

# The power of Nutrition Impact and Positive Practice (NIPP) Circles

Nicki Connell<sup>a</sup>, Frank Okello<sup>b</sup> and Hatty Barthorp<sup>a</sup>

The Nutrition Impact and Positive Practice (NIPP) circle model was designed to provide alternative, community-based treatment and prevention of moderate acute malnutrition (MAM) to food-aid initiatives, including blanket supplementary feeding programmes (BSFP) and/or targeted supplementary feeding programmes (TSFP). Through both treatment and prevention of MAM, it is hoped that this will reduce the high rates of chronic malnutrition and intra-uterine growth restriction.

Traditionally BSFPs are used to prevent MAM in high risk groups and TSFPs to treat MAM. However, the efficacy of supplementary feeding programmes has been raised repeatedly over the past 25 years, and there has been little or no improvement in most Sub Saharan African countries in reducing chronic (stunting) or acute (wasting + kwashiorkor) malnutrition since 1990. New approaches are required and it is in response to this that GOAL designed the NIPP model, as a grass-roots based approach, directly tackling the underlying behavioural causes of acute and chronic malnutrition. If successfully applied, the project has the ability to help treat mild and/or moderate acute malnutrition, prevent future episodes of acute malnutrition and reduce the incidence of chronic malnutrition and low birth weight babies. Despite having a nutrition focus, the model is designed to be sensitive to pre-identified health, hygiene-sanitation and nutrition security causes of malnutrition, in addition to addressing problematic care and feeding practices.

GOAL believes that an efficient way to improve health is to use locally available, sustainable and effective approaches. In the 1970s, policy developers tested the concept that public health interventions could be designed around uncommon, beneficial health behaviours that some community members already practiced [1]. This concept, known as ‘positive deviance’, was used successfully to improve the nutritional status of children in several settings in the 1990s [2] and the NIPP model incorporates the positive deviance concept.

GOAL uses formative research to identify key causes of malnutrition within the community. To address these causes in households with undernourished or at-risk



Figure 1. GOAL Nutrition Officer supervising a beneficiary micro-garden in Baliet County, Upper Nile State (credit Frank Okello)

family members we identify existing, positive behaviours of mothers or caretakers in well-nourished but otherwise similar households. Trained NIPP Circle ‘positive deviant’ volunteers facilitate a series of fun and interactive sessions using peer-led education, prompting and reinforcing positive behaviour change, and eradicating negative practices. The model focuses on:

- promoting the use of high-energy, high-nutrient recipes through participatory cooking practices,
- stimulating behaviour change to improve household care and feeding practices, and
- promoting household food diversity through repeat-yielding micro-gardens – see Figure 1.



Figure 2. Female NIPP circle session in Ulang County, Upper Nile State showing female participants creating a song about handwashing (credit Frank Okello)

<sup>a</sup> GOAL Headquarters  
<sup>b</sup> GOAL South Sudan  
 Email: ofrank@ss.goal.ic

NIPP Circles target households with:

- moderately malnourished children and infants under 5 years,
- malnourished pregnant and lactating women,
- cured discharged children from Outpatient Therapeutic Programmes (OTP),
- anyone with chronic illness,
- mothers who have had multiple births, and
- motivated ‘others’ who want to improve their knowledge and understanding of healthy behaviours.

Women are not the sole decision-makers regarding issues of family food, household sanitation and hygiene, child care and family feeding practices, etc. although they are often the primary implementers. Men, elders, traditional healers, community leaders and religious heads

play a role in determining acceptable practices. Therefore the NIPP model targets the husbands, fathers, brothers, etc. of the female caretakers in parallel male circles, and the community members are targeted through a third circle. The aim of the sessions of the male/community members’ circles is to improve their understanding and acceptance of why the females are being taught new practices and encourage them to support females to adopt these practices. The female circle, the male circle and the community member circle form one “macro-circle”.

**Admission and discharge criteria**

Enrolment to the programme is voluntary and all participants know what enrolment entails and agree to all aspects before admission.

By August 2013 GOAL had established 26 macro-

**Table 1. Admission and discharge criteria**

Admission Criteria to Female Circles	Discharge Criteria for Female Circles
<ul style="list-style-type: none"> <li>• All children recently discharged cured from OTP</li> </ul>	<ul style="list-style-type: none"> <li>• MUAC <math>\geq 12.5</math> cm at the end of the NIPP Circle cycle and</li> <li>• Carers pass the post-test assessment (includes theory and practical elements)</li> </ul>
<p>Families with children with moderate MN:</p> <ul style="list-style-type: none"> <li>• Children 6-59mths with MUAC 11.5cm - &lt;12.5cm</li> <li>• Children with weight: height &lt;80% referred from a health facility</li> <li>• Children below 80% on their road to health chart</li> <li>• Infants 2-6mths with MUAC &lt;11cm with appetite</li> <li>• Infants &lt;2mths with visible wasting with appetite</li> </ul>	<ul style="list-style-type: none"> <li>• MUAC <math>\geq 12.5</math> cm for children 6-59 months; MUAC <math>\geq 11</math> cm for infants 2-6 months; improved nutritional status for infants &lt;2mths on road to health charts (verified at health facility) at the end of the of NIPP Circle cycle and</li> <li>• Carers pass post-test assessment (includes theory and practical elements)</li> </ul>
<ul style="list-style-type: none"> <li>• Malnourished pregnant or lactating mothers (MUAC &lt;23cm - check your country’s guidelines as the cut off may differ i.e. 21cm)</li> </ul>	<ul style="list-style-type: none"> <li>• Carers pass post-test assessment (includes theory and practical elements)</li> </ul>
<ul style="list-style-type: none"> <li>• Families with CI (including HIV cases), families with twins or multiple births, families where the primary carers show a keenness to participate to improve their public health nutrition education (PHNE) knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Carers pass the pass post-test assessment (includes theory and practical elements)</li> </ul>
<p><b>Defaulter Criteria for Female Circles</b></p> <p>If the primary carer is absent for two sessions consecutively and the team are not able to trace her, the household should be discharged from the Circle as a defaulter on the second session. Similarly, if they are able to trace her but she is not interested to return, the household should also be discharged as a defaulter on the second session.</p>	
<p><b>Non Responder Criteria for Female Circles</b></p> <p>If the relevant discharge criteria have not been attained at the end of the Circle period, the household can be discharged as a non-responder (NR). If their non-response is thought to be due to lack of adequate behaviour change, the household should ideally be readmitted into the next Circle for a repeat cycle. If however, non-response is thought to be due to an underlying clinical condition, they should be referred to the nearest health facility for assessment</p>	
<p><b>Referral Criteria to OTP or Health Facility - if referred, should be discharged from the NIPP circle</b></p> <ol style="list-style-type: none"> <li>1. Child 6-59mths with MUAC &lt;11.5cm, weight for height &lt;70% or below 70% on their road to health chart</li> <li>2. Child with bilateral pitting oedema</li> <li>3. Infant, child or adult not clinically alert and well</li> <li>4. Malnourished infant or child with no appetite</li> <li>5. Infants less than 6 months who are failing to thrive (diagnosed by plotting weight for age on road to health card)</li> <li>6. Unexplained weight loss or static weight gain at the end of the Circle cycle with regular attendance</li> </ol>	

circles: 10 in Agok, Abyei Administrative Area; 4 in Twic County, Warrap State; and 6 in Ulang County plus 6 in Baliet County, Upper Nile State.

### Key stages to establish NIPP Circles

Target communities with high levels of acute malnutrition are identified through MUAC (mid-upper arm circumference) screening and health facility GMP (Growth monitoring and promotion)/OTP records. Discussions with the Ministry of Health, key community figures and lay-representatives from the community are held on the issues surrounding malnutrition in their community and the NIPP Circle project is introduced. Once the community approves the programme, community leaders and the village health committee provides support in identifying 'positive deviant' NIPP Circle volunteers for the female, male and community member circles.

The selected NIPP Circle volunteers then attend a ten day NIPP Circle training. This is divided into:

- a preliminary phase in which trainee volunteers assume the role of beneficiaries and receive the training by GOAL/MOH support staff;
- phase two in which volunteers act as the Circle lead and practice leading mock sessions.

After the training, community sensitisation and MUAC screening are done to identify NIPP Circle beneficiaries. Once the circles are formed, female volunteers lead sessions with the primary carers and influential female elders at their homesteads, and male volunteers lead parallel sessions elsewhere targeting the male heads of the same households the female beneficiaries are from. The third volunteer, who can be either male or female, leads the community member circles.

Monthly/ bi-monthly feedback sessions are held with NIPP Circle volunteers to identify problems, and to support volunteers with possible solutions and share



Figure 3. Tippy tap with soap dispenser in a NIPP Circle beneficiary home in Twic County, Warrap State (Photo courtesy of Nicki Connell)

successes. This improves the quality of the programme and boosts motivation.

Costs are kept to a minimum to ensure the sustainability of this project with the ultimate objective being that it can be run by the MOH, a community-based organization (CBO) or a national NGO. Therefore low-cost, non-financial incentives for the volunteers are used, such as volunteer recognition days, inviting NIPP circle volunteers to GOAL-led staff trainings, and providing a certificate upon completion of one cycle of a NIPP circle. For the same reason, a starter pack of seeds is the only material item provided in the NIPP circle project to the beneficiaries and all other items required are provided by the communities and participants themselves.

### Duration and timings of circle sessions

**Female NIPP Circle** sessions run three times a week for 12 weeks for no longer than two hours per day – see Figure 2, and are divided into three parts:

**Part One of every Session: Behaviour Change Communication & Counselling.** Each session focuses on a different 'core' topic lasting approximately 45 minutes, until the topic is well understood by all participants (this may take one session or it may take a week).

Core topics are determined by crucial gaps in participants' knowledge and the behaviour change needed to improve nutritional status, as identified in the formative research by the 'barrier analysis' (BA). BAs are conducted on a limited number of prioritised 'significant' behaviours. However, in addition to these prioritised behaviours there are often a few additional practices that are thought important. Examples might include:

- awareness and signs of malnutrition;
- availability of foods at markets, benefits of home gardens and the role of traditional foods in addressing nutritional needs;
- appropriate maternal nutrition and health during pregnancy and lactation including advocacy to access micronutrient supplementation from health facilities, elimination of cultural practices that limit consumption of a nutritionally adequate diet, reducing the risk of low birth weight and so the risk of inter-generational malnutrition;
- exclusive breastfeeding up to 6 months, with practicals on infant positioning, and promotion of breastfeeding up to 2 years;
- Infant and young child feeding including timely introduction of appropriate complimentary foods, adequate number of feeds and active feeding;
- knowledge on how to best to spend household money

Table 2. Progress to Date in South Sudan (funded by ECHO, Irish Aid and Common Humanitarian Fund)

State/Area	Warrap State	Abyei Administrative Area	Upper Nile State	Upper Nile State	Comments
County/Area	Twic	Agok	Baliet	Ulang	
# Circles opened	4	10	6	6	
Date opened	May 2013	Feb – Aug 2013	June 2013	March 2013	
# Admitted	29	97	60	47	
% Graduating successfully*	96.6%	56.9%	66.7%	57.4%	As graduation is based on admitted participants achieving improved nutritional measures, attaining a certain level of knowledge and illustrating that they are using newly acquired practices at a household level, the % graduation may be low in some areas due to one of those criteria not being fulfilled during the pilot of this project.
% eating produce from the microgarden at graduation	92%	97.2%	100%	56.8%	The % in Ulang was lower than the other sites because some of the participants chose to sell the produce in the market rather than eat it in the household. Due to access to Ulang being compromised at times during the cycle, support to beneficiaries to encourage household consumption was limited. GOAL is working to address the issue of access for future circles.
% knowing how to make high-energy porridge at graduation	92.3%	100%	100%	93%	
% with handwashing facility at graduation	10.7%	82.9%	12.8%	7.1%	Uptake of handwashing facilities in Agok was higher due to the beneficiaries largely being Muslim, where handwashing is an inherent part of their lifestyle.

\*Successful graduation includes achieving a MUAC 12.5cm or greater if aged 6-59 months/a MUAC 23cm or greater when PLW, in addition to passing a post-test which includes verifying key behaviour changes through home visits.

on healthier more nutritious foods;

- the multiple roles of men in facilitating positive behaviour change.

In addition all NIPP Circles must include:

- hand-washing points – see Figure 3;
- latrines;
- assessment for viability of use of fuel efficient stoves and
- practical demonstrations of different food processing techniques, preservation and storage practices.



Figure 4. Use of food flash cards, Agok, Abyei Administrative Area (credit Frank Okello)

**Part Two: Micro-gardens for Improved Nutrition and Food Security.** This is dedicated to practical learning, around construction and maintenance of a micro-garden, lasting for around 45 minutes. Participants are led through a step-by-step process of how to construct and maintain a small-scale garden, using a model garden at the volunteer homestead. They are encouraged to replicate at home what they have learned. There are different options for household micro-gardens, including key-hole gardens, bag gardens, kitchen gardens etc., whereby teams choose the most appropriate type of garden for the context. In order to incentivise participants, groups are encouraged to visit each other's gardens, to provide inspiration and help problem solve if necessary.

**Part Three: Cooking Demonstrations.** Together the group prepares a high energy, micronutrient rich complementary food, taking no longer than 45 minutes. Usually up to 5 recipes are taught. To ensure these are fully learnt, they are repeated on a weekly basis. Sessions include discussion about the recipe, sometimes using picture drawn by participants to help them remember the ingredients; participatory food preparation, cooking and subsequent feeding of the children and/or pregnant/lactating women and the chronically ill. The purpose is to show carers how they can improve the nutritional status of their family, and thus help prevent future episodes of malnutrition. As already mentioned, all foods are provided by the participants themselves and the volunteer helps to coordinate the group, to ensure the relevant ingredients are made available for each session. Obtaining and bringing foods is practice to reinforce that idea. In order to help the volunteer coordinate the provision of different foodstuffs by participants they use Food Flash Cards (cards showing photos of different food types) – see Figure 4. The cards are used to enable Circle participants to work out the complete range of foods available in the community and then get participants to put them into appropriate food groups. This way the Circle can:

- see the complete range of food types available/ accessible to them;
- use the images to make up different recipe ideas by taking foods from different food groups and
- identify the different ingredients they will need to bring between them to make each recipe. In this way carers can see how to diversify family diets, both between meals and from day to day.

**Male NIPP Circle** sessions use a similar agenda, although the duration of each is shorter as some practical exercises are only covered in theory, whereas the women's groups need to practice and master new behaviours. Male circle members are taught how they can proactively support the women in their household to adopt new positive practices.

**Community member NIPP Circle** sessions run for around 3-7 days for approximately 2 hours each. The meetings introduce the key topics covered in Female and Male Circles. They include practical demonstrations on simple nutritional screening techniques, signs used to identify malnutrition, and the responsibilities of key individuals (including those participating) to refer 'at risk' patients to OTPs or NIPP Circles.

In Agok weights were collected for all children aged 6-59 months. Analysis of children's weights for those who graduated successfully, showed that 51.5% were growing better than they had on admission. Collection of weight as well as MUAC data will be done at all new circles.

*References*

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