after pregnancy  Take home brochure on breastfeeding |
| IFA | Discuss benefits of taking iron/folic acid tablets; One daily tablet (60 mg. iron) until 6 weeks after delivery |  |  | Flipcharts |
| Counsel on side effects and compliance, and when and how to get more tablets. |  |  |
| Discuss strategies to overcome barriers to taking iron/folic acid tablets |  |  |
| Breastfeeding counseling | Discuss breastfeeding with women at **every** PNC visit | Breastfeeding positioning and attachment  Flow of breastmilk |  |  |
| Discuss exclusive breastfeeding |  |  |  |
| Observe breastfeeding at the following weeks postpartum:  6 days  6 weeks  14 weeks | Positioning and attachment  Flow of breastmilk |  | Breastfeeding cards |
| Discuss breast health issues | Engorgement  Sores  Etc. |  | Breastfeeding cards |
| Discuss **continued breastfeeding** until 24 months | For **HIV-exposed children** continue breastfeeding from **6 months up to 12 months** while providing a nutritionally adequate diet  Transition in the 11th month for one month in preparation to cease breastfeeding  If the mother is not able to provide a nutritionally adequate diet, she should continue to breastfeed up to 24 months  For **non HIV-exposed children** continue to breastfeed **up to 24 months** |  | Breastfeeding cards |
| Complementary feeding from 6 months | Initiate discussion when child is 5 months old about introduction of complementary foods when child turns 6 months old | **6 – 9 months:**  Iron and vitamin A rich foods  semi solid  3 times a day  **9-12 months:**  Iron and vitamin A rich foods  4- 5 times a day  **12-24 months:**  Iron and vitamin A rich foods  5 times a day |  | Counseling cards |
| Family Planning | At every PNC visit discuss importance of family planning to prevent subsequent pregnancy and to promote birth spacing |  |  |  |
| ARV Adherence | Discuss the benefits of ARV adherence | Reduction in transmission of HIV through breastfeeding |  | ARV adherence chart |
| Hygiene and Sanitation | Discuss desired hygiene and sanitation practices  Emphasize hand washing with soap at critical times such as after using toilet, after changing baby’s nappies and before and after preparing and eating food | Hand washing with soap after toilet, after cleaning baby, before handling and eating food |  | WASH video  WASH flipchart |
| Counseling on SAM or MAM | Based on anthropometric assessment, counsel women on SAM or MAM management |  |  | Instruction chart on use of RUTF, RUSF, FBF |
| Explain how the prescribed food should be prepared and consumed |  |  |  |
| Explain benefits and frequency for consumption of prescribed foods |  |  |  |
| Counsel on adequate dietary intake for pregnant women, emphasize an extra meal per day and nutrient rich foods |  |  |  |
| Instruct client **NOT** to throw away the empty sachets but keep them for the purpose of monitoring consumption of the **prescribed food** |  |  |  |
| Emphasize that **prescribed foods should not be shared** with other family members |  |  |  |
| Client Data Management |  |  |  |  |

**Contact point: PNC group education and counseling**

| **PNC service** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
| **Group education and Counseling (20min)** | Triage | Triage clients into categories of malnutrition levels (maximum 8 – 10 clients)  Refer SAM and MAM clients for one-to-one counseling |  |  |  |
| Dietary intake during postpartum | Counsel **EVERY** client on the need for adequate nutrition | Consumption of an extra meal a day  Inclusion of meats and animal proteins  Iron and vitamin A rich foods such as pumpkin, orange fleshed sweet potato, carrots, mangoes, pawpaw, vegetables, leafy green vegetables  Drinking at least 2L of water from a safe drinking source |  | Food Group Plate Model  Flipchart |
| Discuss how to achieve a diverse diet (mixed or variety of foods) using food group concept; counsel pregnant on one extra meal each day and snacks every day; counsel on inclusion of iron and vitamin A rich foods such as animal meats, pumpkin, orange fleshed sweet potato, carrots, mangoes, pawpaw, etc |
| Family Planning | At every PNC visit discuss importance of family planning to prevent subsequent pregnancy and to promote birth spacing | Family planning methods |  |  |
| ARV adherence and HIV prevention | Remind clients on the need for taking ARVs at right time and consistently to prevent/reduce possible side effects  Discuss importance of HIV prevention | ARV adherence protects the mother ARV adherence prevents HIV transmission from mother to the baby during breastfeeding  HIV prevention protects mother and baby  HIV prevention protects mother and baby |  | ARV adherence chart |
| Hygiene and Sanitation | Discuss desired hygiene and sanitation practices  Emphasize hand washing with soap at critical times such as after using toilet, after changing baby’s nappies and before and after preparing and eating food | Hand washing with soap after toilet, after cleaning baby, before handling and eating food |  |  |
| IFA | Discuss benefits of taking iron/folic acid tablets; One daily tablet (60 mg. iron) for 6 weeks after delivery | One tablet daily for 6 weeks after delivery |  | IFA information from flipchart |
| Counsel on side effects and compliance, and when and how to get more tablets. |  |
| Discuss strategies to overcome barriers to taking iron/folic acid tablets |  |
| Breastfeeding | Discuss benefits of exclusive breastfeeding (0 – 6 months) for mother and baby | Growth of baby  Health of baby  Health of mother |  | IYCF counseling cards |
| Demonstrate how to breastfeed (0-6 months) | Positioning and attachment |
| Discuss barriers to breastfeeding | Cultural practices such as pre-lacteal feeding and pressures from family members  Mixed feeding |
| Discuss continued breastfeeding up to 24 months | For **HIV-exposed children** continue breastfeeding from **6 months up to 12 months** while providing a nutritionally adequate diet  Transition in the 11th month for one month in preparation to cease breastfeeding  If the mother is not able to provide a nutritionally adequate diet, she should continue to breastfeed up to 24 months  For **none HIV-exposed children** continue to breastfeed **up to 24 months** |
| Complementary feeding from 6 months | Initiate discussion when child is 5 months old about introduction of complementary foods when child turns 6 months old | **6 – 9 months:**  Iron and vitamin A rich foods  semi solid  3 times a day  **9-12 months:**  Iron and vitamin A rich foods  4- 5 times a day  **12-24 months:**  Iron and vitamin A rich foods  5 times a day |  | Counseling cards |
|  | Discuss with every caregiver what foods are locally available |
|  | Counseling on age appropriate complementary feeding; Frequency of feeing, amount given at each meal, texture of foods, variety of foods and encouragement of active feeding (AFATVA principle) |
|  | Feeding the sick child | In addition to normal meals, give an extra meal each day |  |
|  | Counsel HIV infected mother to stop breastfeeding at 12 months | Stop gradually from the 1st week of the 12th month |  |
| Hygiene and Sanitation | Discuss desired hygiene and sanitation practices  Emphasize hand washing with soap at critical times such as after using toilet, after changing baby’s nappies and before and after preparing and eating food | Hand washing with soap after toilet, after cleaning baby, before handling and eating food |  | WASH video  WASH flipchart |
| Counseling on SAM or MAM | Based on anthropometric assessment, counsel women on SAM or MAM management |  |  | Instruction chart on use of RUTF, RUSF, FBF |
|  | Explain how the prescribed food should be prepared and consumed |  |  |
|  | Explain benefits and frequency for consumption of prescribed foods |  |  |
|  | Counsel on adequate dietary intake for pregnant women, emphasize an extra meal per day and nutrient rich foods |  |  |
|  | Instruct client **NOT** to throw away the empty sachets but keep them for the purpose of monitoring consumption of the **prescribed food** |  |  |
|  | Emphasize that **prescribed foods should not be shared** with other family members |  |  |  |
| Data management | Compile all data at end of clinic day |  |  | Client record |

**Contact Point: EPI, growth monitoring, sick child visit   
Service: Nutrition assessment   
Service providers: nurses, clinicians, community counselors, expert patients**

| **EPI and GMP Services** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
| **Nutrition Assessment** | Anthropometric measures | **Weigh** and **measure** **EVERY** child 0-59months, **plot/compute** weight-for-height, record in child health passport, **interpret growth for EVERY caregiver** | Growth curve |  | Scales, height boards and growth chart |
| **Refer all children immediately** with growth faltering for treatment and one-on-one counseling | Growth faltering means; no weight gain over two consecutive weighing /GM sessions |  | Growth chart |
| Observe growth trend for the sick child and **refer immediately** all children with growth faltering |
| Refer to MUAC chart for procedure  Measure MUAC of **EVERY** child aged 6-59 months **EVERY** visit to the health facility  **Note: Do not use ordinary measuring tape**  *Classify malnutrition using MUAC* | **Children 6-59 months**  Normal = >12.5 cm  Moderate acute malnutrition = > 11.5cm - < 12.5 cm  Severe acute malnutrition = <11.5 cm |  | MUAC tapes  Adult MUAC chart  Entry and exit criteria for specialized food products  ANC Pink Client card  Patient register  Edema chart |
| Look for bilateral pitting edema in both feet | Bilateral pitting edema is a sign of severe acute malnutrition in children. Both feet or legs are swollen and the skin stays indented when pressed with a finger |  |
| Prescription of specialized foods | Provide specialized food for clients who are classified as MAM or SAM | Entry and exit criteria for specialized food products |  | Entry and exit criteria for specialized food products |
| Provide multiple MNPs to ALL children 6-24 months | Every child 6-24 months should be provided with MNP **throughout a period of 12 months**  **Every child eligible for MNP to receive 90 sachets to be consumed with complementary foods over a period of 6 months** |  | MNP guidelines |
| Record all data in patient file and client card |  |  |  |  |

**Service delivery point: Growth monitoring and promotion and EPI**

**Service provider: nurses, clinicians, community counselors, expert patients**

| **EPI and GMP services** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
| **Counseling** One-on-one counseling (time: 10min per client) | Breastfeeding | Discuss benefits of exclusive breastfeeding (0 – 6 months) for mother and baby | Growth of baby  Health of baby  Health of mother |  | Counseling cards  Child Health Passport |
| Demonstrate how to breastfeed (0-6 months) | Positioning and attachment |  | Breast feeding history template |
| Discuss barriers to breastfeeding | Cultural practices such as pre-lacteal feeding and pressures from family members  Mixed feeding |  | IYCF counseling cards  Child Health Passport |
| Discuss continued breastfeeding up to 24 months | For **HIV-exposed children** continue breastfeeding from **6 months up to 12 months** while providing a nutritionally adequate diet  Transition in the 11th month for one month in preparation to cease breastfeeding  If the mother is not able to provide a nutritionally adequate diet, she should continue to breastfeed up to 24 months  For **none HIV-exposed children** continue to breastfeed **up to 24 months** |  |
| Counsel on oral thrush | Signs and symptoms |  |
| Complementary feeding from 6 months | Initiate discussion when child is 5 months old about introduction of complementary foods when child turns 6 months old | Give breastmilk first  Give semi solid foods  Give vitamin A and iron rich foods |  | Counseling cards  Child Health Passport |
| Discuss with every caregiver what foods are locally available | Refer to list of locally available foods in your region |  |  |
| Initiate discussion when child is 5 months old about introduction of complementary foods when child turns 6 months old | **6 – 9 months:**  Iron and vitamin A rich foods  semi solid  3 times a day  **9-12 months:**  Iron and vitamin A rich foods  4- 5 times a day  **12-24 months:**  Iron and vitamin A rich foods  5 times a day |  | Counseling cards  Child Health Passport |
| Counsel caregiver on feeding of the sick child | Feed the child in a responsive manner with love and attention  Continue feeding the child regularly during periods of illness and encourage intake of a variety of foods  Give sick child extra meals a day |  |
| Continued breastfeeding | Discuss continued breastfeeding up to 24 months | For **HIV-exposed children** continue breastfeeding from **6 months up to 12 months** while providing a nutritionally adequate diet  Transition in the 11th month for one month in preparation to cease breastfeeding  If the mother is not able to provide a nutritionally adequate diet, she should continue to breastfeed up to 24 months  For **none HIV-exposed children** continue to breastfeed **up to 24 months** |  | IYCF counseling cards  Child Health Passport |
| Hygiene and Sanitation | Discuss desired hygiene and sanitation practices  Emphasize hand washing with soap at critical times such as after using toilet, after changing baby’s nappies and before and after preparing and eating food | Hand washing with soap at critical times; disposal of children’s faeces in a latrine or buried away from house |  | WASH video and flipchart |
| Counseling on SAM or MAM | Based on anthropometric assessment, counsel caregiver about management of SAM or MAM for their child | Children 6 -59 months  Normal = or >12.5 cm  Malnutrition Moderate = > 11.5cm - <12.5 cm  Severe = <11.5cm |  |  |
| Prescribe specialized foods according to guidelines if SAM or MAM is indicated |  | NACS guidelines for treating SAM and MAM  Algorithm for management of malnutrition for children 6-59 months  Instruction chart on use of RUTF, RUSF |
| Issue prescribed specialized foods in the required quantities |  |  |
| Explain how the prescribed food should be prepared and consumed |  |  |
| Explain benefits and frequency for consumption of prescribed foods |  |  |
| Counsel on adequate age appropriate dietary intake for children |  |  | Counseling Cards |
| Instruct client **NOT** to throw away the empty sachets but keep them for the purpose of monitoring consumption of the **prescribed food** |  |  |  |
| Emphasize that **prescribed foods should not be shared** with other family members |  |  |  |
| Counseling on MNP | Explain how MNP should be prepared and consumed | MNP sachet to be mixed with a small portion of food. Child is fed this small portion first before offering the remaining portion of the meal. |  | MNP guidelines  MNP flipchart and counseling cards |
| Client Data Management | Record details in client register and child health passport |  |  | Client register  Child Health Passport |
| **Group Counseling**  **Time: 20 -25 minutes** | Waiting area/ room | Set aside a space for group counseling of caregivers bringing children under 5 for any service | Space can accommodate caregivers attending GMP/EPI |  |  |
| Group caregivers according to the following;  0-6 months  6-12 months  13-24 months  More than 24 months |  |  |  |
| Breastfeeding | Discuss benefits of exclusive breastfeeding (0 – 6 months) for mother and baby | Growth of baby  Health of baby  Health of mother |  | Counseling cards |
| Demonstrate how to breastfeed (0-6 months) | Positioning and attachment |  |
| Discuss barriers to breastfeeding | Cultural practices such as pre-lacteal feeding and pressures from family members  Mixed feeding |  |
| Discuss continued breastfeeding up to 24 months | For **HIV-exposed children** continue breastfeeding from **6 months up to 12 months** while providing a nutritionally adequate diet  Transition in the 11th month for one month in preparation to cease breastfeeding  If the mother is not able to provide a nutritionally adequate diet, she should continue to breastfeed up to 24 months  For **none HIV-exposed children** continue to breastfeed **up to 24 months** |  |
| Counsel on oral thrush | Signs and symptoms |  |
| Complementary feeding from 13-24 months | Initiate discussion when child is 5 months old about introduction of complementary foods when child turns 6 months old | Give breastmilk first  Give semi solid foods  Give vitamin A and iron rich foods |  | Child Health Passport  MNP guidelines, flipchart and counseling cards |
| Discuss with every caregiver what foods are locally available | Refer to locally available foods list in your region |  |
| Counsel how MNP should be prepared and consumed | MNP sachet to be mixed with a small portion of food. Child is fed this small portion first before offering the remaining portion of the meal |
| Initiate discussion when child is 5 months old about introduction of complementary foods when child turns 6 months old | **6 – 9 months:**  Iron and vitamin A rich foods  semi solid  3 times a day  **9-12 months:**  Iron and vitamin A rich foods  4- 5 times a day  **12-24 months:**  Iron and vitamin A rich foods  5 times a day |  |
| Counsel caregiver on feeding of the sick child | Feed the child in a responsive manner with love and attention  Continue feeding the child regularly during periods of illness and encourage intake of a variety of foods  Give sick child extra meals a day |  |

**Service delivery: Outreach and community**

**Service providers: Health facility outreach teams, HEWs, civil society organization and nongovernmental organization volunteers, extension workers from other ministries**

| **Outreach and community services** | **Service description** | **Action to be taken** | **Reference values** | **Score**  **Y/N** | **Job aid** |
| --- | --- | --- | --- | --- | --- |
|  | Assessment, Classification and referral | **Weigh** and **measure** **EVERY** child 0-59months, **plot/compute** weight-for-height, record in child health passport, **interpret growth for EVERY caregiver** | Growth curve |  | Scales, height boards and growth chart |
| **Refer all children immediately** with growth faltering for treatment and one-on-one counseling | Growth faltering means; no weight gain over two consecutive weighing /GM sessions |  | Growth chart |
| Refer to MUAC chart for procedure  Measure MUAC of **EVERY** child aged 6-59 months **EVERY** visit to the health facility  **Note: Do not use ordinary measuring tape**  *Classify malnutrition using MUAC* | **Children 6-59 months**  Normal = >12.5 cm  Moderate acute malnutrition = > 11.5cm - < 12.5 cm  Severe acute malnutrition = <11.5 cm |  | MUAC tapes  Adult MUAC chart  Entry and exit Criteria for specialized food products  ANC Pink Client card  Patient register  Edema chart |
|  | Look for bilateral pitting edema in both feet | Bilateral pitting edema is a sign of severe acute malnutrition in children. Both feet or legs are swollen and the skin stays indented when pressed with a finger |  |  |
| Prescription of specialized foods | Provide specialized food for clients who are classified as MAM or SAM | Entry and exit criteria for specialized food products |  | Entry and exit criteria for specialized food products |
| Provide Multiple Micronutrient Powders (MNP) to ALL children 6-24 months | Every child 6-24 months should be provided with MNP **throughout a period of 12 months**  **Every child eligible for MNP to receive 90 sachets to be consumed with complementary foods over a period of 6 months** |  | MNP guidelines, flipcharts and counseling cards |
| Follow up of SAM and MAM in PLW | Return to households where pregnant or lactating woman were assessed as having SAM or MAM |  |  | Counseling cards  Food Group Chart and pictures |
| Check with pregnant or lactating woman or caregiver of child if he/she went to the health facility for treatment of SAM or MAM |  |  |
| Observe specialized foods consumed and remind clients on daily consumption of specialized foods |  |  |
| Counsel on consumption of a variety of nutritious foods from the food group list | Fruits, vegetables, legumes, animal sources, fish |  |
| Ensure client is consuming the specialized food alone and NOT sharing with family members |  |  |
| Remind clients about next visit |  |  |
| Remind clients on ARV and TB drugs adherence and food/drug interactions |  |  |
| Record visit in client card |  |  | ANC/PNC Card |
| Follow up of SAM and MAM for children 0-59 month | Return to households where children 0-59 were assessed as having SAM or MAM |  |  | Child Health Passport  Counseling Cards |
| Check with caregiver of child if he/she went to the health facility for treatment of SAM or MAM |  |  |
| Breastfeeding counseling  0-6 months | Counsel on EBF, frequency of BF |  |  | Counseling cards |
| Positioning, breast health issues, barriers to breastfeeding | Cultural practices such as pre-lacteal feeding and pressures from family members |  |
| Emphasize benefits of breastfeeding for mother and baby. | Growth of baby  Health of baby  Health of mother |  |
| Discuss risks of mixed feeding in relation to PMTCT for HIV infected mothers, and risk of mixed feeding for health of baby (Diarrhea) | Increase in HIV transmission  Risks of diarrhea |  |
| Oral thrush |  |  |
| Feeding the sick child – advise mother to continue breastfeeding the infant during illness | Responsive feeding, feeding with love  An extra meal a day for the sick child |  |
| Breastfeeding and complementary feeding counseling from 6-12 months | Observe specialized foods consumed and remind caregiver on daily consumption of specialized foods |  |  | Counseling Cards |
| Ensure child is consuming the specialized food alone and NOT sharing with family members |  |  |
| Continuation of breastfeeding and introduction of complementary foods for infants from 6 months of age |  |  |
| Discuss with every caregiver what foods are locally available at the household and in the community |  |  |
| Counseling on age appropriate complementary feeding; Frequency of feeing, amount given at each meal, texture of foods, variety(of foods and encouragement of active feeding (AFATVA principle) | **6 – 9 months:**  Iron and vitamin A rich foods  semi solid  3 times a day  **9-12 months:**  Iron and vitamin A rich foods  4- 5 times a day  **12-24 months:**  Iron and vitamin A rich foods  5 times a day |  |
| Gradual cessation of breastfeeding at 12 months for HIV infected mothers | For **HIV-exposed children** continue breastfeeding from **6 months up to 12 months** while providing a nutritionally adequate diet  Transition in the 11th month for one month in preparation to cease breastfeeding  If the mother is not able to provide a nutritionally adequate diet, she should continue to breastfeed up to 24 months  For **none HIV-exposed children** continue to breastfeed **up to 24 months** |  |
| Feeding the sick child – advise the mother or caregiver to continue feeding the child regularly during periods of illness and encourage intake of a variety of foods | Responsive feeding, feeding with love  An extra meal a day for the sick child |  |
| Breastfeeding and complementary feeding counseling from 13-24 months | Reinforce continuation of breastfeeding up to 24 months for HIV uninfected infants |  |  | Counseling Cards |
| Discuss with every caregiver what foods are locally available at the household and in the community |  |  |  |
| Counseling on age appropriate complementary feeding; Frequency of feeing, amount given at each meal, texture of foods, variety of foods and encouragement of active feeding (AFATVA principle) |  |  |  |
| Administration of high dose vitamin A at 12 months and at every 6 month interval up to age 59 months |  |  |  |
| Feeding the sick child – advise the mother or caregiver to continue feeding the child regularly during periods of illness and encourage intake of a variety of foods |  |  |  |
| Reinforce importance of growth monitoring to all caregivers |  |  |  |
|  | Routine EPI and Vitamin A | Motivate caregiver to take child to health facility for routine vitamin A from 6 months and every 6 months thereafter up until age 59 months |  |  | Child Health Passport |
| ARV adherence and HIV prevention | Remind clients on the need for taking ARVs at right time and consistently to prevent/reduce possible side effects  Discuss importance of HIV prevention | ARV adherence protects the mother ARV adherence prevents HIV transmission from mother to the baby during breastfeeding  HIV prevention protects mother and baby  HIV prevention protects mother and baby |  |  |
| Record all data in patient file and client card |  |  |  |  |

**6. Practical lessons learned**

**6.1 Guidance for adaptation (local and global)**

Globally the minimum package model could be tested in a number of countries/settings to set the tone for accumulation of the body of evidence for a systems strengthening and allowing the sharing and comparisons of best practices. The framework below has been derived from the whole process outlining systems and delivery mechanisms issues to be considered as well as examples of indicators for scale up of the model (Figure 2).

**Figure 2: Framework for minimum package of integrated nutrition services: Namibia Model**

* Determine what can be done with existing staff requiring minimal additional resources
* Define combination of minimum package of services expected to make impact
* Define scale-up model (two regions for 6 months to refine approaches and scale up in all regions)
* Confidence of health workers (both facility and community) created on delivering the package of services (user-friendly, easier to deliver, availability of support materials, provision of sufficient training and support)
* Protocol established: IYCF quality improvement + nutrition counseling in key services + multiple MNPs + HEW community follow-up
* 16 contacts made from pregnancy through delivery to 24 months of age of the child
* Procurement and logistics management

**Systems**

National level partnerships

**Delivery mechanisms**

Regional level partnerships

**Indicators**

* Systems tested and refined for scale-up
* Health workers (community and facility) are knowledgeable and confident in implementing package of services
* Facility and community ownership
* Improvement in overall IYCF and maternal nutrition practices

**6.2 Strong partnerships are critical**

Development of the minimum package has been a dynamic process, which can lay claim to a number of successes—first and foremost of which are the strong partnerships led by the Government of Namibia. Partnerships were established right from the beginning of the process with key stakeholders at the national level—e.g., MOHSS programs, the maternal, infant, and young child nutrition working group, NGOs, UNICEF, and PEPFAR, etc. at the national level; and the regional and district health teams and health facility managers at the regional and district levels.

“The development of the integrated package on nutrition and the inclusion of MNPs is moving Namibia forward to fight malnutrition in children. With the implementation of this combined approach starting in pregnancy, we may be able to increase the rates of exclusive breastfeeding and improve infant and young child feeding care practices.” IYCF Focal Point Person, MOHSS

This partnership involved joint planning and joint decision-making throughout the process, which resulted in comments and feedback of high quality from the national to the facility levels. There has been positive feedback from the national officers involved in the minimum package development process, as is illustrated in the text box.

**6.3 More evidence is necessary for successful integration of services**

Led by the MOHSS, the partnership determined gaps in the existing evidence for what works and does not work for actions such as breastfeeding and inadequacies in service delivery in facilities and communities. In the same vein, the team established a strong case for integration of services as the methodology of choice for obtaining effective outcomes without creating parallel, unsustainable structures. During this time, the MOHSS was also in the process of implementing an integrated QI program in the Ohangwena region of the Namibia. The MOHSS used the opportunity to merge the development of the minimum package with the QI program and successfully developed one package that will also achieve QI objectives. With the inception of the new government HEW strategy, the minimum package will be rolled out more effectively as many community-based roles in the package will be taken over by trained HEWs.

While there is a body of evidence informing the provision of optimal service delivery, the evidence tends to be non-contextualized and include generic examples.[[21]](#footnote-21), [[22]](#footnote-22), [[23]](#footnote-23) The process of developing the minimum package in Namibia has brought to light the scarcity of contextualized evidence that is required for comprehensively improve service delivery at the level of primary health facilities and the community. As this exercise has been quite thoroughly documented, we have added to the body of evidence in scaling up such services.

**6.4 Government ownership and buy-in are necessary for long-term sustainability**

Allowing for government leadership and ownership requires considerable upfront investment of time and resources; however, this is required in the interest of long-term sustainability. In the development of the minimum package, once initial hurdles were overcome, government stakeholders actively engaged themselves at every stage of the process. An important lesson is that while national-level stakeholders are being brought on board, regional stakeholders should be brought on board simultaneously as well. For example, delays were experienced while obtaining initial buy-in from the regions because they were not involved during the conceptualization stage. These hurdles were overcome through a number targeted of workshops for regional, districts, and facility managers.

With a sparse population distributed over a vast area and large geographical distances between communities, Namibia faces high costs of providing health services—e.g., transport costs for reaching facilities and communities. This was reflected in the minimum package development process as there were financial constraints in undertaking field assessments to cover more health facilities and communities. Therefore, in comparison to more densely populated countries, Namibia may require larger injections of investment for initiatives that require a field-based component.

The minimum package matrices presented illustrate the practical requirements at the health facility and community levels. At the national and regional level, the minimum package can be adapted to the larger hospitals providing nutrition and maternal and child health services. To further strengthen the local and global guidance in the minimum package is an appreciation of the need to increase awareness—not only within the regional and national levels of the MOHSS PHC Directorate, but also in related departments such as Policy and Planning of the MOHSS.

In addition to the MOHSS, it is necessary to engage the Ministry of Finance and the National Planning Commission to improve the allocation of financial resources, as well as tertiary training institutions to embed the minimum package into pre-service training curricula for health providers. Additionally, a national champion will be critical to the process of advocacy.

1. **Conclusion and next steps**

The process of wide-scale piloting of the package in Namibia is in progress. The MOHSS is seeking cooperation from the RMTs to pilot the integration of nutrition interventions into existing health services, with a special focus on services that target pregnant and lactating women and infants and young children. Two pilot regions have been identified for implementation in selected health facilities, PHC centers, and/or clinics for a period of not less than 6 months. The selected regions will be fully supported from the national level and relevant development partner stakeholders. Training will be provided, a monitoring and evaluation framework developed, quality assurance mentors identified within health facilities, supervision systems developed, resources allocated and equipment procured where necessary.

The time required to test and validate the integration of the package is envisaged to take 1–2 weeks, which will involve a team from the national level remaining on site in the region in order to facilitate the process. This national team will work with a selected working group from the RMT and relevant health facility personnel to revise and record the process of integration. The tools, resources, and materials that are developed for this package will be tested during the validation period. Monitoring and evaluation guidance and tools will be provided and site visits during the pilot period of 6 months will be scheduled according to the needs of the RMT and the national team.

Furthermore, in recognition of the advocacy needs, tailored advocacy kits need to be developed in Namibia and subsequently in focus countries. Such efforts are required to increase multi-sectoral support for the minimum package process in transitioning from existing to improved service delivery of nutrition and maternal and child health services.

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