

## Malnutrition treatment and prevention:

# The effectiveness and potential for scale-up of Positive Deviance/Hearth in 7 countries in Asia and Africa

**Authors:** Diane Baik<sup>1</sup>, Carmen Tse<sup>2</sup>, Carolyn A. MacDonald<sup>3</sup> (Aug 2016)

<sup>1</sup>MSc, World Vision International, Seattle, USA

<sup>2</sup>MSc, World Vision International, Mississauga, Canada

<sup>3</sup>PhD, World Vision International, Mississauga, Canada



## Introduction

- **Positive Deviance/Hearth (PDH)**: Internationally recognized community-based intervention for families with underweight preschool children (6–36 months)
- **Positive Deviants**: Poor Households with Healthy Children
- **Hearth**: 12-Day education session (participant caregivers contribute local ingredients, cook, feed children, and learn by doing) (8-10 malnourished children per session)
  - Learn feeding, hygiene, health-seeking, caring messages from Volunteers
- Published evidence of effectiveness and scale-up of PDH is scarce
- There have been criticisms that PDH is difficult to scale-up, especially with good quality

## Introduction Cont'd...

- WV conducted a program evaluation in 8 countries within Asia, Africa, & Latin America (Sept. 2010)
  - Overall, countries with stronger implementation of technical components had better results. This emphasized need for strong technical preparation and support throughout the programme.
  - Major challenges:
    - High # of **cascade trainings**, lose info/details
    - If **implementation** after training is **delayed**, facilitators forget details (especially technical components)
    - Prgm quality highly **depends on trainer's capacity and skills** (3 day vs. 10 day training)
    - Many countries call prgm PDH, but **essential elements** of PDH are **missing**, so results not showing & many people say **PDH does not work**
    - **PDH data not being collected well** and monitoring data not being analyzed/used



# Scope of WV PD/Hearth Programs (2016): 41 countries

	Africa				Asia			LAC
1	Chad	11	South Africa	21	Bangladesh	32		Bolivia
2	DRC	12	Tanzania	22	Cambodia	33		Costa Rica
3	Ethiopia	13	Uganda	23	China	34		Ecuador
4	Ghana	14	Zambia	24	India	35		El Salvador
5	Kenya	15	Burundi	25	Indonesia	36		Guatemala
6	Niger	16	Zimbabwe	26	Laos	37		Haití
7	Mali	17	Malawi	27	Mongolia	38		Honduras
8	Mauritania	18	Mozambique	28	Nepal	39		México
9	Rwanda	19	Niger	29	Philippines	40		Nicaragua
10	Senegal	20	Sierra Leone	30	Sri Lanka	41		Perú
	Red=Past Implementa tion		Black= implementing now	31	Myanmar			

## Introduction Cont'd...

- As World Vision (WV) is implementing PDH in 30 countries, thus it became critical to develop a new capacity building strategy & tools to improve program quality for large scale-ups
- WV improved PDH programme quality through:
  - **Standardized trainings** (Master Trainer, Trainer of Facilitator and Volunteer Manual)
  - Inclusion of **large practical component** in training
  - **Reduced #** of levels of **cascade trainings**
  - Special **focus on technical components & facilitation skills**
  - **Standardized monitoring tools** and include data analysis component
  - **Developed tools:** Menu calculator & database (including mHealth app)
  - **Advocated** for support from **in-country leadership** before conducting trainings (commitment to implement PDH within 3 mo post-training)

## Objective

Pilot standard monitoring/tracking tool to **determine reach and effectiveness of PDH in 7 African and Asian countries** (Bangladesh, Burundi, Kenya, Laos, Mozambique, Nepal and Niger)

## Methods

### **Duration:**

- Programme data from **Oct 2014 to Sept 2015** (WV FY15) were collected from WV offices of the 7 countries

### **Measured:**

- **Graduation rates** were calculated by determining proportion of participant children achieving standard PD/H weight gain at 3-month follow-up
- **Sustained rehabilitation** was evaluated by reviewing 6-month follow-up data

Indicators	Definition
<b>Underweight</b>	Weight for age < -2 standard deviations (SD) from the WHO Child Growth Standards median; <b>PDH admits children 6-36 mo (some up to 59 mo) if WAZ&lt;-1.0SD (mild, moderate or severely underweight)</b>
<b>Wasting (screened)</b>	MUAC is yellow or red (in accordance with national protocol) or odema present; <b>All children with Red MUAC or positive for odema are referred to the Health Centre and not admitted into PDH</b>
PDH indicators	Definition
<b>Adequate Weight Gain</b>	Percent of children 6-36 mo (some upto 59 mo) admitted to the programme and gained: ≥200g at Day 12; ≥400g at Day 30; and ≥900g at 3 Months follow-up
<b>Graduation</b>	Percent of children 6-36 mo (some upto 59 mo) admitted to the programme who reached the discharge criteria at 3 Months: <ul style="list-style-type: none"> <li>• WAZ≥-2SD (underweight status is 'mild or normal') or</li> <li>• Gained ≥900g if admitted as 'mild' (WAZ&lt;-1SD to -2SD) (repeat up to 3 sessions if children do not graduate after 1<sup>st</sup> round of Hearth)</li> </ul>
<b>Defaulted</b>	Percent of children 6-36 mo (some upto 59 mo) admitted to the programme who are absent for 3 or more days of Hearth or who migrated, died, >59 months, admitted to hospital, others during follow-up

## Results

- Approximately 37,950 underweight (WAZ<-1.0SD) children 6-59 mo admitted into PDH in 7 countries
- **Follow-up Response Rate:**
  - 30 Days: 86.4% (32,787)
  - 3 Months: 68.6% (26,040)
  - 6 Months: 40.2% (15,262)

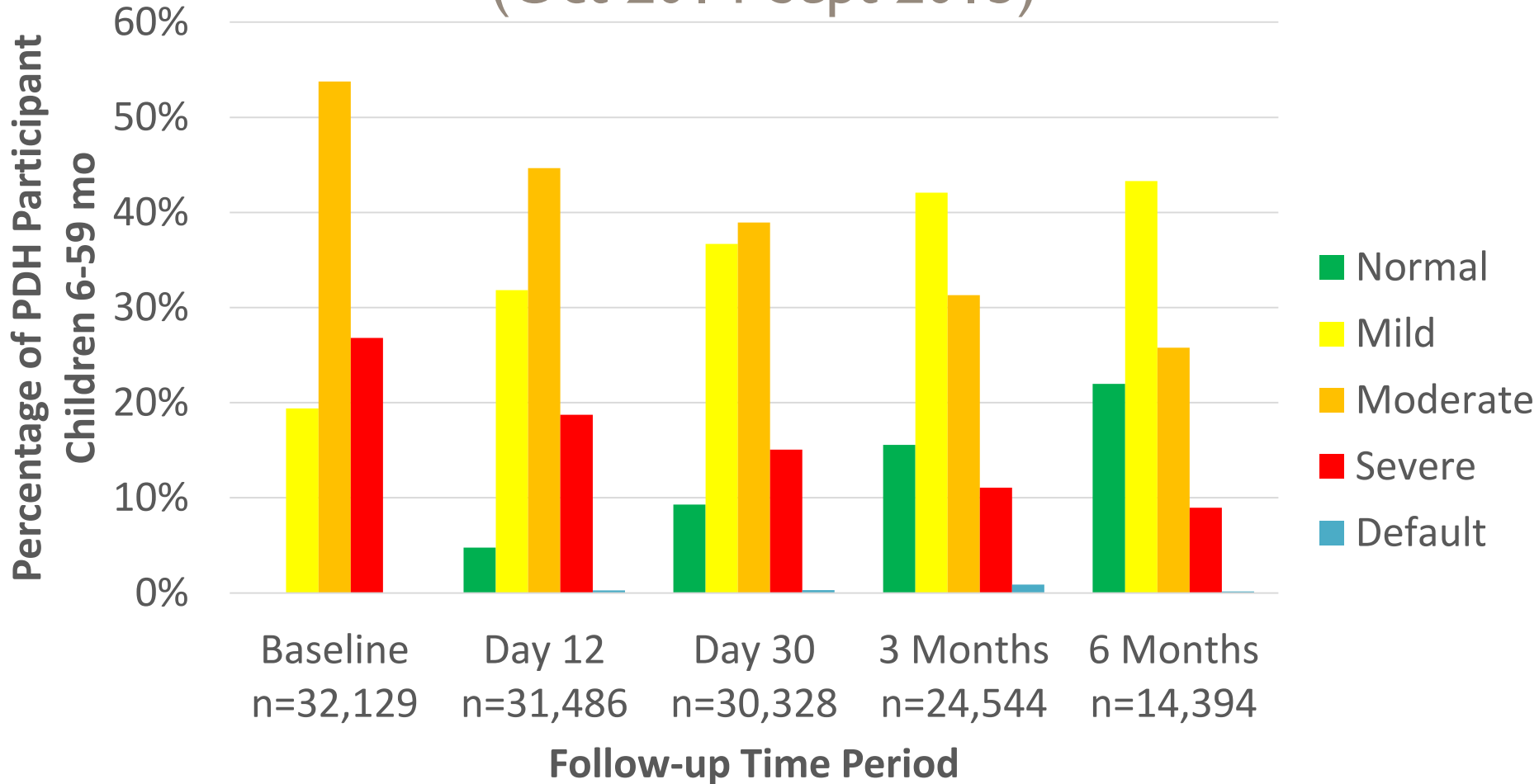




Country	Total Children Admitted (WAZ<-1SD)	% Underweight of Children U5 (WAZ<-2.0SD)				
		at Baseline (n)	at 12 Days (n)	at 30 Days (n)	at 3 Months (n)	at 6 Months (n)
Bangladesh	32,129	80.6 (25,894)	63.2 (19,906)	53.9 (16,332)	42.0 (10,305)	34.7 (4991)
Burundi	4040	90.1 (3,641)	45.9 percentage point reduction			25.5 (77)
Kenya*	111	79.3 (88)	36.3 (49)	20.7 (12)	18.4 (7)	N/A
Laos*	16	81.3 (13)	64.6 percentage point reduction			N/A
Mozambique	1503	45.9 (690)	31.2 (450)	21.4 (290)	13.1 (99)	13.1 (58)
Nepal*	30	86.7 (26)	54.8 (17)	63.0 (17)	N/A	N/A
Niger	122	95.9 (117)	30.3 (37)	14.8 (18)	3.3 (4)	1.6 (2)
All Countries Total	37,951	30,469	23,543	17,115	10,619	5,128
	100%	80.3%	63.4%	52.2%	41.1%	33.6%

**\*Note: Laos and Nepal only started PD/Hearth data collection in Q4 and Q3 of FY15, respectively and Kenya and Niger had incomplete data.**

# **BANGLADESH:** Underweight status of PDH participant children during follow-up (Oct 2014-Sept 2015)

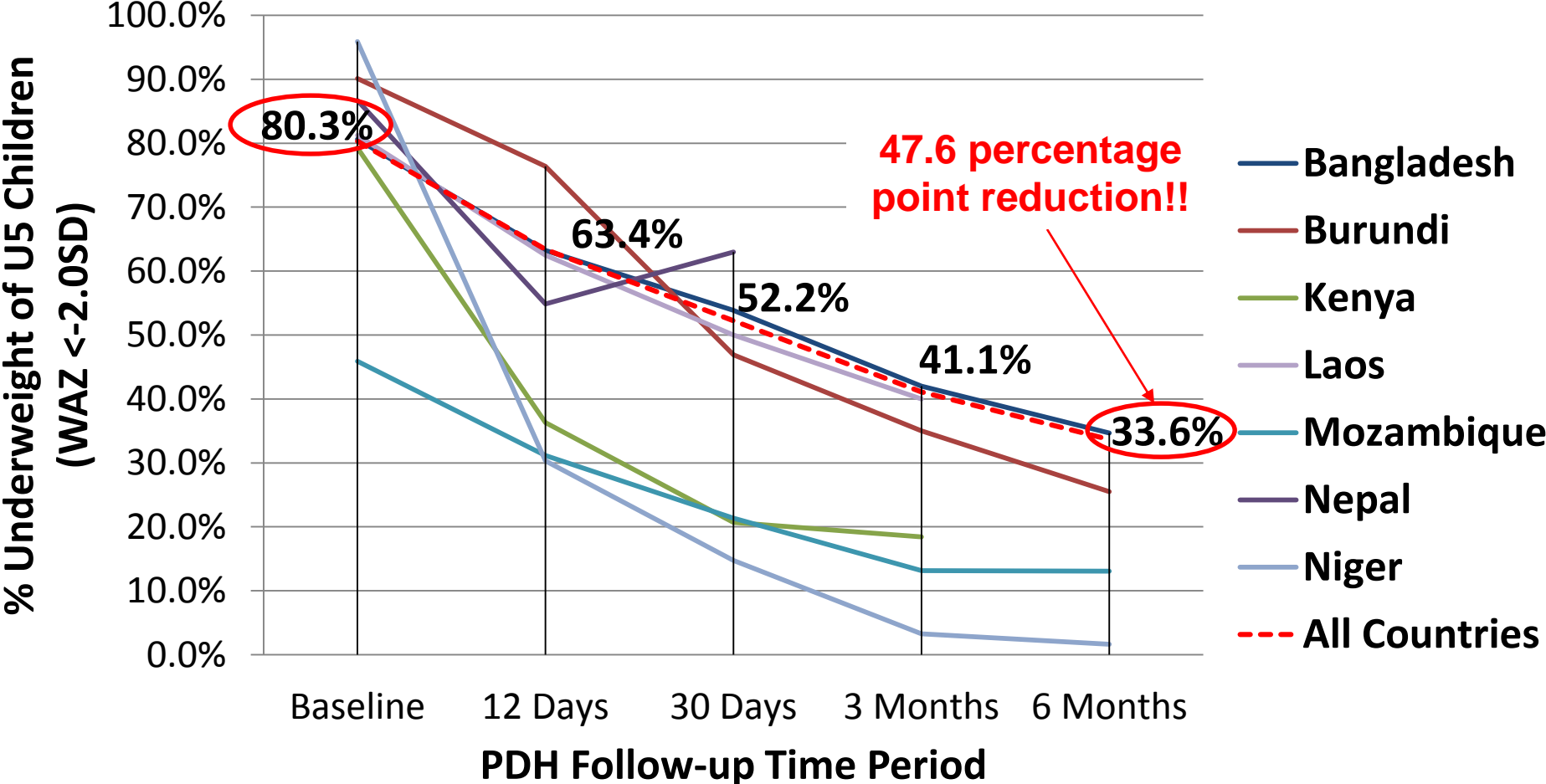


## Graduation Rate and Adequate Weight Gain at 3 months in 7 Countries

Country	3 Months								
	Graduation (n,%)		Not Graduated (n,%)		Adequate Wgt Gain (n,%)		Inadequate Wgt Gain (n,%)		Avg Wgt Gain
Bangladesh	14,024	57.6%	10,305	42.4%	16,251	66.2%	8,299	33.8%	1184
Burundi	375	65.0%	202	35.0%	417	71.0%	170	29.0%	1177
Laos	2	40.0%	3	60.0%	1	20.0%	4	80.0%	640
Mozambique	655	86.9%	99	13.1%	673	88.9%	84	11.1%	1813
Nepal	10	37.0%	17	63.0%	16	59.3%	11	40.7%	919
<b>Total</b>	<b>15,066</b>	<b>58.6%</b>	<b>10,626</b>	<b>41.4%</b>	<b>17,358</b>	<b>67.0%</b>	<b>8,568</b>	<b>33.0%</b>	<b>1,147</b>

- Approximately 17,358 (67.0%) children gained adequate weight in 3 months ( $\geq 900\text{g}$ ) and 15,066 (58.6%) were fully rehabilitated and graduated from PDH

# Percentage of PDH participant children underweight during PDH follow-up in 7 countries



## Conclusion

- Size of Bangladesh's programme indicates that **effective scale-up of PDH is possible**
- **Sustained reduction** of 47.6 percentage point in underweight at 6 month indicates both **successful rehabilitation of underweight children and continued behaviour change** of primary caregivers through PDH
- **Further research is needed** to strengthen the evidence for PDH

# Acknowledgements

## **World Vision Offices:**

Bangladesh (Md. Mezanur Rahman et al.)

Burundi (Aristide Madagasha et al.)

Kenya (Daniel Muhinja et al.)

Laos (Nivone Sonevilaysack et al.)

Mozambique (Antonio Santana Dias et al.)

Nepal (Khagendra Bhatt et al.)

Niger (Naroua Ousmane et al.)

Regional (Esther Indriani and Sisay Sinamo)

**PDH Database developers** (Paul Shin and Aaron Mok)

**Ministry of Health, Local CBOs, partners, and PDH volunteers who make all this work possible!!**



**Thank you!**



**Diane Baik**

[diane\\_baik@worldvision.ca](mailto:diane_baik@worldvision.ca)

Nutrition Centre of Expertise (NCOE)

Sustainable Health Team

World Vision International

[www.wvi.org/nutrition](http://www.wvi.org/nutrition)