

REPORT OF THE POS GIZI ASSESSMENT:

Suggestions for Expanding the Approach in Indonesia

September, 2008

Participating Institutions:

DEPKES
CARE
Catholic Relief Services
Mercy Corps
Save the Children
University of Indonesia/PDRC
World Vision International

Report Prepared By:	Data Collection Team:
Judiann McNulty, DrPH, Consultant	Siti Arifa Pujonarti, MPH, team leader
Eko Setyo Pambudi, Statistician	Asih Setiarini, Msc
	Diah M. Utari,
	Trini Sudiarti, Msi
	Nurul Naruilitasari, SKM
	Tiara Amelia, SKM
	Rita Zahara, SKM

Table of Contents

Executive Summary	4
1. Purpose of the Evaluation	6
2. Methodology of the Assessment	7
2.1 Assessment Design	7
2.2 Assessment Methodology	7
3. Assessment Findings on Effectiveness of Pos Gizi in Indonesia	8
3.1 Nutrition Status	8
3.2 Behavior Change Results	15
3.3 Community Participation	16
3.4 Improved Local Capacity	17
3.5 Rural-Urban Comparison	18
4. Analysis	19
4.1 Factors that contributed to success	19
4.2 Challenges	20
5. Recommendations	22
5.1 General Recommendations for Ensuring Quality Pos Gizi Implementation	22
5.2 Specific Recommendations for scaling up pos gizi in Indonesia	30
Annex A. Baseline Anthropometric Results	34
Annex B Essential Elements of PD/Hearth	43
Annex C Indicators and Assessment Objectives	48
Annex D. Conclusions and Recommendations from Developing a Positive Deviance Model for Successful Replication and Scale-Up	53

Table of Figures

Acronyms

PDI Positive Deviance Inquiry
Posyandu Integrated Health Post

Definitions of terms

- **Positive Deviance**

A process that identifies affordable, acceptable and sustainable practices that are already used in the community by those with limited resources. Positive deviance is not specific to nutrition practices, but can be used for many other behaviors.

- **Hearth**

An intensive behavior change intervention targeting families of children with malnutrition which includes a nutrient-dense meal to hasten recuperation of the child.

- **PD/Hearth or pos gizi**

Using the Hearth to introduce the local positive deviance practices to families of malnourished children with goals of 1) recuperation of the malnourished child, 2) families are able to sustain the child's improved nutritional status at home afterwards, and 3) preventing malnutrition of future children born into the community through permanent adoption of new behaviors by families in the community.

Throughout the remainder of this document, we will be using the Indonesian pos gizi to refer to PD/Hearth.

Executive Summary

From 2003 – 2008 USAID funded five international NGOs to implement Positive Deviance/pos gizi in Indonesia, as a part of food security programs. The five INGOs (CARE, Catholic Relief Services (CRS), Mercy Corps (MC), Save the Children US (SC), and World Vision International (WVI)) commissioned an assessment of PD/pos gizi implementation and results, in order to document lessons learned, and the successful variants of the pos gizi methodology. The assessment, conducted the first half of 2008 included the following:

- Analysis of existing data from the monitoring systems of each NGO
- Additional analysis of the baseline anthropometric data collected in 2004
- Qualitative investigation in sites where each NGO works
- A participatory analysis workshop
- Heights and weights of samples of younger siblings of former participants

Results

The overall results of the assessment show the potential for the application of a positive deviance approach, as it supports the DEPKES nutrition strategy, which is now shifting its focus towards behavior change

The positive deviance approach is beneficial in guiding the design of behavior change interventions including and in addition to, pos gizi itself. Pos gizi is a useful component of DEPKES strategy, particularly for improving infant and young child feeding practices among families with malnourished children under age two. Implementing INGOs, local NGOs, and DHO had about the same rate of success. This indicates that the GOI has the potential to continue to implement pos gizi.

Continuation of *pos gizi* is most likely to have an impact on reducing malnutrition when the methodology is carefully followed and when it is combined with strengthening the *posyandus* and added to an educational program that reaches women starting in pregnancy. Such a program promotes good infant and young child feeding practices (IYCF) including exclusive breastfeeding for about six months followed by introduction of healthy foods according to the WHO Guiding Principles for Complementary Feeding of the Breastfed Child,

Factors that made the pos gizi most effective

- Complementary activities such as water and sanitation, *desa siaga*
- De-worming prior to admission
- Frequency of home visits made by the *kaders* after the *pos gizi* session.
- *Kaders'* understanding of key concepts behind *Pos gizi*
- *Puskesmas* staff's understanding of key concepts behind *Pos gizi*
- *Puskesmas* staff believe in effectiveness of *Pos gizi*
- Community leaders understanding causes and consequences of malnutrition and their active participation
- Community supports *pos gizi* with materials or funding
- Frequency of support *kaders* received from NGO or *puskesmas*
- Quality of the menus – nutrient diversity and affordable foods

Recommendations to improve Pos Gizi implementation

- Use positive deviance approach to inform behavior change strategies that may include strategies other than *pos gizi* to promote behavior change
- Ensure the right children participate in *pos gizi*. Children with poorer nutrition status will benefit more. Before any child is enrolled ensure they receive health check and are dewormed.
- Ensure positive deviance inquiries identify strategies as well as behaviors. These must be the basis of the what is practiced at the *pos gizi*
- In the *pos gizi* prioritize the most important health messages. *Kaders* and mothers cannot manage too much information at one time
- Conducting a PDI is important. However results from PDI can be shared with other similar communities
- The *pos gizi* meal must be nutrient dense and should be carefully planned with *puskesmas* staff
- *Kaders* require both comprehensive training and support and follow up.
- Home visits are critical to help mothers put into practice what they have learned
- Ensure all members of the community are involved especially fathers and neighbors.

To scale up pos gizi in Indonesia

- Integrate positive deviance approach with existing community based health programs
- Ensure resources are available for regular monitoring and evaluation and that *kaders* and *puskesmas* staff have the necessary guidelines and checklists for supervision visits and monitoring.
- Create an intersectoral work group (DEPKES, UI, PDRC, INGOs, LNGOs)
- Create five or six standard menus based on affordable local foods that other PD foods can be easily added

1. Purpose of the Evaluation

While the concept of Positive Deviance/Hearth (*Pos gizi*) was introduced to DEPKES and USAID Indonesia approximately ten years ago, application of the methodology gained momentum in 2002 when PATH organized a training for several NGOs and some government districts. In 2004, five of the NGOs received funding through the USAID Title II program to include *pos gizi* as a key component of five-year food security programs, which end in 2008.

Table 1. Extent of Pos gizi Implementation with USAID Title II Funding

Name of NGO	Implementation Areas	Number of <i>pos gizi</i>	Total number of participants enrolled
CARE	Tangerang	188	2088
Catholic Relief Services	NTT	32	1782
Mercy Corps	DKI Jakarta	157	2692
Save the Children US	Medan	46	680
	West Java with DHO*	96	1503
World Vision International	North Jakarta, Suribaya	45	1252
TOTAL			9997

* DHO: Sukabumi, Subang, Garut, Depok, Cimahi, Cianjur, Bogor

The cumulative experience of the five NGOs in implementing the same methodology in diverse settings across Indonesia and using different models of implementation provides rich learning on which to build future expansion of the *pos gizi* methodology; as well as, indications of how best to surmount the problem of malnutrition in Indonesia.

To document the learning, the five NGOs commissioned an assessment of their *Pos gizi* work. The aim of this process, conducted between February and July, 2008, is to present guidance to DEPKES and other institutions based on a combination of quantitative results and qualitative findings. The overall purpose of the evaluation is to document lessons learned and application of the variants of the methodology which have been successful in order to inform DEPKES for future directions in application of the *pos gizi* methodology in the Indonesia context.

2. Methodology of the Assessment

2.1 Assessment Design

To assure that the assessment would meet the needs and expectations of the five different NGOs, the participating government (district and sub-district) and local NGO partners, the University of Indonesia Positive Deviance Resource Center and DEPKES, the assessment consultant facilitated a 3-day design workshop. The methodology of the workshop fully engaged all participants in discussion, decision-making, and planning.

The result of the design workshop was agreement to examine the Pos gizi experience in light of four possible aspects of success and determine which factors facilitated success. The objectives were stated as follows:

- Document the effectiveness of pos gizi in Indonesia with respect to:
 - ✓ Nutritional status
 - ✓ Behavior changes
 - ✓ Community empowerment
 - ✓ Improved local capacity
- Determine the factors, methods, or processes which contributed to effectiveness
- Document key factors and the model for future implementation as guidance for the GOI

During the design workshop, indicators were agreed upon for each of these objectives. The complete list of indicators and sources of data to measure them is included in Annex C.

2.2 Assessment Methodology

Four years ago, the NGOs agreed upon data they would all monitor and each maintained a data base which included all the children who were participating in pos gizi. The DHOs, in many cases, kept this data on paper. For this assessment each agency sent their data on a combined total of 13,337 pos gizi participants to the collaborating statistician at the University of Indonesia. The statistician cleaned the data and conducted various analyses using SPSS based on a plan developed with the assessment consultant. The analyses were run a second time after seeking clarification for a single missing variable which had resulted in excluding nearly two-thirds of the children. In the final data analysis, we were able to include 9,997 children sessions in the calculation of weight gain during the 10 to 12 day pos gizi session and 4,847 in the

calculation for graduation, that is, gain of 400g or more at the end of one month.

Additionally, the NGOs contributed the baseline data sets from the survey they conducted in 2004. This included heights and weights for a total of 6,343 children between 0 and 60 months of age. Only World Vision International has completed the final survey to compare with the baseline and their results were used to assess behavior change.

The final component of quantitative data collection is the study of younger siblings of former pos gizi participants. Two of the NGOs were able to identify the communities where they had implemented starting in 2004, and through the posyandu, find families who had participated in the first year who now have another child. These weights and heights of these children are compared with those of matched control communities.

Qualitative data collection was carried out by a team from the University of Indonesia faculty of Public Health. The process included observation of pos gizi, review of kader records, group interviews with mothers and fathers who had participated in addition to in-depth interviews with community leaders, puskesmas staff, and kaders in 36 pos gizi sites. The assessment consultant and the UI team synthesized the data and did some initial analysis.

After the analysis workshop where staff from the NGOs and DHOs had an opportunity to further analyze the qualitative results and draw some conclusions, the assessment consultant completed analysis and verified findings. Qualitative and quantitative data was triangulated in a number of ways to reach the conclusions presented here.

3. Assessment Findings on Effectiveness of Pos Gizi in Indonesia

3.1 Nutrition Status

Nutrition Status and Rehabilitation

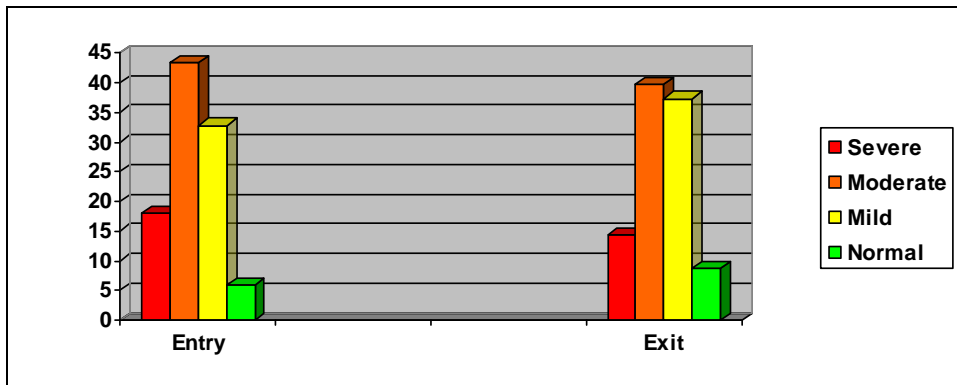
To quantify success in rehabilitating malnourished children, we used the international monitoring guidelines for PD/Hearth that suggest a 200g weight gain during the ten to twelve day session as minimum for success in rehabilitating a malnourished child with a continued gain of another 200g during the following two weeks at home. This would total 400g as the minimum necessary for “catch up growth” in order to “graduate” from *pos gizi*. While it is possible to use other criteria such as moving up on level on a growth chart, and some of the NGOs did apply the latter

criteria, for purposes of standardization, we have chosen to use 200g at the end of the session and 400g at the end of one month as the minimal standards for comparison.

Analysis of 9,997 cases for which the monitoring data bases provided weights on Day 1 (admission) and Day 10 (exit), 59.6% gained 200g. Of the 4,847 participants who were weighed again at the end of the month, 45 percent had gained the recommended 400g. This ranged from 35.6% to 53.9% between the different implementers¹, but this difference was not statistically significant. There was much wider variation between communities implemented by the same institution. Some communities achieved as much as 92% of children gaining 400g while others achieved only 21%. These wide variations enabled the assessment team to discern factors for success in spite of confounding factors such as implementer, location, style and length of implementation, etc.

Chart 1 clearly illustrates that after 10 days of pos gizi participation, there was a reduction in the percent of children with severe and moderate malnutrition and increases in the number of children with mild or no malnutrition. This shows many children moved from severe or moderate to mild or normal status.

Chart 1: Change in Nutritional Status by WHO Standards after 10 - 12 days of pos gizi participation



Sustained Nutritional Status and Prevention Among Younger Siblings

¹ Implementers refers to the five NGOs and to the DHOs of seven districts of West Java.

The data presented above all pertain to the first objective of *pos gizi*, which is to rehabilitate malnourished children. The second objective states that families will be able to sustain the improved nutritional status at home. The protocol agreed upon by the NGOs was to monitor weights of *Pos gizi* participants at 3 months and six months after they left the program. While the NGOs had difficulty tracking children, data exists for 1389 children weighed at three months. Allowing for the 400g of catch up growth plus the normal monthly expected increment shown on the WHO Growth Standards, only 15% of these children sustained their nutritional status for three months after participation in *pos gizi*.

Prevention of Malnutrition

The third objective of *Pos gizi* is to prevent malnutrition among future children born into the community, specifically into the families who participated in *pos gizi*. To assess this, two of the implementers have selected communities where they implemented *Pos gizi* two to five years ago and identified families who participated then and now have a younger child. Both the younger child and the original participant were weighed and weights compared to the WHO Growth Standards. To control for other factors which have also impacted the communities in the intervening years, a control group of children were selected from communities matched for socio-economic conditions. These children were matched to the participants and their siblings by age and sex. The results of this study will follow in an addendum to this report.

Nutritional Status at time of entry into Pos Gizi

In 2007 WHO issued new growth standards. Although adopted by Indonesia, the growth monitoring according to the new standard has not yet rolled out across Indonesia. Therefore, for the purposes of this program NGOs and the GOI relied on the existing Indonesia growth chart. It is however, useful to analyze the results of *pos gizi* implementation in relation to the revised WHO growth standards.

According to the new WHO growth standards, 5.9% of children enrolled in *pos gizi* would be classified as normal, and 29.8% of children as mild. Since these children (35.7% of all participants) had no physiological need for “catch up growth” it is not surprising that they showed no change in nutritional status. However, since the new growth standards were not in use, many of these children were asked to repeat *pos gizi* sessions. Given that there was no need for catch up growth this was an unnecessary investment of time and resources for both the mother and the implementers.

Table 2: Weight Gain during 10 Days Comparison to Nutritional Status at Entry

		Number and percent who gained weight			
Nutritional Status on Day One According to WHO Growth Standards		< 200g	200-299	>=400	Total N
	Severe (<-3z)	620 (35,8%)	468 (27.0)	646 (37,2%)	1734
	Moderate (-3 thru -2.01)	1621 (38,6%)	1214 (28.9)	1360 (32,4%)	4195
	Mild (-2 thru -1.01)	1380 (43,0%)	877 (27.3%)	956 (29,8%)	3213
Total		3621	1435	2962	9142

P<.0001

Note: Only malnourished children were selected for this analysis thus the total number of children included is less than the total number of participants.

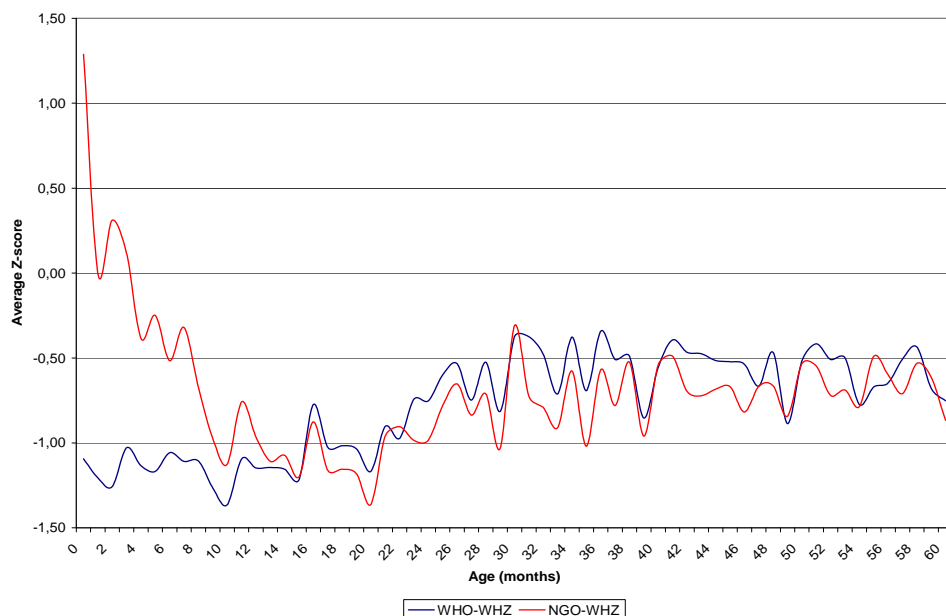
The international technical advisors for pos gizi have often pondered whether the program is more effective for moderately and severely malnourished children than for mildly malnourished children. According to the pos gizi monitoring data a greater percentage of children who entered with poorer nutritional status gained 400g or more. Nearly half of the mildly malnourished children did not even gain 200g during the month. This data shows that pos gizi may have been more effective for children starting with poorer nutritional status.

In Vietnam (one of the first and most successful examples of PD/Hearth) one of the factors found to predict success in the pos gizi was nutritional status at the time of entry into the PD/Hearth. This holds true in the data from this Indonesia program, where increased weight gain was significantly correlated with poorer nutritional status.

Timing of growth faltering

Comparison of the baseline levels of malnutrition each NGO encountered in their target area in 2004 are shown in Annex A along with discussion. With the large size of the combined baseline samples, we are able to see that, by the new WHO Growth Standards for weight for height, malnutrition in Indonesia begins from birth. This is shown by the blue line below and indicates the need to begin intervention before birth of the child.

Chart 2: Weight for Height (wasting) of Children from Baseline Survey Data



Age-related rehabilitation rates

Implementing NGOs and the GOI inquired whether the weight gain criteria should be different for older children when weight gain normally slows to about 100g per month. In looking at the monitoring data, we see that the children over two years of age were just as likely to gain 400g in one month as those under two years. Therefore, the data suggest that *pos gizi* is just as effective for older children and that the graduation criteria of 400g of catch up growth applies equally to children older than one year. However, as pointed out in the *Lancet* series on nutrition, rapid weight gain in children over 24 months, particularly if they are stunted, may lead to longer-term adverse health consequences, which reinforces the concept that *pos gizi* is most appropriate to address malnutrition in children under two.

Table 3: Weight gain during pos gizi by age

Weight gain during 10 days of pos gizi	Age group		
	< 12 mos	12-23.99 mos	>=24 months
200g	56(30.8%)	516 (32.7)	1091 (35.4%)
	45(24.7%)	342	615 (19.9%)

200-300g		(21.6)	
>=400 g	81(44.5%)	722 (45.7)	1379 (44.7%)
Total	182	1435	2962

Selected Cases : Children who had first follow up measurement result and <=12 months years old, 21-40 days interval between day1 - 1st follow up

Summary of Findings Related to Nutritional Status and Age

Pos Gizi implementers (both government and NGOs) had moderate success in rehabilitating malnourished children in the short-term especially more severely malnourished children. According to available data, gains were not always sustained after three months. Following current international recommendations, it is advisable to limit the rehabilitative aspects of pos gizi to children under two years of age. To understand when pos gizi was more successful, a detailed qualitative assessment was conducted, the results of which are described in the following sections.

3.2 Behavior Change Results

The five DAP partners created a standardized set of behavioral indicators which were measured in the 2004 baseline. To date, only World Vision International has completed their final survey and can compare results to the baseline. The other NGOs will add their results as soon as they are available. The following table shows results for key indicators obtained by World Vision International in their target areas of North Jakarta and Surabaya.

Indicator	Baseline %	Final %
% of children 6-9 months receiving recommended number of feeds/day		89% Jakarta: 90.6% Surabaya: 87.2%
% of children 0 to 5.99 months exclusively breastfed	15	30.9
Average number of food groups consumed by children 6-23.99 months in the last 24 hours	Jakarta: 3.8 (out of 8 food groups) Surabaya: 2.9 (out of 8 food groups)	Jakarta: 3.8 (out of 8 food groups) Surabaya: 3.7 (out of 8 food groups)
Average number of food groups consumed by children 24 -59.99 months in the last 24 hours	Jakarta: 4.1 (out of 8 food groups) Surabaya: 4.3 (out of 8 food groups)	Jakarta: 5.1 (out of 8 food groups) Surabaya: 5.0 (out of 8 food groups)
Good young child feeding practices prevalence score (scoring 6 on score)		
% of caregivers who report having used soap for hand-washing at least 2 critical times in the past 24 hours	55.3% Jakarta: 48.9% Surabaya: 56.9%	63.3% Jakarta: 68.5% Surabaya: 58.1%
Increased feeding after illness		

3.3 Community Participation

Not only did the assessment find an association between good community participation and success of a *pos gizi*, the NGOs felt that community participation was one of their successes. In nearly every community visited by the assessment team, community leaders were aware of *pos gizi*, and were able to explain what happens at *pos gizi*. Many community leaders said they receive reports from *kaders* on the numbers of malnourished children and the progress of the *pos gizi*.

Where community leaders better understand the purpose of *pos gizi* and could articulate consequences of malnutrition, there was also substantial material support from individual leaders and other individuals in the community. For example, in one community of Garut, the village chief was donating 5 kg of rice to each *pos gizi* session and another community member was donating vegetables.

Local government contributed significant funding in some communities or other materials for the *pos gizi*. Community leaders helped orient the families and some paid regular visits to the *posyandu* or *pos gizi*. Such support from community leaders only occurred where the leaders understand the causes and consequences of malnutrition and something about the level of malnutrition in their community.

Overall, among communities visited by the assessment team, there was evidence through donations and verbal commitment that the community leaders have taken on a sense of responsibility towards improving nutritional status of children within their community. Several mentioned that they are happy to now be engaged in the desa siaga program, as well.

The assessment team found many examples of non-elected leaders being aware of and involved with *pos gizi* and the *posyandu*. In one Jakarta community, for example, a retired school teacher helps with the record-keeping. In some communities, religious leaders have played a major role in encouraging attendance. In Depok, a neighbor of the family which hosts the *pos gizi* shares his water supply for the *pos gizi*. It appeared that there might be many more opportunities for such support, if *kaders* would do a little more promotion.

3.4 Improved Local Capacity

Kaders

Pos gizi implementers were hopeful that participation in *pos gizi* would increase local capacity, specifically skills of *kaders* to independently implement *pos gizi*. During interviews and focus groups *kaders* could point out many ways in which their skills

All *kaders* interviewed said it is possible for poor families to have well-nourished children.

have been enhanced. Many stated their feeling that they are much better able to counsel mothers now, and they expressed increased understanding of nutrition, food preparation, and child health issues.

The assessment team, however, did not meet any *kaders* who are implementing *pos gizi* on their own without support of an NGO or DHO. When asked whether they could implement *pos gizi* on their own with community support, most *kaders* said they don't have the confidence in themselves, and couldn't handle problems that might arise. Yet, *pos gizi* *kaders* do feel a stronger link to community leaders and many said they would be willing to request material support for future activities.

Puskesmas Staff

The greatest capacity building occurred among *puskesmas* staff. Nutrition staff and those working directly with the *pos gizi* said they learned more about existing community practices, as well as a great deal about nutritional value of foods through menu planning. They explained they have gained

Many *puskesmas* staff said they now understand that the key to improving nutritional status is in changing mothers' behaviors, not just providing food.

more skills on growth monitoring and the relationship of illness to nutritional state. Virtually all nutrition staff, and many other puskesmas staff clearly understand the concept of positive deviance, as well as how to conduct a PDI. It was evident that puskesmas and DHO staff, who were interviewed, have found that their participation in pos gizi has provided new energy and motivation for their work.

3.5 Rural-Urban Comparison

Initial analysis showed that a greater percentage of children in NTT, a very rural area, gained 400g or more at one month than did children in urban or semi-urban areas. This led us to an initial, but incorrect, premise that pos gizi may be more successful in rural areas. More detailed analysis and review of the qualitative findings cast doubt on this. First, the difference in “graduation rates” **was not statistically significant**. Second, there were significant differences in the nutritional status of children entering the program and at baseline; with much higher levels of moderate and severe malnutrition in NTT, as shown in the table below. From the data it seems that it is difference in nutrition status, not the rural vs. urban setting that explains the differences between the urban and rural setting. We will discuss other possible factors for the differences between NTT and the urban areas later in this document.

Nutrition status, not the rural or urban context explains the difference in pos gizi results. Increased weight gain was significantly correlated with poor nutrition status.

4. Analysis

4.1 Factors that contributed to success

To determine factors which were most closely aligned with success in terms of adequate weight gain resulting from the *Pos gizi* intervention, we compared communities with a high percentage of children gaining 400g with those who had very limited success. For each *pos gizi*, we used information gathered from the extensive qualitative interviews and observations along with details of implementation supplied by the NGOs and DHOs to make the comparison.

Key Factors Associated with Success

- ↪ Complementary activities such as water and sanitation, *desa siaga*
- ↪ De-worming prior to admission
- ↪ Frequency of home visits made by the *kaders* after the *pos gizi* session.
- ↪ *Kaders'* understanding of key concepts behind *Pos gizi*
- ↪ *Puskesmas* staff's understanding of key concepts behind *Pos gizi*
- ↪ *Puskesmas* staff believe in effectiveness of *Pos gizi*
- ↪ Community leaders understanding causes and consequences of malnutrition
- ↪ Community supports *pos gizi* with materials or funding
- ↪ Frequency of support *kaders* received from NGO or *puskesmas*

Surprisingly, some factors did not appear make a difference, including whether or not a positive deviance inquiry (PDI) was conducted, the length of *kader* training, or the attitudes of the mothers towards prioritizing their child's well-being. In the case of the PDI, it was not possible for this assessment to discern whether the reason having done a PDI did not make a difference was actually due to quality of the PDI and the inability to use results in the *pos gizi*. Also, it was not possible for the assessment team to observe quality of *kader* training.

All of the factors identified as associated with success are mentioned directly or indirectly on the CORE Group list of Essential Elements for PD/Hearth, which is found in Annex B. This document, developed from a composite of experiences around the world, is a useful tool for assessing the quality of implementation of *pos gizi*. Essential elements that were being done well by the NGOs include holding *pos gizi* for 10 or 12 consecutive days, limiting size of groups, good attendance of the mothers, and excellent community involvement in many cases.

4.2 Challenges

Several of the findings from the monitoring data point to the need to strengthen the implementation process. The following chart lists key findings, their implications and possible reasons found in the qualitative assessment which may be the reasons for the findings.

Finding	Likely Cause	Potential Reasons
79% of the children for whom we have data did not sustain weight gain at 3 months.	<ul style="list-style-type: none"> ✓ Mothers didn't learn what to do differently at home to feed and care for the child. ✓ Support (physical or social) was not in place to ensure the behaviors could be practiced at home. 	<ul style="list-style-type: none"> ✓ The PDI did not discern the key PD behaviors and strategies, or these weren't taught to the mothers. ✓ Kaders tried to transmit too many other messages to mothers who can't make so many changes at one time. ✓ Mothers did not receive enough home visits to assure they were able to change practices or put into practice at home. ✓ Mothers lacked access to infrastructure needed to practice behavior such as a home based hand washing station ✓ Mothers lacked support from family and/or neighbors to practice new behaviors such as avoiding unhealthy junk food
41.4% of all children did not gain even the 200g during the <i>pos gizi</i> session of 10 days.	The children were not consuming or metabolizing the many extra nutrients and calories needed to achieve catch-up growth.	<ul style="list-style-type: none"> ✓ Menus were not planned well enough to assure the high dosage of nutrients needed to catch up weight gain. ✓ Some children were normal or only mildly malnourished so didn't gain weight. ✓ Children weren't hungry and didn't eat all the food at the <i>pos gizi</i>. ✓ Families were feeding the child less at home because they got the PG meal. ✓ Some children may have an underlying illness such as TB.
On average, the children in NTT gained 327g during the <i>pos</i>	Since some urban <i>pos gizi</i> children also gained a similar amount, the difference is not urban-rural.	There are some different cultural practices in NTT. For example, many children eat sitting with the family.

<i>gizi</i> compared to an average of 215g in all the other areas. This is statistically significant.	Only some of this big difference can be attributed to the poorer nutritional status of NTT children when they started <i>pos gizi</i> .	NTT children do not have much access to purchased snack foods which fill them up without nutrients and take away their desire to eat healthy foods.
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5. Recommendations

Two sets of recommendations are provided within this section.

- General recommendations for ensuring quality pos gizi implementation
- Specific recommendations for DEPKES for scale up and integration of PD in Indonesia

5. 1 General Recommendations for Ensuring Quality Pos Gizi Implementation

Further application of *pos gizi* in Indonesia, either by NGOs or by the government, must aim to sustainably reduce levels of malnutrition and prevent future malnutrition. Based on the factors associated with success, key findings and the Essential Elements, the following suggestions are given to strengthen application of *Pos gizi* in Indonesia.

‘Positive Deviance’ doesn’t have to mean pos gizi, it can be used in many other ways.

The positive deviance approach can be used to identify behavior change strategies other than *pos gizi*. For example, if the results of the PDI reveal that PD children eat healthy snacks because their mothers limit their snack options to either tempe, eggs or fruit then the community can conduct a campaign to increase social support for healthy snacking by promoting the message ‘good mothers give their children healthy snacks’ on a poster with pictures of locally available healthy snacks.

The Positive Deviance and Hearth process can be divided into two phases – the Positive Deviance Inquiry phase and the intervention phase. How an organization chooses to use the results of the PDI can vary.

Phase One: Positive Deviance Inquiry

1. Define the problem to be addressed. In the case of pos gizi, the problem identified was malnutrition.
2. Determine the current common practices and describe the local situation.
3. Discover what families with well nourished children do differently to enable their child to stay healthy despite impoverished circumstances (Positive Deviance Inquiry).

Phase Two: Intervention to change behavior

4. Design an intervention to utilize the results of the Positive Deviance Inquiry to encourage others in the community to **change behavior**. In the case of pos gizi, the intervention designed was the pos gizi itself.
5. Discern the effectiveness of the intervention through monitoring and evaluation.
6. Disseminate the results and messages to others in the community and neighboring communities.

Other potential uses of Positive Deviance Inquiry results.

<i>PDI Result</i>	<i>Potential intervention</i>
Child washes hands with soap before eating	+Create home-based hand washing stations with soap +Facilitate community hand washing events +Teach hand washing song to children at school, posyandu
Mother selects specific snacks for child to limit consumption of junk food	+Develop a list of healthy snacks in the community +Host a song competition for community members to advertise the healthy snacks in the community +Develop posters with a list of healthy snacks so mothers know which snacks are healthy
Caregiver provides eggs or tempe to child each day	+Train street vendors how to prepare menus that include more eggs and tempe that are appetizing for children +Promote street vendors who cook PD foods through songs, campaigns, posters

Ensure the right children are referred and admitted to pos gizi. Children who are moderately or severely underweight benefit the most from pos gizi.

After the posyandu identifies a child with low weight for age additional steps should be taken.

Measure the child's height to determine if weight is normal for height.

- If normal, this is an indication that the child does not need to be enrolled in pos gizi.
- If the child does not have adequate weight for height or weight for age below -2 S, s/he should be enrolled in pos gizi.
- If the child has moderate or severe wasting, refer the child for a complete medical check-up, particularly focusing on TB, malaria, repeated diarrhea, or a chronic condition. Start treatment for the condition and enroll the child in the next pos gizi.

Ensure every child is dewormed and receives a health check before starting pos gizi

All children should be de-wormed prior to enrolling. Where this was done in Indonesia, children gained more weight quickly.

Refer children with special eating problems to specialists; do not lead mothers to think PG alone will solve the problem.

Focus the PDI are identifying strategies not just behaviors

The PDI needs to include looking for strategies, not just behaviors. For example, the PDI might find that some very poor families of well-nourished children feed the child an egg every second day. The question is, "How does that very poor family manage to get the eggs?" Do they trade something to a neighbor who has chickens? Do they give up buying snacks in order to have money for the eggs?

Kaders will need to find and share the strategy not just the message of feeding the child eggs frequently.

Prioritize the most important health messages and only those directly related to improving nutritional status

There are many good health behaviors, but the pos gizi must focus only on those directly related to improving nutritional status. Mothers can absorb only a limited number of messages during the pos gizi. Therefore, kaders must select the most important nutrition and health practices to share and demonstrate during the pos gizi session. Kaders and puskesmas staff can

create other opportunities to teach all mothers in the community the many other good health behaviors.

PD practices and strategies identified through the PDI have to become the key content of what is taught through the pos gizi

The interviews with mothers showed that they are being taught many practices and messages during the pos gizi. While they can repeat what they heard, they are putting very little into practice and they could not distinguish which of the practices are already being done by other poor families (the PD practices). The PD practices and strategies identified through the PDI have to become the key content of what is taught through the pos gizi.

Select PD families that are the poorest of the poor who have well-nourished children

Selection of the PD families is important. PD families are the poorest of the poor, who have well-nourished children. Kaders need more guidance on how to determine which families are truly the poorest, from which they will select the PD families.

In addition to PD behaviors and strategies, the pos gizi should include behaviors that can be practiced by all mothers everyday of the pos gizi

As mentioned earlier, mothers can learn only a few new ideas or practices at one time. Besides the PD behaviors and strategies, the pos gizi will include some fundamental practices. These include: hand washing, cutting the nails, having the child sit still to eat, active feeding, continued breastfeeding, and safe food handling. These are all behaviors that can be practiced by all mothers every day of the pos gizi.

Conducting a PDI is an important step for both kaders and communities to learn about behaviors, strategies and affordable foods. However, results from one PDI can be shared with other similar communities or RWs

In the RWs and communities, which are very similar in conditions, there may not be a need to conduct a PDI in every single community. Instead, one or two kaders from several RWs or communities could work together to conduct the PDI in one location, using the results for others. At least some of the kaders need the learning experience of doing the PDI, but a select few can share what they learned or discovered with the other kaders in their neighborhood. While conducting the PDI, kaders can learn what foods the very poor families have available or are able to purchase. This is critical knowledge for planning the menus.

The pos gizi menu is a special nutrient-dense meal (a dosage of nutrition) meant to hasten recovery of the malnourished child. It cannot be left to the kaders and mothers to plan as they wish.

As mentioned previously, over a third of the participants did not gain 200g during the pos gizi session. This likely indicates that the menus weren't adequate, and review of the menus further revealed that many did not contain adequate diversity of foods. Furthermore, observations of the pos gizi showed that kaders were no longer following the originally-planned menus.

The Essential Elements for pos gizi in Annex B lists the specific amounts of nutrients that must be included in the menu. The portion the child will eat must be planned carefully and the child must eat all that is given. The puskesmas nutritionists will need training and access to a list of the nutrient content of common foods in order to assist with menu planning. Alternatively, the DHO may want to come up with 4 different menus with the basic nutritional content and each pos gizi will only need to add other foods that were identified in the PDI.

The foods included in the menus must be affordable by the poorest families.

If the mothers say they cannot afford to bring contributions, either the foods in the menu are too expensive or, they need to discuss strategies of where to find the foods at an affordable price. This is part of the pos gizi learning and a reason for requiring that mothers bring contributions. Another possible reason for this response is that menus are being cooked for more than just the participants. To keep the cost down, explore how mothers and health volunteers plan and prepare menus.

Kaders require a comprehensive training program

Recommended training topics include:

- Anthropometrics – meaning of measurements and how to determine malnutrition.
- Adult learning skills, facilitation skills
- Counseling skills for posyandu and for conducting home visits – problem solving with mothers
- IYCF – FADVA – Frequency, amount, density, utilization, active feeding, variety in menus at home, portion size, using local foods and PD foods, ways to encourage children to eat when they don't want to, feeding during illness, healthy snacks
- Evaluation techniques
- Hand washing and hygiene promotion

- Calculating menu for pos gizi
- Current PD training package
- Feasibility studies
- Family or Care-giver Daily activities – appropriate Hearth scheduling
- Market survey
- Mapping area vs. mapping malnourished children
- Wealth ranking , identifying positive deviants
- How to determine current health and nutrition practices in the community
- PDI with analysis of how to develop good Hearth sessions based on PD findings & PD strategies.
- Home visit training
- How to do home visits
- Use of a form that will be used to remind kader what to observe, help with
- Simple counseling based on solving problems faced by family and finding strategies
- Referral system and following up on referrals – whether done, and completing treatment
- PD Hearth Concepts
- Simple formative research – observation, group discussion/interviews
- How to give positive support and guidance to mothers and lead informal discussion of topics during sessions
- How to develop local, creative messages and deliver them a posyandu, warung or
- deliver messages at religious group meetings/pengajian, and Arisan
- How to prepare a simple proposal for funding

Ensure kaders have understanding of the causes of malnutrition and related health behaviors.

Kaders need a much better understanding of the causes of malnutrition and of related health behaviors before they can conduct a good PDI and analyze its results. Table xx illustrates how a lack of knowledge of the immediate causes of malnutrition creates confusion when prioritizing health messages to promote during Pos Gizi. The current tool for the PDI must be refined to capture only behaviors directly related to nutritional status.

Table xx: Some Examples of PD Behaviors Relevant to Nutritional Status

Behaviors directly related to good nutrition	Good behaviors that are not related
1. Washing the child's hands before eating 2. Feeding the child fish every day 3. Mother makes snacks instead of buying 4. Child always eats vegetables with other food	1. Brushing teeth every day 2. Bathing the child twice a day 3. Child takes a nap every day 4. Father plays with the child

Kaders need to understand why families are asked to bring contributions.

Contributions have posed a significant problem for mothers and kaders. Kaders need to have a clearer understanding of why the mothers are asked to bring contributions. Few could explain this when they were interviewed. If the menus are planned just for feeding the children certain portions, less amount of contribution will be needed. Also, mothers do not have to bring all of the amount of each food. They should bring at least a little of each kind of food on different days during the pos gizi. For example, if mothers bring five eggs one day, the other five eggs needed can come from community contribution funds.

Kaders need to fully understand the concepts underlying positive deviance/pos gizi

The assessment found there was no difference in the length of *kader* training and how effective the *pos gizi* was. The difference is in how well *kaders* understand the concepts underlying the PD/Hearth methodology. *Kaders* have to understand WHY the menus must be nutrient dense, WHY the mothers must bring a contribution, WHY the home visits are necessary, etc. *Kaders* also need to learn more about nutrition and working with mothers before they start PD/Hearth training.

Kaders need more training in understanding why they need to make home visits and how to conduct the home visits including what to observe and how to help mothers come up with solutions to their difficulties.

For example, if a mother says her child won't eat as much at home as at the *pos gizi*, then, the *kader* needs to help her figure out why the child eats less and what to do to get the child to eat more. Role playing during training would be helpful for *kaders*.

Kaders should conduct home visits every two or three days after the end of the pos gizi, and help mothers to put into practice at home what they learned.

One of the key factors of success is home visits. Kaders should conduct home visits Kaders are to visit the mothers at home every two or three days after the *pos gizi* session for two more weeks. The assessment showed that this is one of the key factors in success of a *pos gizi*. During these visits, the *kaders* need to observe that the mothers are practicing what they learned at the *pos gizi*. If not, the *kader* needs to ask the mother why she is not able to do these things at home. Together they discuss solutions to the reasons the mother gives.

Graduating children quickly, providing follow-up at home, and urging the mother to keep up the practices so that her child will have gained more by the next posyandu inspires better response from the mothers than having to repeat pos gizi.

The monitoring data showed that many children gained 400g at one month or even during the *pos gizi* session, but were still not allowed to graduate because they did not achieve “normal” status on the growth chart or meet some other criteria. When they were asked to repeat, their mothers felt like they had failed and lost their motivation. When interviewed by the assessment team, mothers said they learned the most in the first *pos gizi* they attended. Some said the second *pos gizi* was good reinforcement of the learning, but subsequent sessions did not teach them anything new.

Training kaders is not enough. Mentoring, support and supervision from either NGO or puskesmas staff is essential.

Training is not enough to assure that *kaders* have the capacity to implement PD/Hearth and other activities with the community. The assessment found that the frequency of mentoring and problem solving support they received from either NGO or *puskesmas* staff was very important in their ability to conduct a successful *pos gizi*. Staff should plan to make almost daily visits to the *pos gizi* when it is first starting. The staff who visit them also need a clear understanding of all the PD/Hearth concepts to reinforce the knowledge and understanding of the *kaders* and help them solve problems.

Puskesmas staff may need a supervision format which includes a checklist of the 14 Essential Elements and details of the organization and flow of the *pos gizi*, as well as specific skills *kaders* should be employing.

Develop a check list and other supervision tools for puskesmas staff

Puskesmas staff will need a supervision check list based on 14 Essential Elements. They should visit every *pos gizi* regardless of how experienced the *kaders* to keep them motivated and assure they are not taking short-cuts with the method.

They will need a more detailed check list for supervision during start-up to assess *kader* skills during preparation, during the *pos gizi* session and during home visits. These checklists should be reviewed with the *kaders* immediately after the session with positive feedback and discussion of how to strengthen their performance. Since staff cannot accompany *kaders* on all home visits, they may need to meet with them after a week to discuss how the home visits are going and to help overcome difficulties.

For each and every *pos gizi*, *puskesmas* staff will expect *kaders* to record and turn in weights (1st and 10th day as well as one month follow up) and meet with them to discuss home visits, maybe have them report on how many home visits and what was discussed. *Kaders* may need a form for reporting on home visits. *Puskesmas* staff can analyze the results of the 10-day and one-month weighing

with the *kaders* to determine which children need more support, which ones need referral, and which ones graduate. These decisions should also be recorded. Using the data on weights will also help *puskesmas* determine if there is some problem with implementation. For example, if many children do not gain 200g during the 10-day session, then, there may be a problem with the menu quality, families not feeding children at home, etc.

Ensure all members of the community, especially fathers and neighbors have the same understanding of malnutrition and recognize that poor families can have well-nourished children

Knowledge of the *pos gizi* and malnutrition was often communicated only to leaders and to the mothers of malnourished children. If all members of the community, especially fathers and neighbors have the same understanding of the causes and consequences of malnutrition, issues in their particular community, and recognition that poor families can have well-nourished children, there will be more generalized support for mothers to change behaviors or adopt new practices. In most cases, *kaders* met with mothers to invite them to participate in *pos gizi*, but only rarely did they also meet with the father to explain *pos gizi*.

Adapt approach to the urban environment

Implementing *pos gizi* in urban Indonesia presents some special challenges. One of these is that some families do not cook at home but rely on street food from vendors. If this is prevalent in a community, the *pos gizi* may focus mostly on helping families learn to make healthy selections from the food offered by vendors, with very little time at *pos gizi* actually spent on cooking.

A bigger concern in the urban settings is the frequent snacking on “junk food”. Children are so full of the snacks that they have no appetite for healthy food. Some of the PDIs clearly found that PD families either did not give snack food at all, or they made the snacks at home. Mercy Corps commissioned a study which examined why the use of snacks is so pervasive and why urban parents are unwilling to deny their children purchased snacks. This study is attached in Annex D. The study report recommends changing this behavior by changing attitudes of everyone in the community about accepting “junk food”. Urban parents do tell their children that running into the traffic is dangerous or going too close to the river, hence, they need to see that denying their children junk food is also for their best interest.

5.2 Specific Recommendations for scaling up *pos gizi* in Indonesia

To ensure high quality implementation of pos gizi the recommendations in the preceding section should be incorporated into any pos gizi program. The recommendations presented here specifically pertain to scaling up pos gizi in Indonesia.

Integrate the positive deviance concept into existing programs including RW/Desa Siaga, posyandu revitalization, and programs for vitamin A distribution and immunization.

Both positive deviance and pos gizi have good potential as pieces of the overall government strategy to improve maternal-child health and nutrition. Pos gizi, in particular should be implemented in conjunction with a more complete set of activities at the community level, as is being proposed under RW/Desa Siaga. CARE, Save the Children and World Vision, have created models for this, using pos gizi in conjunction with other activities to strengthen the posyandus and enable the kaders to work with women from pregnancy through the first year or two of the child's life to promote optimal health and nutrition behaviors. Mercy Corps is also developing a model for RW Siaga.

DEPKES may want to consider the following strategy when integrating pos gizi into other community activities:

- Work with kaders to increase attendance at posyandu to assure that all children under two years of age are weighed every month.
- Offer group education to all pregnant women to emphasize good nutrition during pregnancy and to promote exclusive breastfeeding for six months.
- Train kaders and puskesmas in IYCF, disease prevention and treatment best practices (most direct causes) and the related underlying causes.
- Identify which of these behaviors are not being widely practiced in the community now.
- Try to understand the barriers to practicing these behaviors.
- Find families with healthy children and ask about whether they practice the uncommon behaviors identified in step 2. If they do, ask their strategies.
- Identify what support is needed to reduce the barriers to change and work with community to address it.
- Those behaviors that lend themselves to group practice are emphasized during pos gizi.
- Other messages/activities are also designed in order to promote the good behaviors among all families in the community.
- Conduct one pos gizi per quarter or 2 per year (immediately following the Vitamin A distribution when posyandu attendance is high).
- Conduct community or mass media campaigns in urban areas to decrease use of junk food snacks.

‘Positive Deviance’ doesn’t have to mean pos gizi, it can be used in many other ways.

The positive deviance approach can be used to identify behavior change strategies other than pos gizi. For example, if the results of the PDI reveal that PD children eat healthy snacks because their mothers limit their snack options to either tempe, eggs or fruit then the community can conduct a campaign to increase social support for healthy snacking by promoting the message ‘good mothers give their children healthy snacks’ on a poster with pictures of locally available healthy snacks.

Evaluation of pos gizi every 2 to 3 days and ensure resources are available for supervision and monitoring

To ensure quality implementation puskesmas staff and/or NGOs should provide regular supervision and monitoring of all pos gizi. Ensure puskesmas staff and DHO support regular supervision and monitoring. Training kaders is not enough. Kaders require regular support and follow up.

- Create a supervision checklist for use of puskesmas staff to monitor the quality of pos gizi.
- Provide kaders a check list to use during home visits with suggestions for counseling mothers.
- Provide puskesmas and kaders forms to use for monitoring participants and results.

Create an intersectoral working group (government, UI, PDRC, NGOs – not just health and nutrition)

Legitimize trainers with SK – letter

Ensure regular supervision and monitoring.

Use the results of this evaluation to improve the DEPKES *pos gizi* manual

Create a short-list for the PDI and have the *kaders* conduct only one per year.

Create a list of messages and counseling topics including PD strategies derived from the many PDIs already conducted (different messages for urban, rural, semi-rural, etc.)

Create 5 or 6 standard menus based on cheap local foods to which any PD foods could be added.

Annex A. Baseline Anthropometric Results

Each of the NGOs contributed their baseline data on anthropometric results. The data, which had been originally analyzed using NCHS standards in EPI-INFO was re-analyzed using the new WHO Growth Standards. The charts below illustrate the differences between the old and new standards.

Table 1. Wasting by age group –NCHS Growth Standards

	Age Group		Total
	< -2 years	> 2 years	
	# (%)	# (%)	# (%)
<=-2 WHZ (Wasted)	459 (13.4)	241 (8.3)	700 (11.1)
>-2 WHZ (Not wasted)	2965 (86.6)	2651 (91.7)	5616 (88.9)
Total	3424	2892	6316

Table 2. Wasting by age group – New WHO Growth Standards

	Age Group		Total
	< -2 years	> 2 years	
	# (%)	# (%)	# (%)
<=-2 WHZ (Wasted)	751 (22.2)	243 (8.5)	994 (15.9)
>-2 WHZ (Not wasted)	2637 (77.8)	2632 (91.5)	5269 (84.1)
Total	3388	2875	6263

Conclusion: There was a significant difference in the prevalence of wasting among children under two and over two years of age and new growth standards reveal an even greater percentage of wasted children when compared to previous growth standards.

Table 3. Underweight by age group –NCHS Growth Standards

	Age Group		Total
	< -2 years	> 2 years	
	# (%)	# (%)	# (%)
<=-2 WAZ (Underweight)	747 (21.8)	1059 (36.8)	1806 (28.6)
>-2 WAZ (Not underweight)	2677 (78.2)	1833 (63.8)	4510 (71.4)
Total	3424	2875	6316

Table 4. Underweight by age group –New WHO Growth Standards

	Age Group		Total
	< -2 years	> 2 years	
	# (%)	# (%)	# (%)
<=-2 WAZ (Underweight)	643 (18.9)	880 (8.3)	1523 (24.2)
>-2 WAZ (Not underweight)	2756 (81.1)	2021 (91.7)	4777 (75.8)
Total	3399	2901	6300

Conclusion:

	Age (2 years group)				Table Total	
	<= 2 year		>2 year		Count	Row %
	Count	Row %	Count	Row %		
NGO-WAZ <= -2 SD	747	41,4	1059	58,6	1807	100,0
>-2 SD	2677	59,4	1833	40,6	4511	100,0
Table Total	3432	54,1	2909	45,9	6343	100,0

- p-value=0,0001 The original calculations made by the NGOs show more children with low weight for age are under two years of age.

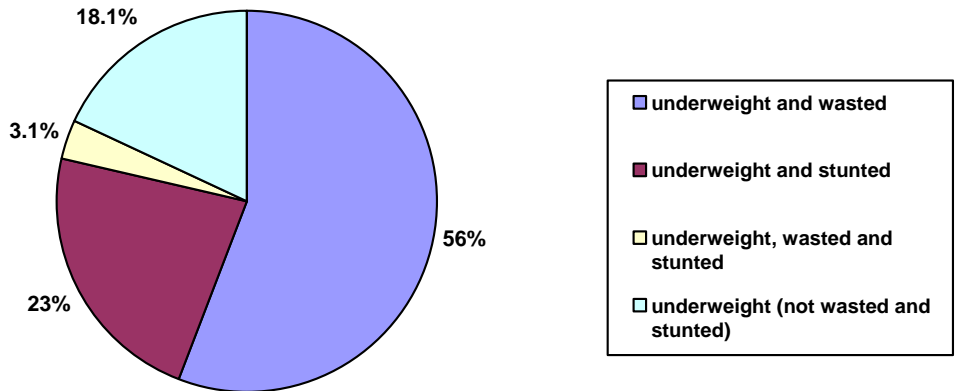
	Nutrition status								Total underweight	
	Underweight and wasted only		Underweight and stunted only		Underweight, wasted and stunted		Underweight only			
	#	%	#	%	#	%	#	%	#	%
Age group 0 - 5.99 mos	71	20,1	29	3,7	4	2,1	23	16,7	127	8,6
6 - 11.99 mos	80	22,6	27	3,4	11	5,8	15	10,9	133	9,0

	NCHS-WHZ				NCHS-HAZ				Table Total	
	<= -2 SD		>-2 SD		<= -2 SD		>-2 SD		Count	Row %
	Count	Row %	Count	Row %	Count	Row %	Count	Row %		
NCHS-WAZ <= -2 SD	497	27,5	1307	72,5	1089	60,3	717	39,7	1807	100,0
>-2 SD	202	4,5	4308	95,5	417	9,2	4093	90,8	4511	100,0
Table Total	700	11,1	5618	88,9	1507	23,8	4813	76,2	6343	100,0

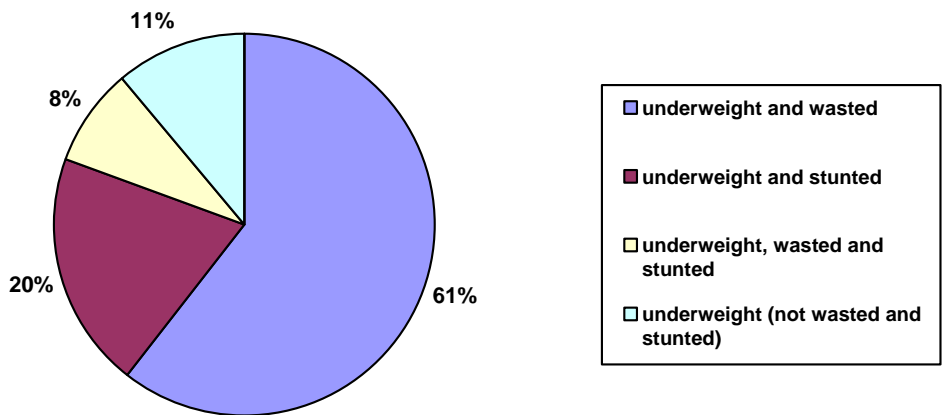
- Conclusion: While 27.5% of children with low weight for age will also show up as wasted according the old NCHS standards, 60.3% will show up as stunted.

12 - 23.99 mos	114	32,2	132	16,7	67	35,3	31	22,5	344	23,4
24 mos - 35.99 mos	36	10,2	214	27,1	49	25,8	21	15,2	320	21,7
36 - 60 mos	53	15,0	389	49,2	59	31,1	48	34,8	549	37,3
Group Total	354	100,0	791	100,0	190	100,0	138	100,0	1473	100,0

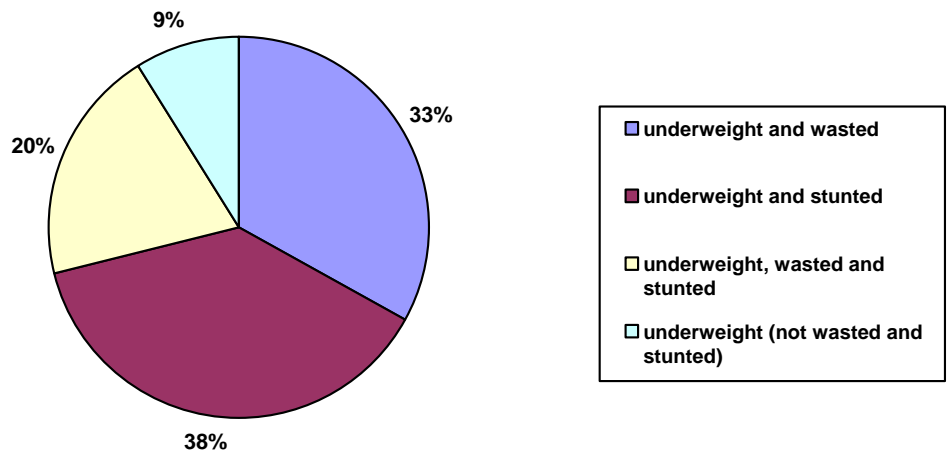
**Percentage of underweight attributable to wasting and stunting
Children 0-5.99 months**



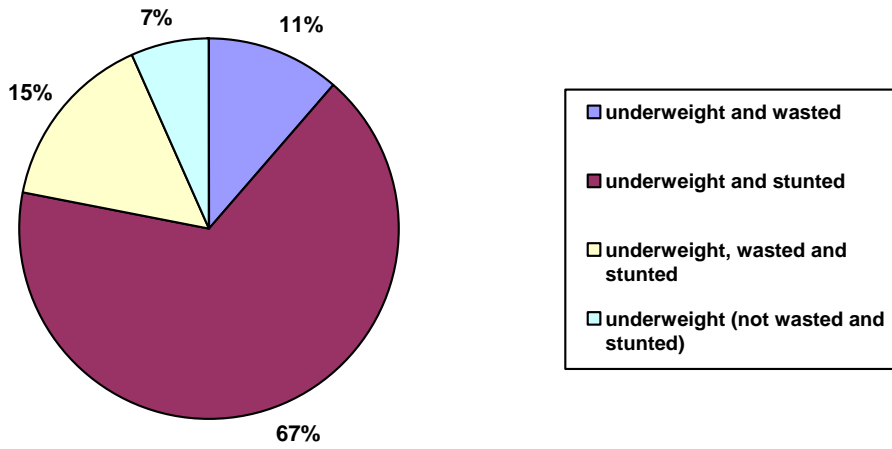
**Percentage of underweight attributable to wasting and stunting
Children 6-11.99 months**



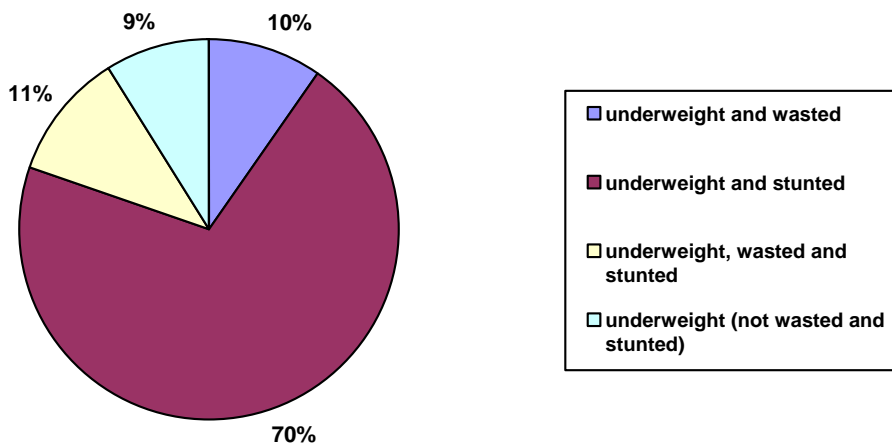
**Percentage of underweight attributable to wasting and stunting
Children 12-23.99 months**



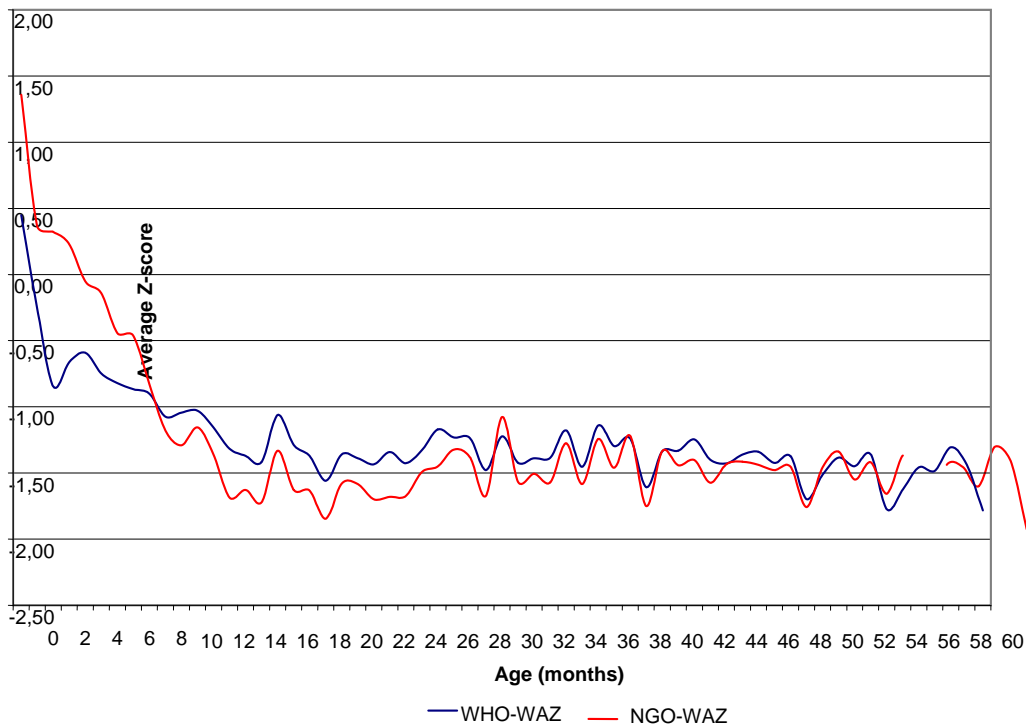
**Percentage of underweight attributable to wasting and stunting
Children 24-35.99 months**



**Percentage of underweight attributable to wasting and stunting
Children 36-60 months**

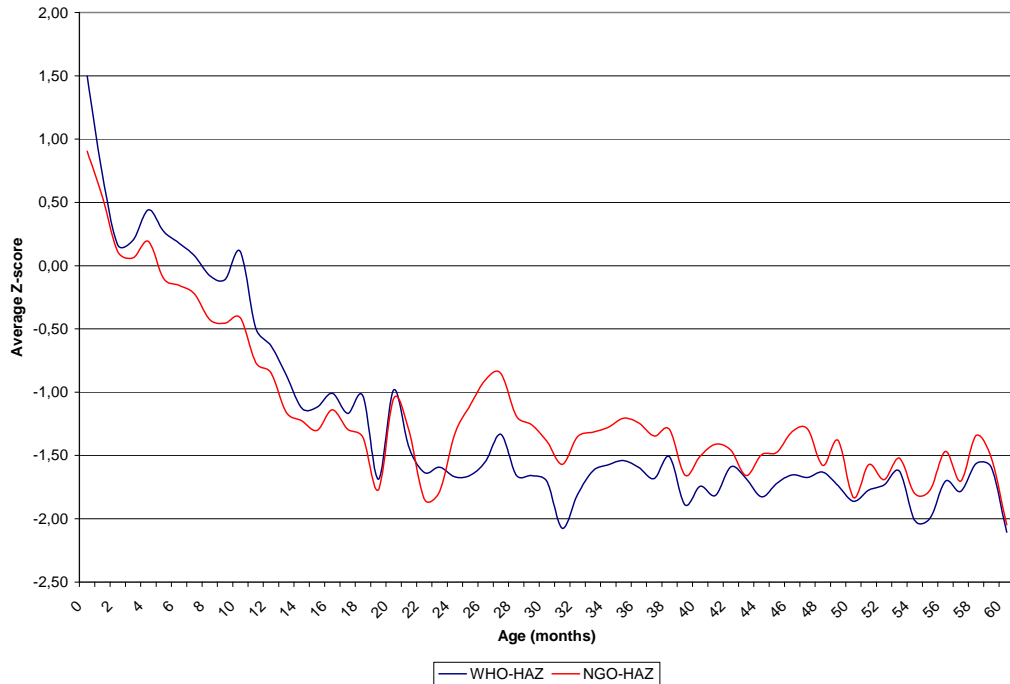


The following graphs depict the differences between the original analysis of baseline anthropometric data and analysis of the same data using the new WHO standards.

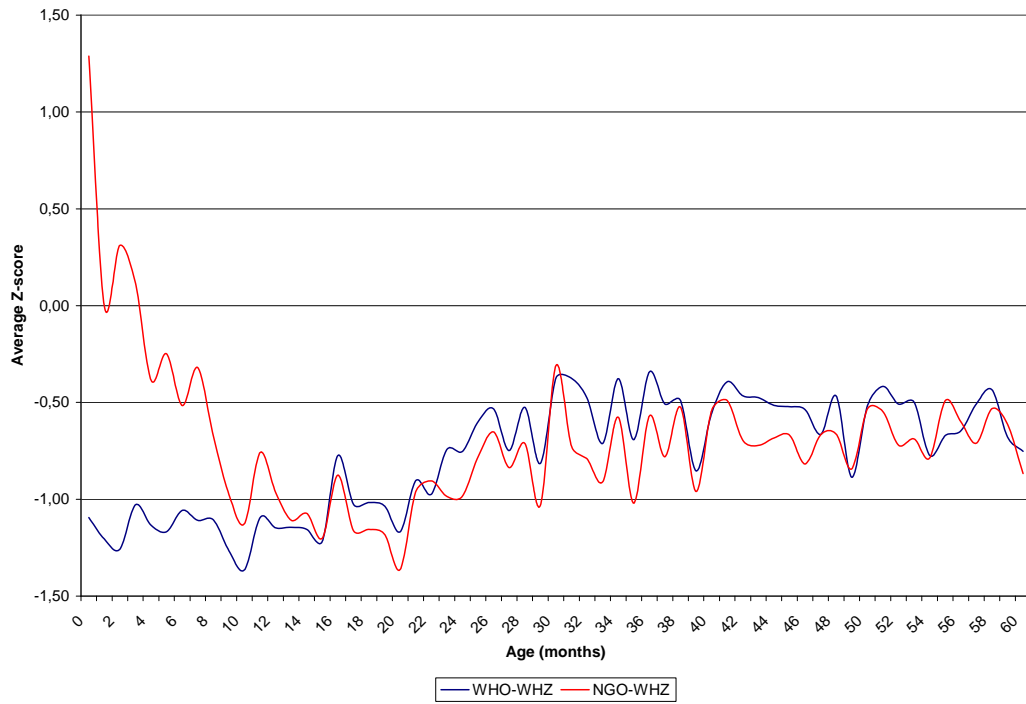


The graph above shows the baseline weight for age in the target areas. The WHO Growth Standard reveals that there may be higher rates of mild malnutrition among children in the first months of life than the earlier analysis indicated. The most important finding of either standard used for analysis is that virtually all children in the target areas were mildly malnourished starting at two months of age onwards. This indicates that the problem of malnutrition is likely related to nutritional status of the mother during pregnancy and to breastfeeding practices. Malnutrition becomes somewhat worse as the children reach the age at which they should be receiving nutritious complementary foods 3 to 5 times a day.

The following two graphs show height for age (HAZ) and weight for height (WHZ), again comparing the original calculation made with the old NCHS standard to the new WHO Growth Standards. As with weight for age, the onset of low height for age or stunting begins in the first months of life, once again pointing to inadequate breastfeeding practices and/or repeated episodes of illness. The same baseline surveys from which this data comes also queried mothers about recent illnesses of the child and did not find high rates of illness. The baseline surveys did reveal very low rates of exclusive breastfeeding (10.9% in World Vision areas, compared to 57% in CRS areas).



The chart below shows that the new WHO standards detect onset of very mild wasting at a much earlier age than the old NCHS standards that the NGOs used for their baseline analysis. Overall, average weight for height appears to improve as children reach two years of age and beyond. The fact that children are somewhat underweight the first month of life, indicates a need for interventions to improve maternal nutrition during pregnancy.



Annex B Essential Elements of PD/Hearth²

There are several elements that are essential to the implementation of an effective *Pos gizi* program. Experience repeatedly shows these elements cannot be adapted, modified, or skipped altogether without seriously diminishing the effectiveness of the program.

- **Each and every community conducts a Positive Deviance Inquiry using community members and staff.** The Positive Deviance Inquiry (PDI) is a learning opportunity for the community, not just fact-finding for the project staff. It is meant to provide an opportunity for community members (e.g., Hearth volunteers, health staff, community leaders) to “discover” that very poor families have certain good practices, which enable them to prevent malnutrition, and these practices can be done by any family with similarly scarce resources. In order for *every* community to take ownership, the discovery process must take place in *every* community. Just as adult learning theory dictates the need to discover by doing, so do communities need their own PDI to discover their PD practices. Many programs have tried to save time by extrapolating the PDI results from one community to another, thus losing the process of the community’s discovery from the PDI. If there are no poor families with well-nourished children in a particular community, the PDI may need to look at very poor families with only mildly malnourished children. Alternatively, if the community can identify a nearby community with the same culture, socioeconomic conditions and, perhaps, blood relationships, the volunteers can be taken there to identify positive deviant families with whom to conduct the PDI. Since family coping may change with the seasons, it is advisable to repeat the PDI during different seasons of the year.
- Care must be taken to assure that appropriate criteria are used to select the poorest families for the PDI. Ordinary community members, not just leaders or health workers, may be most able to determine which families are poorest. Once this is done, positive deviants can be identified.
- The PDI, as described in the *Pos gizi* Guide, consists of both questioning the family members and making careful observations of the situation. The lists of questions given are best used as discussion guides, rather than interviews. With sufficient practice, the PDI team may not need to take them along, but rather, just take some notes during the visit. A second or third person from the PDI team can concentrate on observing actual practices related to child care, hygiene and sanitation, food preparation, as well as what foods and materials are available in the home. Programs need to allow sufficient time to prepare for and conduct PDI visits to obtain the most

² Adapted from CORE Group *Pos gizi* Guide Addendum, 2005. Reprinted 2008.

useful information. The practices identified through the PDI are those which affect child growth.

- **Utilize community women volunteers to conduct the Hearth sessions and the follow-up home visits.** Mothers will learn best with a peer, with whom they feel comfortable and who understands local customs and conditions. The volunteer can be any woman in the community with a good reputation, credibility, healthy children (can be grown up), and a willingness to take on the necessary responsibilities.
- *Note: Mothers of positive deviant children are not necessarily the Hearth volunteers. The PDI derives a composite of PD practices from multiple PD families; it is extremely rare that one mother would model all the PD practices. (We are not looking for PD persons, but rather PD practices.) In many cultures, identifying individuals or families as models or “better” will result in social rejection by their peers.*
- **Prior to the Hearth sessions, de-worm all children, update immunizations, and provide needed micronutrients.** Children are more assured of quick recuperation when these important health interventions are taken care of prior to the Hearth session. Families should be referred for these services to the local health facility with whom the program is collaborating. These activities are kept separate from the Hearth session so that families don't attribute the child's nutritional status improvement to these rather than to the food and feeding practices. In areas of high malaria prevalence, children may need diagnosis and treatment before attending the Hearth sessions. During the Hearth session and follow-up home visits, families will be encouraged to continue to access these and other preventive health services including growth monitoring and to use insecticide-treated mosquito nets (ITNs), where needed. In areas of high malaria prevalence, children may need diagnosis and treatment before attending the Hearth sessions. During the PDI, if it is evident that very poor families are using ITNs, it will be useful to discuss how they afford them in order to share that information with the Hearth participants.
- **Use growth monitoring to identify newly malnourished children and monitor nutritional status of participants who have graduated from the Hearth.** A growth monitoring program may not exist in the community when *Pos gizi* is initiated, but should be instituted in time to begin monitoring the children who complete the Hearth session as well as all other children in the community. The growth monitoring program must include good nutrition counseling and explanations of the child's growth for the caregivers.

- **Ensure that caregivers bring a daily contribution of food and/or materials to the Hearth sessions.** One of the fundamentals of *Pos gizi* is that families learn they really can afford to feed their children nutritious food. Obtaining and bringing the foods is practice to reinforce that idea. In addition, requiring contributions makes the program non-paternalistic while also making it possible for a community to implement without outside material support. If the community is to own the *Pos gizi*, the ideal is for participants to contribute all food. However, in areas of extreme poverty or food insecurity, this may not be realistic; in which case, the emphasis should be on mothers contributing at least a small portion, particularly foods which they do not commonly procure for their children. If the foods used in the menus are not affordable, then, the menus need to be revised to use only foods that can be acquired by the poorest families, and/or the mothers taught the strategies used by the positive deviant families to enable them to afford the healthy foods.
- **Design Hearth session menus based on locally available and affordable foods.** Participating families must be able to replicate meals in their own homes with limited resources. This is the only way they will be able to sustain the improved nutritional status of their children and prevent future malnutrition in the family. The affordability of foods is verified through the PDI, which investigate the foods that are used by the poorest families with well-nourished children, and the market survey, which investigates the costs and nutritional content of foods available in the market. Volunteers will need assistance from staff members to plan menus.
- **The Hearth session menus must provide a special nutrient-dense meal sufficient to ensure rapid recuperation of the child.** The daily menu including the snack must contain the listed amounts of calories, protein and micronutrients per child. These amounts are based on a formula, calculated on the supplementation necessary to rehabilitate a malnourished child. Required levels by age are listed in the guide. Consider the Hearth meal as “medicine;” this is the dosage prescribed. If the Hearth supplemental meal does not meet this minimum standard, then weight gains are compromised.
 - Calories 600-800 kcal
 - Protein 25-27g
 - Vitamin A 400-500 RE (RE=retinal equivalent)
 - Iron 10mg
 - Zinc 3-5 mg
 - Vitamin C 15-25mg

- The meal is an extra supplement, not a meal substitute. The additional calories and protein are needed for “catch-up” growth of the child. Eventually, this “extra” energy and protein-rich meal will not be necessary when the child is no longer malnourished. However, to sustain the rehabilitation gains, regular family meals need to be more balanced and nutritious. The caregivers learn how to do this during the Hearth sessions.
- **Have caregivers present and actively involved every day of the Hearth session.** Involvement promotes ownership and active learning and builds self-confidence. The most important idea is to repeatedly use the new practices. By learning and internalizing the new practices, not only will the improved nutritional status of the participating child be sustained at home but also, malnutrition will be prevented among future children. Attendance of caregivers at each day of the Hearth rotation is also necessary to achieve adequate weight gain.
- **Conduct the Hearth session for 10-12 days within a two-week period.** Within 8-12 days of starting the Hearth rehabilitation (which provides the extra, nutrient-dense meal), mothers will see notable improvement in their child. They may need some guidance to recognize the changes in improved appetite and energy level, less irritability, level of alertness, etc. This recognition of the child’s improvement serves as a major motivator in the caregiver’s adoption of the new feeding, caring and health practices. If the child is not fed the special extra meal over sequential days, recovery will be so slow that the mother will not be rewarded and motivated by seeing the changes. There may be breaks of one or two days in the sequence of days for weekends, holidays, or market days (*e.g., 4 days + market day + 4 days + market day + 4 days*) with the family encouraged to prepare the special meal at home on the days off.
- **Include follow-up visits at home for two weeks after the Hearth session (every 1-2 days) to ensure the average of 21 days of practice needed to change a new behavior into a habit.** The caregivers will need continued support to implement the new practices in their own homes. During home visits, the volunteers or staff can help them think of solutions to any difficulties they are encountering or respond to concerns about their child’s progress.
- **Actively involve the community throughout the process.** Community leaders and a village health committee can provide support in organizing the weighing of all children in the target age group, recruiting volunteers, conducting the PDI, contributing materials, utensils, and food for the sessions, assuring that eligible caregivers attend the Hearth session regularly, and encouraging other community members to support the families with malnourished children in adopting new practices. The community can participate in monitoring program implementation and

results. The higher the exposure of the Hearth, the greater the impact on the overall nutritional status of the community. It provides “living proof” of the effects of good nutritional inputs on malnourished children, which raises the consciousness of community members and empowers them to prevent malnutrition from within their own community.

- **Monitor and evaluate progress.** At a minimum, programs should monitor attendance, entering and one-month weights, and the percent of children who graduate after one session or after two sessions. [Depending on community goals and national protocols, graduation may be determined as: 400g weight gain in one month; a decidedly upward growth trend on the growth curve during two months; moving up one level (i.e. from moderate to mild); or achieving normal weight-for-age.] Programs are encouraged to monitor the longer-term impact by measuring weight gain of participants two months and then six months or a year after graduation, and tracking growth of younger siblings. Programs may wish to develop other indicators to monitor the quality of implementation, community support, etc. Many examples of such indicators are given in the CORE *Pos gizi* Guide.
- **If a child doesn't gain weight after two 10-12 day sessions, refer the child to a health facility to check for any underlying causes of illness such as tuberculosis, HIV/AIDS, or other infection.** Some programs may opt to have all children checked for underlying illness prior to entering the Hearth to screen for diseases that can be treated first. If the child does not have an illness, families may need to be directed to other social services or to income generation programs.
- The average number of sessions it takes to graduate a child varies between programs, but there should be a cap on the total number of sessions a caregiver can attend (i.e. two) as caregivers may start to become dependent on the Hearth and not be actually internalizing new behaviors. A sense of urgency to rehabilitate a malnourished child should be instilled and encouraged.
- **Limit the number of participants in each Hearth session.** As with all educational programs, having a limited number of participants provides a “safe” environment in which rapport can be built and all caregivers have an equal opportunity to participate in all activities. Experience has shown that Hearth sessions are most successful when limited to ten caregivers, with six to eight being an ideal number.

Annex C Indicators and Assessment Objectives

Objectives of the Evaluation

- Document the effectiveness of *Pos gizi* in Indonesia
 - Nutritional status
 - Behavior changes
 - Community empowerment
 - Local capacity

- Determine the factors, methods, or processes which contributed to effectiveness:
 - Location or socio-cultural factors
 - Community mobilization
 - Training and supervision
 - Ages of children
 - Admission and graduation criteria
 - Local government policies and interest
 - Integration with other programs or other sector efforts
 - Basic initial local capacity
 - Local leadership

- Document key factors and the model for future implementation as guidance for the GOI

Indicators

Indicator	Data source	Institution
<ul style="list-style-type: none"> • % of participating children who “graduated (per local program criteria) • % who gained 200 g after one session • % who gained 201 - 399 grams after one cycle • % who gained > or = 400 grams after one cycle • % who sustained status 3 or 6 months after graduation • % who graduated between 6 and 12 months of age who have normal height at 5+ years • % of younger siblings of participants who have normal weight 	<ul style="list-style-type: none"> • Project records • New • New 	<ul style="list-style-type: none"> • All
<ul style="list-style-type: none"> • % of care-givers practicing recommended practices • Percent of (breastfed) children 6-23.99 months receiving the minimum recommended number of complementary feeds in the last 24 hours • Average number of food groups consumed by children 6-23.99 months in the last 24 hours • Good young child feeding practices prevalence (percent of children 6-23.99 months scoring 6 on the young child feeding practices score) • Average number of food groups consumed by children 24-59.99 months in the last 24 hours • Percent of caregivers demonstrating correct hand washing technique • Percent of caregivers who report having used soap for hand washing at least 2 critical times during the past 24 hours • Increased feeding after illness • Prompt care-seeking for child with signs of illness • Monthly attendance at the <i>posyandu</i> • Active feeding 	<ul style="list-style-type: none"> • KPC surveys • KPC surveys • KPC 	<ul style="list-style-type: none"> • INGOs
<ul style="list-style-type: none"> • % of local governments allocating funds for X% of <i>Pos gizi</i> budgets 	<ul style="list-style-type: none"> • documentation from 	<ul style="list-style-type: none"> • All

Comment [V1]: Can we get a table with this info?

<ul style="list-style-type: none"> • % of local governments designating personnel to work with <i>Pos gizi</i> 	<p>implementers, local government</p>	
<ul style="list-style-type: none"> • % of <i>kaders</i> and committees implementing <i>Pos gizi</i> on their own with same graduation rates • % of <i>kaders</i> applying observable improved skills in other <i>posyandu</i> activities • % of communities doing their own supervision, monitoring, fund-raising • other community contributions to <i>Pos gizi</i> • # of other community leaders engaged (religious, non-formal) 	<ul style="list-style-type: none"> • interviews and observation insofar as possible 	<ul style="list-style-type: none"> • Emphasis on SC and MC project sites
<ul style="list-style-type: none"> • % of caregivers with 80% participation in <i>Pos gizi</i> session • % of caregivers bringing daily contribution (program standards) 	<ul style="list-style-type: none"> • Project records 	<ul style="list-style-type: none"> •

Comment [V2]: Table w this info?

- Qualitative factors

<ul style="list-style-type: none"> • Indicators 	<ul style="list-style-type: none"> • Methods of data collections
<ul style="list-style-type: none"> • Caregiver attitudes towards <i>Pos gizi</i> participation • Caregiver attitudes towards health/nutrition status of child • <i>Kader</i> attitudes towards facilitating <i>Pos gizi</i> • <i>Kaders</i> able to explain concepts and process of <i>Pos gizi</i> • Changes in family resource allocation for health and nutrition 	<ul style="list-style-type: none"> • Focus Groups and individual interviews
<ul style="list-style-type: none"> • Community members' awareness of malnutrition • Community members' awareness of <i>Pos gizi</i> and purpose • Community leaders' awareness of malnutrition • Community leaders' awareness of <i>Pos gizi</i> and purpose • Level of community participation in meetings • Leaders sensitized about nutrition and/or <i>Pos gizi</i> 	<ul style="list-style-type: none"> • Individual interviews
<ul style="list-style-type: none"> • Quality of Health sessions - • mothers actively participating • protocols followed • health education presented as dialogue, problem solving/strategy • menu meets CORE standards for nutrients, portions, age of child • Home visits – frequency, problem solving, supportive 	<ul style="list-style-type: none"> • Observation, supervision records
<ul style="list-style-type: none"> • PDI – who does it and how it was done, findings 	<ul style="list-style-type: none"> • Interviews, records on PD behaviors and foods
<ul style="list-style-type: none"> • Community mobilization 	<ul style="list-style-type: none"> • Interviews with <i>kaders</i>, staff

- **Processes**

<ul style="list-style-type: none"> • Training – length, quality • Supervision – intensity, feedback 	<ul style="list-style-type: none"> • Reports, interviews with <i>kaders</i> • Project reports, <i>kaders</i> interviews, supervisor interviews
<ul style="list-style-type: none"> • Orientation of leaders, committees, health staff 	<ul style="list-style-type: none"> • Individual interviews

• Advocacy	• Community interviews
• Integration with other programs, sectors	• interviews with health staff, NGO staff, observation
• Admission and graduation criteria	• program records, interviews
• Monitoring and use of data	• program records, system and interviews with staff, <i>kaders</i>

Annex D. Conclusions and Recommendations from Developing a Positive Deviance Model for Successful Replication and Scale-Up *A Research and Model Development Initiative In Urban Jakarta FINAL REPORT For Mercy Corps Indonesia, November 30, 2007*

5. Conclusions and Recommendations:

Based on the findings described above, the team has developed a series of conclusions and recommendations. The conclusions are divided into three sets, each with its relevant recommendations. Attached to each of the recommendations below is a strategy statement with suggestions for implementation of the recommendation.

Conclusions I

- Many caregivers fail to recognize malnutrition as a serious problem.
- Therefore, many attend the NERS sessions in order to take advantage of the early childhood development activities, and not for nutritional rehabilitation or health information.
- After graduation from NERS, social pressure from neighbors and extended family members can undermine behavior change.
- Community awareness of PD practices is poor, social support is low, and healthy snacking options few.
- Social support can enable caregivers to maintain healthy behaviors after graduation; and social learning among children in the NERS can improve appetite and willingness to adopt healthy hygiene practices.

Recommendations I

1. In order to achieve synergies, familiarize the larger community with key PD practices, avoid stigmatization of caregivers, and prevent new cases of malnutrition, PD/NERS activities should be promoted as an early childhood development program; and all caregivers of children aged 6 months to 2 years should be invited to attend.

Strategy: Daily sessions should be developed which include the nutritional activities of NERS, as well as an expanded repertoire of attractive and educational songs and games that promote good nutritional practices and teach basic concepts. To accommodate all children under age five, the NERS

should be held at the R.T. (rather than R.W.) level; though if R.T.s are small and adjacent, they could hold a shared NERS or work together in clusters. To enable existing staff and Cadres to cover all R.T.s, the NERS should be held only once every six months in each R.T., on a rotating basis. Spin-off benefits of this would include greater understanding of and support for the PD/NERS practices and messages in the wider community, and averting malnutrition among children who are at risk but not yet underweight.

2. Positively deviant nutrition and hygiene-related behavior change should be encouraged in caregivers of children over aged two by incorporating aspects of PD/NERS into the PAUD program.

Strategy: In addition to the usual early childhood development activities, PAUD teachers should be trained to promote awareness and adoption of the behaviors that were identified as positively deviant – by promoting nutritional, hygiene and health messages in songs and stories for children; while Cadres lead information and discussion sessions with caregivers. Cadres can conduct these sessions for caregivers while the children are busy with PAUD activities. To practice healthy snacking, caregivers should be asked to bring a healthy snack for their child each day.

3. In each NERS R.W., the general community should be mobilized and active in encouraging caregivers to sustain PD behaviors learned in NERS.

Strategy: A Community Report and Strategization Meeting should be held after Cadres are trained. R.T. Heads should lead the meetings with assistance from Puskesmas staff (nutritionist and midwife), Cadres and other R.W. Siaga members. All households of the R.T. should be encouraged to send at least one representative. During the meeting, these community members will be informed of the malnutrition rate in their community and they will be invited to identify the causes of malnutrition and suggest methods and plans to prevent it. An Action Plan Committee should be organized and given support by the R.W. Siaga Committee in developing a plan to carry out the strategic actions. When R.W. Siaga comes on line, these meetings can be modeled upon the R.W. Siaga's Community Self Survey meetings.

4. After NERS has been conducted, community members should be guided in the development of follow-up activities that can offer continued support to caregivers in maintaining the PD practices.

Strategy: A Community Feedback and Planning meeting should be held in each R.T. at the conclusion of each NERS session. The meeting should: 1) provide feedback to the community on the results of the NERS, and 2) develop a rough plan for follow-on activities that will encourage the caregivers to sustain the new behaviors they learned in NERS. When R.W. Siaga begins, these meetings can be modeled upon its Community Deliberation meetings. An

ad hoc committee should be formed to refine the plan and draft a schedule of implementation (under the guidance of the R.W. Siaga Committee).

The follow-on activities should be suggested or selected by community members, but might include a Complementary Feeding Support Group in which caregivers in each participating R.T. are encouraged to feed their children together with other children of similar age at least once a day; or Peer Group Focus Group Discussions, for which Cadres could organize and lead small group discussions among caregivers of children under five that review and reinforce awareness and understanding of the key behavior change objectives and messages of NERS.

5. To encourage support within the malnourished child's family for the behavioral changes advocated by PD/NERS, a secondary caregiver (in addition to the primary caregiver) should be familiarized with the PD menus, messages and practices.

Strategy: Both the secondary caregiver should be invited to the initial socialization session in which PD/NERS is explained; and the secondary caregiver should attend the first and final days of the NERS.

6. Before initiating any activities at the R.W. or R. T. levels, staff responsible for introducing PD/NERS should first gain support from the Kelurahan (Pak Lurah) level of local government.

Strategy: Kelurahan officials should be approached both from above and from below. Kecamatan officials should instruct them to support and participate in PD/NERS, while advocates from among R.W. heads, Puskesmas staff and PD-trained Cadres meet with them to promote the program.

Conclusions II

- Weaning to solid foods and nutritious "family foods" is significantly delayed for many malnourished children.
- Milk formula is replacing solid/diverse foods for some, while unhealthy purchased snacks replace nutritious food for many.
- Most malnourished children are stunted before they enter the NERS program; and stunted children cannot "catch up" during a 2-week NERS.
- We may be targeting some children for NERS who are not currently malnourished.

Recommendations II

7. To pinpoint children who are currently at risk and avoid targeting those who are stunted but now adequately nourished, children who are acutely malnourished (e.g. suffering from wasting) should be identified.

Strategy: Children found severely malnourished by weight-for-age should be measured for height and their weight-for-height classification should be calculated. Cadres should actively encourage caregivers of all children identified as acutely malnourished to participate in the expanded NERS or PAUD sessions.

8. In recognition of the fact that it is normal for children to gain weight at different rates at different ages, the expected weight-gain during NERS should be age-adjusted.

Strategy: The optimal weight gain during a 2-week period should be calculated for each age group, segmented on a 6-month basis (6-12 months, 12-18 months, etc). These calculations should be utilized to set realistic weight-gain expectations for each age group.

9. The program should alert caregivers to the seriousness of the problem of malnutrition, particularly when their own children are found to be malnourished, by encouraging them to participate in the growth monitoring process.

Strategy: At Posyandu weighing sessions, Cadres should teach caregivers to plot their children's current status on the KMS card. Direct participation in tracing their child's growth curve will provide a better understanding of the reason for the child's classification, as well as more convincing evidence that the child is actually malnourished.

10. Cadres should be trained to comprehend and explain to caregivers: 1) basic child nutrition and feeding concepts, 2) the causes, prevention and treatment of childhood illnesses common in the community, and 3) basic parenting skills.

Strategy: The TOT for government trainers at the Municipality level should incorporate a module that is based on the UNICEF framework for malnutrition, which includes the accepted principals of infant and young child feeding (IYCF) as well as the role of hygiene, sanitation and common diseases in malnutrition, and the disease/malnutrition cycle. The TOT should also incorporate a short curriculum on basic parenting skills and competencies (available on the internet). They should practice communicating these concepts and skills in terms that Cadres, and ultimately caregivers, can understand.

11. To ensure that nutritious “family food” is not displaced by less nutritious substitutes, healthy snacking options should be made readily available from vendors in every NERS community; and accurate information should be offered to caregivers to improve their understanding of the use and misuse of milk formula in the diets of children at various ages.

Strategy: a) One or more Community Approved Vendors should be designated, from among those who are willing to participate, as the neighborhood source of healthy snacks such as eggs, fruit, fortified biscuits, etc. The vendor must agree to offer at least one healthy option daily. To support the Community Approved Vendors’ continued participation, Cadres and caregivers participating in NERS should agree to patronize these vendors exclusively, and should urge their neighbors and family members to patronize them too. b) the TOT for government trainers should include a module on milk formula to enable them to transmit accurate information to Puskesmas staff and Cadres.

Conclusions III

- Recurrent disease, particularly diarrhea and TB, prevents many malnourished children from achieving steady weight gains.
- Despite policy, some children identified as severely malnourished have never been tested for TB.
- Pervasive environmental/infrastructure degradation may render diarrhea-prevention practices futile.
- Many caregivers believe a diet of only porridge and water or water alone is appropriate for a sick child during acute illness episodes

Recommendations III

12. Rigorously screen all seriously malnourished children for TB regardless of symptoms.

Strategy: All Kecamatans should provide free TB testing. Cadres should refer all children whose KMS card growth curve falls into the severely malnourished zone to Puskesmas, and where necessary, work with the community to arrange transport for caregivers who cannot provide it for themselves.

13. Caregivers should counseled on appropriate feeding during episodes of illness as well as catch-up feeding after illness; and Cadres should work with them on strategies to achieve optimal feeding when the child is ill.

Strategy: Accurate information and messages on appropriate feeding during illness should be incorporated into the array of key messages that are

promoted during NERS. If Complementary Feeding Support Groups or Peer Group Focus Group Discussions are organized to follow and reinforce NERS, then participating caregivers should brainstorm techniques for persuading sick children to eat a variety of foods; and they should remind one another of these techniques when a child falls ill.

14. Over the long term, government at all levels must attack the problem of urban environmental and infrastructure break-down.

Strategy: MercyCorps should advocate at the national, provincial and municipality levels of government for greater attention, resources and planning to be devoted to infrastructure repair and drainage in the urban slums. In particular, “illegal” settlements should be recognized and given legal status so that public services can be provided for these communities.