



# Positive Deviance for Nutrition:

## A grassroots approach to reduce and prevent malnutrition

Demonstrating impact, cost effectiveness, community acceptance and best practices in preventing malnutrition, rehabilitating underweight children and promoting sustainable nutrition practices among rural communities in Zambia and Ethiopia

People in Need, October 2019



Alliance 2015

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## What enables some poor households to have healthy and well-nourished children?

### We must learn what they are doing right!

Economies of low income and lower-middle income countries are growing and yet many countries have alarming numbers of children suffering from malnutrition.

People in Need (PIN) has used the Positive Deviance approach to promote positive Infant and Young Child Feeding practices and improve nutrition in its countries of implementation:

**In Zambia, 40%** of children under 5 years are stunted

**In Ethiopia, 38%** of children under 5 years are stunted

**In DR Congo, 42%** of children under 5 years are stunted

**In Myanmar, 29%** of children under 5 years are stunted

PIN uses a health system strengthening approach in which the health extension structures of the Ministry of Health are engaged and trained to facilitate the positive deviance activities, ensuring long-term sustainability. This package is aimed at government and non-governmental staff and provides the following information:

#### What is Positive Deviance and PD/Hearth?

#### Outline of PIN target countries and projects

#### Implementation experience in Zambia and Ethiopia

#### Impact of Positive Deviance in target communities

#### Methodology for rolling-out PD/Hearth

#### Resources required

#### Best practices and lessons learnt

#### Templates for monitoring, evaluation and quality assurance





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## WHAT IS POSITIVE DEVIANCE?

**Positive Deviance (PD)** is based on the principle that some solutions to prevent malnutrition already exist within the community and just need to be discovered. Behaviors change slowly, so the solutions discovered within a community are more sustainable than those brought into the community from the outside. During a Positive Deviance Inquiry the community representatives and project staff explore together to identify the practices of the Positive Deviant households that enables them to have well-nourished children.



## WHAT IS PD/HEARTH?

**Hearth** or home is the location for the nutrition education and rehabilitation sessions  
**PD/Hearth sessions aim to:**

- **Rehabilitate** identified malnourished children in the community
- Enable their families to **sustain the rehabilitation** of these children at home on their own
- **Prevent** malnutrition in future children born in the community

**With the information collected in the Positive Deviance Inquiry, together with the community we**

1. Develop Hearth menus using foods seen in Positive Deviant households and other nutrient-rich, locally available and affordable foods
2. Conduct 12 days long Hearth Sessions every 1-2 months
  - only for small groups of moderately malnourished children & their caregivers
  - prepare together and feed children with Hearth menus
  - discuss the other positive deviant practices e.g. hygiene practice

## PIN AND PD/HEARTH APPROACH IN AFRICA AND ASIA

In the **DR Congo**, PIN has been providing emergency assistance, particularly focusing on health and nutrition; combining it with food security and WASH activities. PD/Hearth approach primarily concerns the project Women's Integration via Social Empowerment (WISE) addressing the nutrition crisis in the Health Zone of Kabambare, Maniema Province. It is an integral part of the intervention outcome, focusing **on improving the ability of community members, particularly women, to prevent malnutrition of their children**. Established support groups meet regularly to discuss 1-2 priority topics (identified during the PD Inquiry) providing an opportunity for in-depth discussions to overcome the practical barriers to adopting new practices. The meetings also integrate activities such as cooking demonstrations, using recipes from readily available local food identified during the PDI. The action has been implemented from April 2019 to March 2020 under the financial support of Global Affairs Canada and the donation of nutritional supplies from UNICEF.

**Zambia** has been focusing on improving nutrition among young children since the opening of PIN's Country Office in 2017, as a part of the Women in Innovation (WIN) project. The overall objective of the project is "To improve nutrition and strengthen resilience of vulnerable population through integrated sustainable innovations in Western Province, Zambia". The PD/Hearth approach was an integral part of the Result 2 of the project, focusing **on improving the capacities of community health volunteers and health centre staff to effectively conduct nutrition and health behaviour change activities in 6 target communities of Ndoka Ward, Kalabo District**.

PIN **Myanmar** has been implementing nutrition-sensitive food security and livelihood projects in the humanitarian context of Rakhine State since 2018. The Positive Deviance methodology has been first applied as part of multi-sectoral humanitarian assistance project funded by the Myanmar Humanitarian Fund (MHF) in two townships in Central Rakhine in order to **enhance resilience of affected Rakhine and Muslim communities to restore, protect and improve livelihood opportunities and to improve their nutritional practices**. The Positive Deviance methodology has since then been integrated to other projects to inform their nutrition-sensitive project activities and promote positive practices present community. The first is MHF-funded multi-sectoral project in rural communities Northern Rakhine (October 2019-July 2020) and the other is multi-sectoral project implemented in peri-urban areas of Yangon (October 2019-September 2022).

**Ethiopia** has been implementing malnutrition prevention-oriented interventions since November 2014. Two projects "Integrated Programming for Improved Nutrition" (November 2014 - April 2018) and "Strengthening Livelihoods and Nutrition through Improved Community Services" (September 2017 - December 2020) have contributed to the reduction in malnutrition in children under 2 years in the 12 Wards (kebeles) of 3 districts (woredas) of SNNP Region. The current project has been focusing mainly on improving the capacity of health extension workers, health development army volunteers as these groups are responsible to effectively implement nutrition and health behaviour change activities in Ethiopia. In this way, **PIN makes a sustainable improvement to the health extension system, which in turn contributes towards improved dietary practices and nutrition**.



## CHANGES IN THE TARGET COMMUNITIES DUE TO THE INTRODUCTION OF THE POSITIVE DEVIANCE APPROACH



Number of children rehabilitated out of malnutrition



Change in attitude, awareness and acceptance of the local communities towards promoted nutrition practices

### Number of children rehabilitated during PD/Hearth sessions

#### Ethiopia

- 45 PD/Hearth cycles convened by health volunteers in 13 months (June 2018 – June 2019) with no external subsidy
- 200 g weight gain was the rehabilitation criteria for the child to graduate after 12 days of PD/Hearth sessions
- 1076 children participating in PD/Hearth sessions conducted by health volunteers in 13 months (June 2018 – June 2019)
- 1045 (97%) children rehabilitated within 12 days
- 989 (95%) of rehabilitated children not relapsing into MAM-status after 21 days of monitoring
- 21.5 USD investment cost per child rehabilitated from MAM, if up-scaled this could be reduced to 3.2 USD investment cost per child

#### Zambia

- 16 PD/Hearth cycles convened by health volunteers in 13 months (May 2018 – June 2019) with no external subsidy
- 200 g weight gain was the rehabilitation criteria for the child to graduate after 12 days of PD/Hearth sessions
- 132 underweight children participating in PD/Hearth sessions conducted by health volunteers in 13 months (May 2018 – June 2019)
- 76 (58%) underweight children rehabilitated within 12 days
- 57 (75%) of rehabilitated children not relapsing into MAM-status after 3 months of monitoring
- 9.1 USD investment cost per child rehabilitated from MAM



## Change in attitude, awareness and acceptance of the local communities of the promoted nutrition practices

### Now I can cook four nutritious types of porridge for my child.

Mutete Chembwete is a 21 year old, young, single mother of three children in Nawinda community. Aged 1 year and a half, Mutete's second son, Nambayo Musenge, was discovered to be underweight during the monthly growth monitoring for young children. Mutete was invited to participate in the Positive Deviance (PD) hearth session for the community. Now that Mutete's child is no-longer underweight, she happily says, *"I have observed that my child has gained a lot of weight and most importantly, I can also teach others on the how to make the different nutritious foods from our local sources."*

After the 12 days sessions, she was so happy with the weight gain of her child that she has become a "teacher" in her community. She cooks different nutritious recipes for her child, where she invites the people in her village to watch and taste what she cooks. Mutete has become a proud teacher and replicator of the PD hearth recipes in her village where she teaches everyone, what she had learnt from the 12 days hearth session. *"I use my own food to prepare meals for my child, I also invite the whole village to taste my food, I give to both mothers and children to taste my food,"* says Mutete.



### Baby Kalkidan's Story: PD/Hearth session making a difference in children's Nutritional status

Baby boy Kalkidan was born in 2018 in Amba kebele in Dilla Zuria Woreda, in Gedeo Zone of Southern Nation Nationalities People region of Ethiopia. His mother Asnakech Zerfu and father Ato Kifalew Alemu are farmers supporting baby Kalkidan and his two siblings on 3 hectares of land. When baby Kalkidan was 13 months, he attended the regular weighing by the health extension worker and was found moderately malnourished (MAM) as he weighed only 8.8 kg. Asnakech was invited to attend the PD/Hearth sessions held at Amba health post and attended 12 consecutive days of low-cost cooking and feeding sessions, where she

learnt about new ways of preparing enriched porridge using locally available ingredients she and her family can afford. At the end of the 12-days feeding session, baby Kalkidan gained 0.5 kg additional weight, weighing 9.3kg, and successfully graduated the session. After 21 days from the end of the sessions, Kalkidan was still gaining weight reaching 10.1 kg, gaining 1.3 kg since the day he was identified as MAM. Asnakech describes the visible change on her

child's nutritional status as follows: *"I was amazed to see my child's rapid weight gain and nutritional change, simply by eating a nutritious menu of locally available and affordable foods."* Finally, Asnakech confirms that she learned a lot during 12 days she spent in PD Hearth session, especially how to feed the child with a balanced diet and how to mix food to prevent the child from choosing only kinds of food she prefers. She said that she also learned how to improve hygiene in her household. Asnakech is now practicing at home what she learned from the hearth session and promises to share lessons she learned with her neighbors.



## ROLLING OUT POSITIVE DEVIANCE IN COMMUNITIES IN 7 STEPS

The following 7 steps describe how PD/Hearth approach was rolled out in the Zambian communities. In Ethiopia, same methodology was used.

### 1. Wealth Ranking

PIN staff, Community Leaders and Health Workers discussed together to define criteria of rich, average, poor and very poor households.

	RICH	AVERAGE	POOR	VERY POOR
	Iron roof on the house House doesn't have a mud floor Owns assets such as: mattress, cattle, oxen, TV, solar panel, batteries, radio	Grass thatched roof (some may have iron roof) Mud floor. Less valuable assets	Grass thatched roof, poor construction Mud floor. Lack of good clothes. No productive assets (even no chickens)	Poor construction or even no shelter Mud floor. Lack of good clothes. No productive assets (even no chickens)
	Owns land in upland and lowland areas. Grows a diversity of crops	Owns land in upland areas, some may have lowland land as well	Cultivates small land e.g. 0.5 lima	Very little or no cultivation. Sometimes receives food from neighbours.
	Has a small business such as: a shop, fishing, cattle	Partially successful business	"Piece work" / daily labour work e.g. cutting grass	No productive activities
	Children go to secondary school Sometimes can afford to send children to college	Children go to primary school, but irregular attendance/drop out of secondary school	Children drop out of school during primary school	Children drop out of school during primary school
	Household size is about 4	Household size is 5-6	Household size up to 9-10	Varied size, may have disability or mental illness
	3 meals/day	2 meals/day (lunch and supper, irregular use of oil)	1 meal/day (no cooking oil)	1 meal/day (no cooking oil).

### 2. Identification of PD, ND and NPD Households

Community Health Workers and Volunteers conduct weight screening of under 5 children every month in their community. They use weight for age, by plotting weight against age (in months), on a growth card to determine the nutrition status of a child. PIN therefore proposed to use the same method of measurement (weight for age z scores) to identify malnourished children. Often we find that the coverage of the weight screening of under 5 is not complete, therefore PIN staff supported the Community Health Volunteers to ensure maximum coverage of the weight screening data that would be used for this research.

PIN established the following definitions:

PD = Positive Deviant = Poor/Very Poor households with a child with a well-nourished child (>-1 Weight for Age z-score)

ND = Negative Deviant = Average/Rich households with a malnourished child (<-2 Weight for Age z-score)

NPD = Non-Positive Deviant = Poor/Very Poor households with a malnourished child (<-2 Weight for Age z-score). In case we can't find enough NDs for the survey, we also can use NPDs.

The table provided in Annex A shows the results of assigning each household in the community to a wealth group, the weight and age of each child, their Weight for Age z score and the assignment to PD, ND and NPD status. This data also provides baseline information on the prevalence of undernutrition in the community.

A summary of the results from one community is provided here:

	Number	%
Children severely underweight (<-3 z score)	4	4.9 %
Children moderately underweight (<-2 and >-3 z score)	9	11.1 %
Total children underweight (<-2 z score)	13	16.0 %
	Number	%
Rich households	9	11.1 %
Average households	31	38.3 %
Poor households	36	44.4 %
Very poor households	5	6.2 %
	Number	%
Positive Deviants	23	28.4 %
Negative Deviants	7	8.6 %
Non-Positive Deviants	5	6.2 %

### 3. Conducting the Positive Deviance Inquiry

Household observations were conducted to understand the practices of the Positive Deviant households that enables them to have well nourished children, and explore the differences in practices between Positive and Negative Deviant households. Teams of 2-3 were composed of PIN staff, community leaders and community health workers/volunteers. Each team was allocated 3 households to visit: 2 Positive Deviant and 1 Negative Deviant. In the cases that we could not find the ND Households members, and there weren't other ND Households available, they were replaced with a Non-Positive Deviant household (NPD). NPD households are poor/very poor households that have an underweight child so the comparison between them and PD households that have similar wealth status as NPDs but with well-nourished children remains interesting. The teams spent 1-2 hours observing the practices in the home and talking with the family members primarily over the lunch meal times in order to observe feeding practices. With the objective of trying to capture the real practices, the teams had to ensure the household members felt relaxed and free to go about their usual routine. The household visit protocol is provided in Annex B. The observation report form had 3 main sections to it: Feeding Practices, Caring Practices and Health Practices. It is provided in Annex C.



Questioning gender norms: PIN male staff helping with pounding



Pounded fish being sieved to remove bones



A variety of locally available nuts and beans rich in protein and fat



Pumpkin leaves are very nutritious dark green vegetables.



Locally available fish roasted directly onto the remnants of the hot coals, after the nsima is cooked

## 4. Key findings from the Positive Deviance Inquiry

PIN staff, community leaders and the health workers/volunteers analysed the results of their household findings together. Each group of practices (feeding, caring and health) were discussed and each team compared the differences between PD and ND/NPD households they had visited. Although there are many possible practices under each of these groups, the practices listed below are the key differences found between Positive and Negative/Non-Positive Deviants.



### Positive Deviant Feeding Practices

- The caregiver actively supervises feeding and encourages the child to eat
- Good management of feeding when the child has a low appetite, especially when the child is sick
- Providing freshly cooked food for the child (rather than e.g. cold food from the evening before)
- Eating a variety of different food including: nuts (Groundnuts, local Mungongo nuts), small fish, dark green leafy vegetables (amaranthus and pumpkin leaves), tomatoes, cow peas and other local “traditional” peas, hibiscus (sindambi/lumanda) as well as staples (nshima which is ground maize or cassava).



### Positive Deviant Caring Practices

- The father is engaged in the nutrition of the child:
  - ensuring nutritious food is available,
  - supervision of the child eating if the mother is busy,
  - interacting and playing with the child.



### Positive Deviant Health Practices

- Correct treatment of diarrhea:
  - Providing Oral Rehydration Salts (with Zinc) available for free from the health clinic
  - Providing a thin liquid porridge
  - Continuing to breastfeed during the illness
- A clean compound and correct disposal of child faeces around the home

Based on the foods found in Positive Deviant households the following recipes were developed:

1.

#### Sorghum, fish and ngongo nut porridge

Pound the ngongo nut with some water and sieve the juice after

Bring 2 cups ngongo nut juice to boil, then add another cup of water

Mix 1 cup of sorghum flour in the pot

Add in 2 table spoons of pounded fish

Simmer for 30 minutes and serve when ready

2.

#### Sweet potatoes mixed with pounded roast groundnuts

Peel about 200g of sweet potatoes and boil

Roast 1 cup of groundnuts and pound them

Add the cooked potatoes in the mortar and pound them together, then serve



3.

#### Pounded rice, fish, groundnuts and local beans porridge

Bring to 2 ½ cups of water to boil

Add in 1 cup of pounded rice

Add in 1/4 of cup of pounded local beans and 1/4 of cup of pounded groundnuts

Add in 2 table spoons of pounded fish

Serve when ready





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## 5. Next steps agreed with the community to set up PD Hearth sessions

Identify underweight children during the next weight screening day (locally called the “under 5”, happens at the end of every month)

### Inform the households of the underweight children that:

- Their child’s weight is too low
- They are invited to a 12 day rehabilitation session
- Invite both parents, if the father is not there invite grandmother or other secondary caregiver
- We will use locally available foods during the sessions and ask them what food they could spare for the session
- They should bring the child’s weight growth monitoring card
- The date, time, location (agree a place that is convenient for all)

### Organise materials needed for the sessions:

- Cooking equipment and plates for participants
- Salter weighing scale, weighing bag and pole if needed
- Attendance register and place for recording weights
- Water, soap and handwashing facility

## 6. The key steps of a PD Hearth session developed with the community



### 1. Introduce the session.

We are here to:

- Learn how to cook nutrient-rich meals for children from locally available food
- Talk about good feeding and hygiene practices
- To rehabilitate our children from Moderate Acute Malnutrition (MAM) with locally available food and be able to prevent it from happening again

### 2. Children should be weighed on the 1st, 6th and 12th day.

Say the result to the mother (confidentially) and record in the attendance register. We should see a weight gain of at least 400 grams.

### 4. Cook together

### 5. Before eating, talk about handwashing and the importance of preventing diarrhea

(in future sessions the treatment of diarrhea can also be discussed)

### 3. Explain the different food groups and what they do.

Ask: where can you get the foods of these different food groups from?



### 6. Everyone washes their hands with soap

### 7. Taste the food

(this is a cultural obligation)

### 9. Discuss the following questions

(you can pick 1 or 2 from the list and discuss others on other days):

- What do you do when your child is not eating enough?
- How many times a day should the child eat, for example, 1 year old?
- What role can the father play if the mother is not around so the child can eat?

### 8. Serve the food:

- show the quantity of food that is enough for the children
- encourage the caregivers to actively feed and supervise the children while they eat



## 7. Monitoring and Follow Up

- In the case that the child does not gain enough weight between the 1st and 12th day, follow up household visits by the Community Health Volunteers should be carried out.
- In the case that the child loses weight between the 1st and 12th day, discuss with the caregiver the different key practices: e.g. whether they were eating more, active supervision and encouragement of the child eating at home. In serious cases the Community Health Volunteer should refer to the health post.
- Remember to ensure the work of the Community Health Volunteers/Workers is recognised by the District Health Office. This is essential for the sustainability of these sessions.
- Monitor the coverage of the monthly “under 5” weight screening sessions to make sure all children under 5 are being weighed monthly. Discuss with the Community Leaders and Health Workers/Volunteers any problems in coverage and how to solve them.
- Agree with the Community Leaders and Health Workers/Volunteers the date of the next set of PD Hearh sessions.
- Record the names and weight data from the sessions into an Excel file. In the next set of sessions check whether there are any children that have relapsed i.e. they have already attended sessions because they were underweight before, and now they are underweight again. Record the names and number of children relapsed and make sure they receive extra household visits to ensure the good practices discussed and shown in the PD Hearh sessions are taken home.
- Compare the prevalence of underweight children at the end of the project to the prevalence found during the Positive Deviance Inquiry (see section 2 of this report) to see if your sessions have had an impact. Remember that prevalence of underweight children can be influenced by seasonal factors and ideally the comparison should be done with data from the same month of the year.



## WHAT RESOURCES ARE NEEDED?

The implementation of the PD/Hearth methodology within a project requires resources for:



**Training** of health extension and government workers



Procurement of **cooking sets**



**Human resource** cost for staff who will provide the expertise, conduct trainings and supervise the implementation including follow-ups and quality checks

### Training for health extension and government workers

- Stationeries
  - Flipcharts
  - Plain paper
  - Clip pads
  - Pens and pencils
- Training venue rent (optional)
- Refreshments and allowances for participants
  - Snacks
  - Lunch
  - Water and drinks
  - Perdiems and travel allowances as required by the national guidelines
- Locally available food for cooking demonstration (optional)

#### Costs:

Total cost of 3 day training for app. 15 community health volunteers in Zambia: approximately **210 USD** (low cost option)

Total cost of 3 day training for app. 15 health extension workers and government officials in Ethiopia: approximately **1050 USD** (higher cost option – including perdiems, allowances and training venue hire)

## Cooking sets

The contents and price of the cooking sets may differ based on the local context and location specific requirements. See below the examples of contents of cooking sets from Zambia and Ethiopia.

Indicative cost for one cooking set in Zambia serving one community managed by 1-2 community health volunteers is **80 - 105 USD** for minimum requirements. Each cooking set assists approximately 10 – 15 malnourished children and their parents during one PD/Hearth cycle.

In Ethiopia, the cooking sets were designed for one health post serving several areas and communities. Each health post received the cooking sets, with a health post covering approximately 5,000-10,000 people.

#### Minimum requirements for the cooking set:

- 3 Steel washing basins
- 4 Large pots 9"
- 3 Medium pot 8"
- 1 Frying pan
- 1 Bucket
- 2 Kitchen knives
- 2 Tea spoon sets

- 2 Table spoon sets
- 4 Serving spoons
- 6 Cooking spoons
- 2 Sieves
- 1 Mortar and pestle set

#### Optional utensils for the cooking set:

- Trunk for storage of all the cooking utensils
- Jerrycans
- Chopping board
- Grater
- Jug/Pitcher
- Cleaning materials

## Human resources

Human resources will largely depend on the scale of the project. The HR costs will depend on the salary scales and internal rules of the implementer.

#### Zambia (small scale project) working in 6 communities in 1 ward of 1 district:

- Project Manager (full time - 100%)
- Project officer (full time - 100%)
- Senior supervision based in the country (Head of Programmes) (% of time depending on context)
- Global Nutrition advisor (% of time depending on context)

#### Ethiopia (larger scale project) working in 12 wards (kebele) of 3 districts (woreda):

- Project Manager (full time - 100%)
- Field Coordinator (full time - 100%)
- 6 Field Officers (full time - 100%)
- Senior supervision based in the country (Head of Programmes) (% of time depending on context)
- Global Nutrition advisor (% of time depending on context)

## BEST PRACTICES AND LESSONS LEARNT FROM ZAMBIA AND ETHIOPIA

### Zambia

- ✓ Inviting all mothers with children to participate in PD/Hearth sessions to reduce stigma and foster all community involvement
- ✓ Explore the possible involvement of “role model mothers” in facilitation of PD/Hearth sessions
- ✓ Emphasize to mothers on the importance of ensuring the recommended meal frequency for children during the day to avoid skipping meals
- ✓ Pay particular attention to the required composition of nutritious meal
- ✓ Providing an extra training to community health volunteers on how to conduct nutrition-related home counselling visits
- ✓ Providing an additional training to community health volunteers on specific types of malnutrition, its identification and treatment
- ✓ Provide incentives for community health volunteers such as bicycles, T-shirts or gumboots
- ✓ Organize community celebration to recognize the work of community health volunteers by issuing incentives and training certificates
- ✓ Include Salter scales and measuring cups into the support package alongside the cooking set
- ✓ Involving nutritionists from the key government departments during the PD/Hearth trainings
- ✓ Conduct exposure and monitoring visits with key government stakeholders
- ✓ Seek ways how PD/Hearth can be incorporated into on-going government initiatives such as results based incentives programmes



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## Ethiopia

- ✓ Ensure that every PD/Hearth Session is supervised by health volunteers and the implementer using Quality Standard Checklist (see Annex D)
- ✓ Guarantee close follow-up, monitoring and high motivation of the health extension workers
- ✓ Ensure that the venue of PD/Hearth session is free from animals or any other contamination which may have negative impact on hygiene and sanitation
- ✓ Emphasize on the hygiene and sanitation component of PD/Hearth session and access to safe and clean water at all intervention sites
- ✓ Use WHO weight for age minimum standard for conducting weight measurements for children under 2 years
- ✓ Develop and provide monitoring and evaluation tools to monitor and evaluate the impact of the intervention
- ✓ Encourage caregivers to engage in vegetable gardening and promotion of home gardening
- ✓ Implement PD/Hearth as part of the multi sectoral intervention for effective and efficient nutrition results
- ✓ Integrate the intervention with government health and nutrition policies, including health extension packages
- ✓ Engage government to scale up the approach to other areas



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