



# Community Involvement & International Collaboration for Impacting Health Along The Life Course

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# OVERVIEW

## PART 1

**Impacting  
Health along  
The Life Course**

## PART 2

**Lessons  
Learned from  
Diarrheal  
Disease in  
Children**

## PART 3

**The Value of  
International  
Collaboratio  
n**



# Impacting Health along The Life Course

# Health in SDG Era



**Goal 3:**  
Ensure healthy lives  
and promote  
well-being  
**for all at all ages**

# What do we need to understand?



one's health & well being are shaped by **multiple factors**.

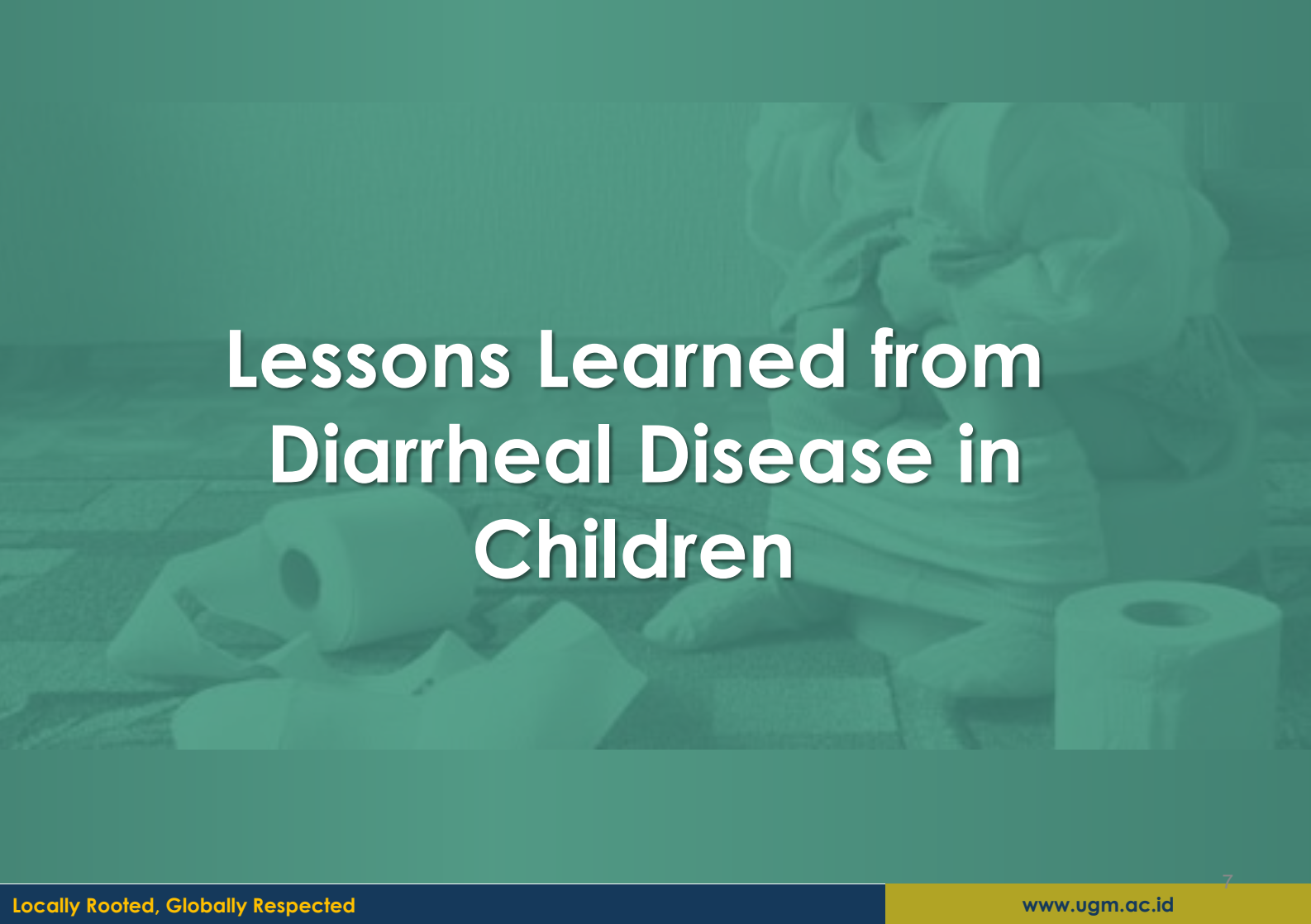


Identify culturally supportive and enriching environment from an **early age** that may positively influence future health and well-being

# The Purpose....

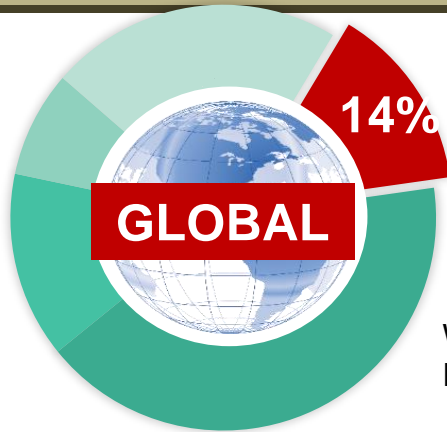


Kuruville, S, Sadana, R, Montesinos, et al. 2018, 'A life-course approach to health: synergy with sustainable development goals', *Bulletin of the World Health Organization*, vol. 96, no. 1, pp. 42–50.  
Image: googleimages

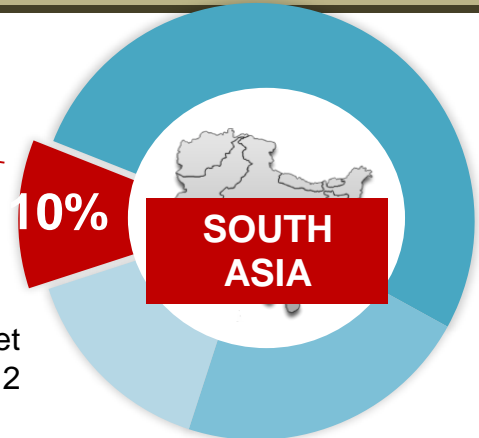
A child is sitting on a toilet in a bathroom. A roll of toilet paper is visible on the floor next to the toilet. The image is overlaid with a semi-transparent teal filter.

# Lessons Learned from Diarrheal Disease in Children

# DIARRHEA? Major Causes of Child Mortality!



**Diarrhea**



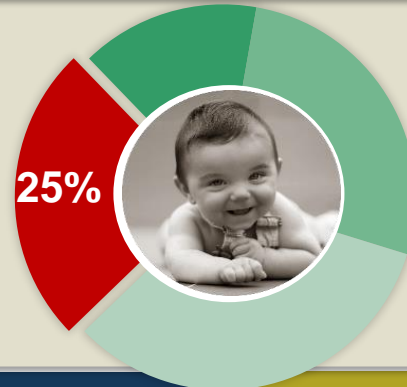
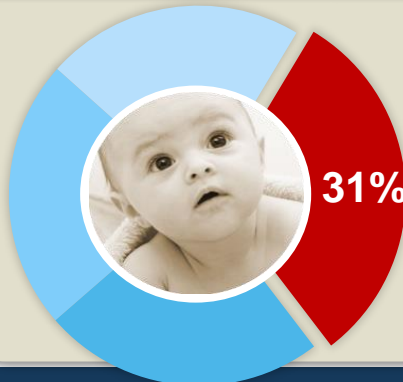
WHO: MDGs  
Report. 2010  
(modified)

Liu et al, Lancet  
May 2012

## INDONESIA

29 Days - 11 Mths

1 - 4 Yrs







# Diarrhea is a threat to a child's quality of life


## Updating the DALYs for diarrhoeal disease



### Height

 Growth **shortfalls of up to 8.2 cm** by age 7 years have been attributed to recurrent episodes of diarrhoea during early childhood<sup>1</sup> 

### Fitness

**Fitness impairment scores are substantially reduced** 4–6 years following recurrent episodes of diarrhoea during early childhood<sup>2</sup> 

### I.Q.

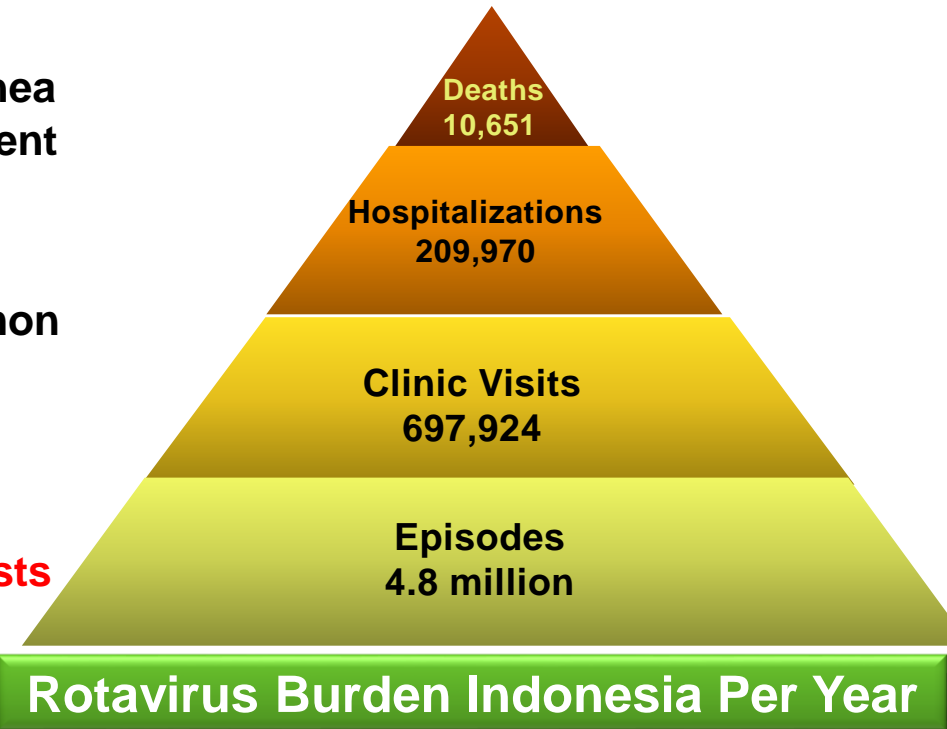
Repeated episodes of diarrhoea in the first 2 years of life can lead to a **loss of IQ points<sup>2,3</sup> and an additional 12 months of schooling by age 9 years**

DALY, disability adjusted life years

1. Moore *et al. Int J Epidemiol* 2001; 30: 1457–64;
2. Guerrant *et al. Am J Trop Med Hyg* 1999; 61: 707–13;
3. Niehaus *et al. Am J Trop Med Hyg* 2002; 66: 590–3

# Disease Burden of Rotavirus in Indonesia U5 (Epidemiology & Cost analysis)

- Rotavirus positive
  - 60% (1345/2240) of hospitalized with diarrhea
  - 41% (73/176) of outpatient with diarrhea
- 72% were 6-23 months
- >> Severe vomiting & dehydration → death common with rotavirus
- Most common types
  - G1, G9, G2
  - P[6], P[8], P[4]
- **Total direct and indirect costs = US\$19.5 million/year**



6 Provincial/teaching hospitals

Soenarto, Y, Aman, AT, Bakri, A, et al. 2009, 'Burden of Severe Rotavirus Diarrhea in Indonesia', *The Journal of Infectious Diseases*, vol. 200, no. s1, pp. S188–S194.  
Wilopo, SA, Kilgore, P, Kosen, S, et al. 2009, 'Economic evaluation of a routine rotavirus vaccination programme in Indonesia', *Vaccine*, vol. 27, pp. F67–F74.

# Similar Burden of RV Infection in Developed as well as Developing Countries

While considered important for health, improved sanitation, personal hygiene, and other well known risk factors are **inadequate** to control rotavirus infection.

**“RV Vaccination is needed”**

Together, a vaccination program can be very successful to prevent further transmission.

# STEPS TAKEN

Five Steps to Treat  
Diarrhea  
(LINTAS DIARE)

+

Implementation of RV  
Vaccine



# COMMUNITY ACCEPTANCE & ETHICAL ISSUES

## Oral Rehydration Therapy for Diarrhea Related Dehydration

### Problems

unsatisfactory  
result from  
WHO ORS

### Solution

Research -  
modified ORS  
from home  
based solutions

### Output

increase  
community  
acceptance and  
implementation  
of ORS

### Outcome

Decrease  
children  
mortality &  
morbidity due  
to dehydration

# The current vaccines are...



In an international forum, we (Australian-Indonesian team) attended, suggested that **RV vaccines should be developed in developing countries** especially in a country which has internationally recognized vaccine industry (China, India, & Indonesia)

1. Suwantika, AA, Zakiyah, N, Lestari, K et al. 2014, 'Accelerating the introduction of rotavirus immunization in Indonesia', *Expert Review of Vaccines*, vol. 13, no. 4, pp. 463–472.
2. Soares-Weiser, K, MacLhose, H, Bergman, H et al. 2012, 'Vaccines for preventing rotavirus diarrhoea: vaccines in use', in The Cochrane Collaboration (ed), *Cochrane Database of Systematic Reviews*, John Wiley & Sons, Ltd, Chichester, UK, p. CD008521.pub2, accessed April 28, 2019, from <<http://doi.wiley.com/10.1002/14651858.CD008521.pub2>>.

# COMMUNITY ACCEPTANCE & ETHICAL ISSUES

## On Existing RV Vaccine

### Religious and community leaders' acceptance of rotavirus vaccine introduction in Yogyakarta, Indonesia: a qualitative study



Retna Siwi Padmawati<sup>1</sup>, Anita Heywood<sup>2\*</sup> , Mei Neni Sitaresmi<sup>1</sup>, Jarir Atthobari<sup>1</sup>, C. Raina MacIntyre<sup>2</sup>, Yati Soenarto<sup>1</sup> and Holly Seale<sup>2</sup>

#### Abstract

**Background:** In Indonesia, oral rotavirus vaccines are available through the National Immunization Program (NIP). New immunization program introduction among religiously observant Muslims in Indonesia, vaccine acceptance during manufacturing and the absence of *halal* labeling by Majelis Ulama Indonesia (MUI) are important resources for community leaders regarding the use of medicines, including vaccines. This study explored the acceptance of rotavirus vaccine to introduce to the community.

**Methods:** Twenty semi-structured in-depth interviews were conducted with representatives from two districts of Yogyakarta Province.

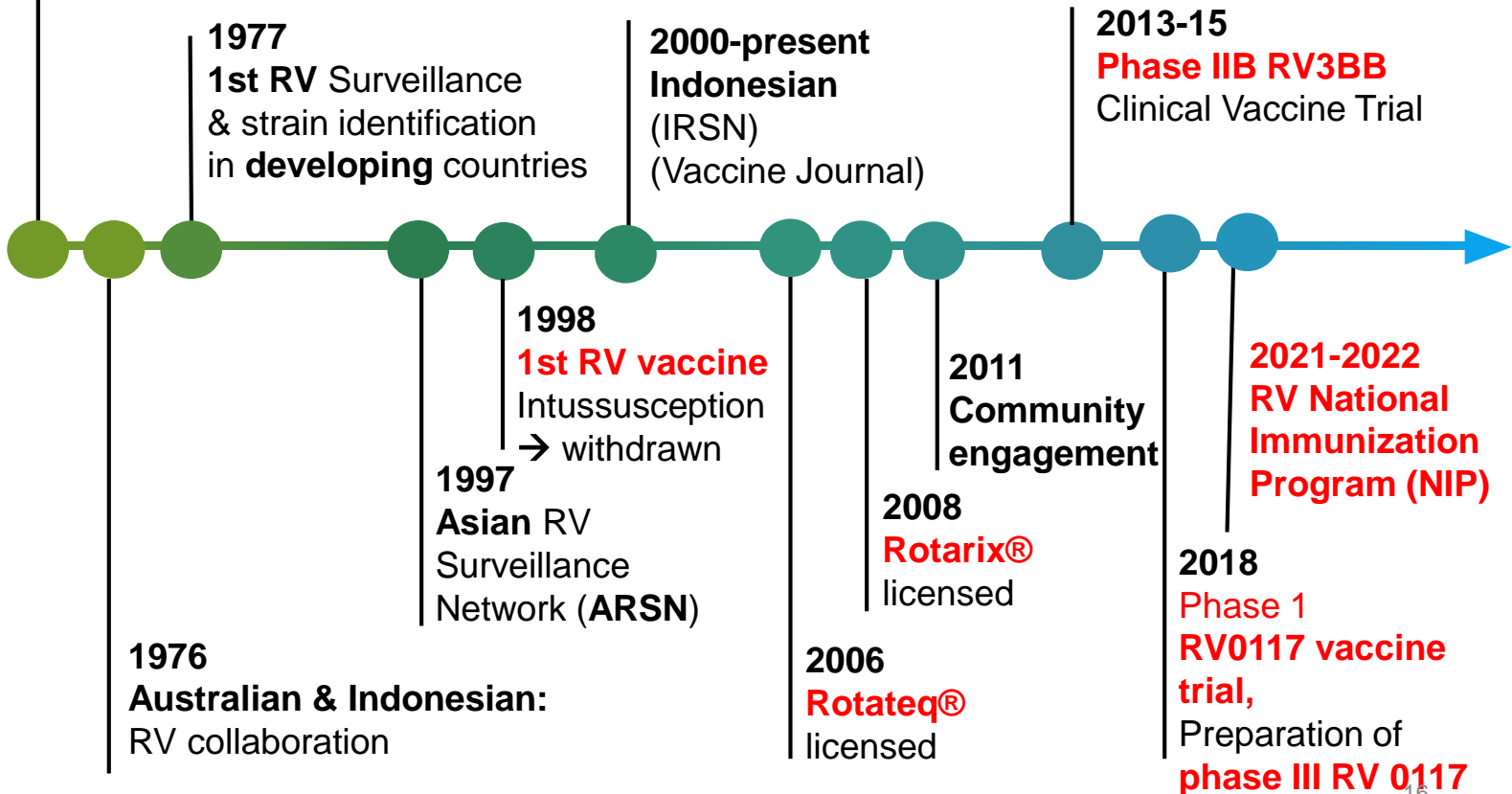
**Results:** Although there was recognition childhood diarrhea, participants were not aware of the vaccine. Participants believed a *halal* label was important for trust in their government and leaders. Participants considered the absence of a *halal* label a barrier to vaccine to the community post-labeling.

**Conclusions:** This study highlights the need for better communication about the potentially important role of religious and community leaders in the Muslim community of Yogyakarta, Indonesia. These findings suggest that vaccine introduction in Indonesia.

**Keywords:** Rotavirus, Rotavirus vaccine, Immunization, Acceptance

**Communities** are different from one to other settings. They need specific treatment to enable product or findings to be **implemented smoothly.**

# How's the ongoing process? (almost 5 decades)





# Human Neonatal Rotavirus Vaccine (RV3-BB) to Target Rotavirus from Birth

J.E. Bines, J. At Thobari, C.D. Satria, A. Handley, E. Watts, D. Cowley, H. Nirwati, J. Ackland, J. Standish, F. Justice, G. Byars, K.J. Lee, G.L. Barnes, N.S. Bachtiar, A. Viska Icanervilia, K. Boniface, N. Bogdanovic-Sakran, D. Pavlic, R.F. Bishop, C.D. Kirkwood, J.P. Buttery, and Y. Soenarto

## ABSTRACT

### BACKGROUND

A strategy of administration of rotavirus gastroenteritis (RGE) to a neonatal schedule

### METHODS

We conducted a randomised controlled trial to evaluate the efficacy of an oral rotavirus vaccine in preventing RGE in a neonatal schedule (8 weeks, 14 weeks, 20 weeks, 26 weeks) in the per-protocol population of vaccine or placebo recipients in an intention-to-treat population.

**Result of vaccine efficacy:**  
**75%** in the neonatal-schedule group ((95% CI: 44 to 91),  $p < 0.001$ )

**Result of vaccine response:**  
**78 of 83 participants (94%)** in the neonatal-schedule group .



# Now (2019)



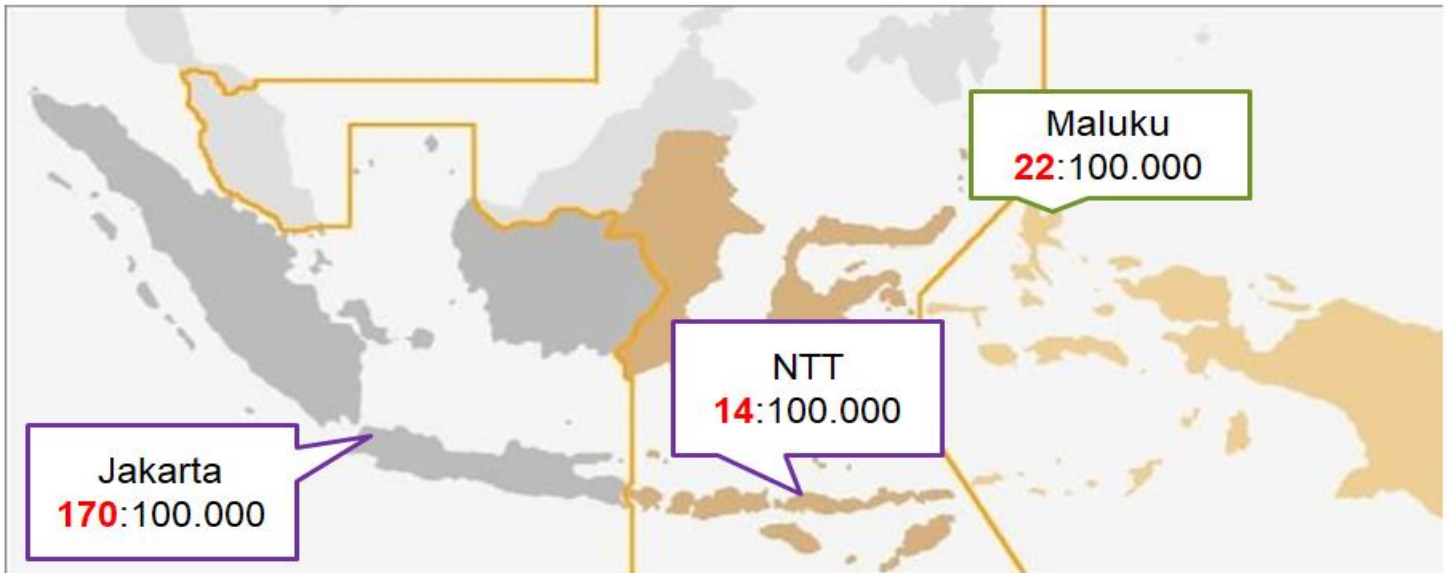
# Integrating Services Post (*Posyandu*) to Reduce the Impact of Maldistribution of Health Workers

Program established in 1980 → in 2009 : almost 300,000 Posyandus

Comprehensive health services

From the community → for the community

Basic foundation = ***gotong royong*** (mutual cooperation)



**Density of medical doctors per population (2017)**

Resource : Indonesian Medical Doctors Council

# How do we involve the community?

Step 1

**Recruitment** of  
the volunteers

Step 2

**Training** of the  
volunteers to  
solve basic health  
care issues

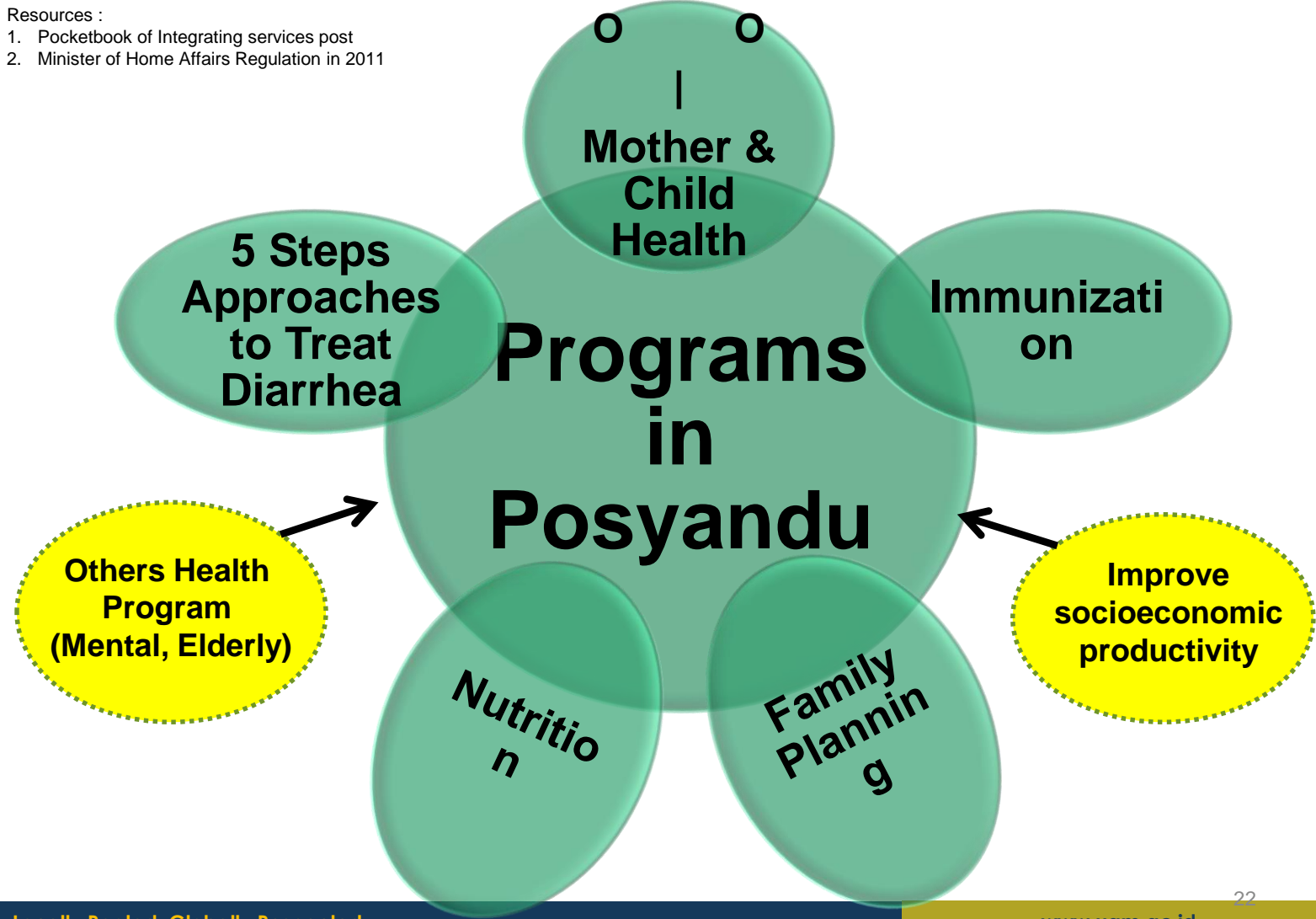
Step 3

**Involvement** in  
the community to  
increase their  
health status

supported and supervised by government health center

Resources :

1. Pocketbook of Integrating services post
2. Minister of Home Affairs Regulation in 2011



# Posyandu's Activity



# Posyandu meets The First Lady





# Posyandu meets Bill & Melinda Gates Foundation



# The Value of International Collaboration



# The Gate Opener

## DR. JON ROHDE (ROCKEFELLER FOUNDATION)

### 1972-1979



**DIARRHEA**

R. BISHOP & G. BARNES



Pediatric Gastrohepatology

Julie Bines et all

1978



**TB**

WHO



Pediatric  
Neurology & Respiriology

1980



**DHF**

SCOTT HALSTEAD (WHO)



Pediatric Trop Dis  
Wolbachia Studies

Scott O'Neal

1970

**Ongoing Collaboration**

# *International Collaboration*

International collaboration is a **valuable** mechanism to build up **research capacity, advancing knowledge, and has direct economic significance.**

**Success** in the context of international collaboration is defined as the **achievement of clear benefits to all stakeholders**

# Randomised controlled trial comparing oral and intravenous rehydration therapy in children with diarrhoea.

Mackenzie A<sup>1</sup>, Barnes G.

## ⊕ Author information

### Abstract

**OBJECTIVE:** To determine the effectiveness of oral rehydration in children with moderate dehydration caused by gastroenteritis, and to compare the complications of oral and intravenous treatment.

**DESIGN:** Randomised controlled trial.

**SETTING:** Emergency department and infectious diseases ward in a large urban teaching hospital.

**PATIENTS:** 111 children aged 3-36 months with signs of dehydration, and were not in shock. Fifty were in intravenous group and one (oral group).

**INTERVENTIONS:** Oral rehydration fluid vs intravenous rehydration fluids but were all

**MAIN OUTCOME MEASURES:** Success of treatment. Time taken to rehydrate.

**RESULTS:** Oral treatment failed in two children. Vomiting was more common in the oral group. The intravenous group vomited during rehydration. The number of stools passed during rehydration ( $p = 0.001$ ).

**CONCLUSION:** Rehydration by mouth or intravenous for gastroenteritis.

“combined developed-developing countries learning processes can **potentially** generate effective solutions”

[BMJ](#). 1991 Aug 17; 303(6799): 393–396.

# DEFINITION & PURPOSE OF TRANSLATIONAL MEDICINE

enhancements in **prevention, diagnosis, and therapies** for the improvement of community health

to promote

combine disciplines, resources, expertise, and techniques within these pillars

goal

an **interdisciplinary** branch of the biomedical field supported by **3 main pillars**

Benchside

Bedside

Community

Cohrs R. J., Martin T., Ghahramani P., Bidaut L., Higgins P. J., Shahzad A. Translational Medicine definition by the European Society for Translational Medicine. *New Horizons in Translational Medicine* 2 (2015) 86-88  
Gohar F, Gohar A, Hülskamp G, Debus O. The Translational Medicine Professional: A Bridge Between Bench and Bedside? *Frontiers in Medicine*. 2018 Oct 17;5:294

# Ethical Dilemmas of International Collaboration, Translational Research, etc.



Ethics of **placebo trials** in less developed areas

Working across **multiple ethics committees & regulatory authorities**

Designing **culturally appropriate** monitoring and clinical care of subjects

Working with industry without **conflict of interest**

**Material transfer agreement**, etc.



# Murdoch Children's Research Institute



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Prof G. Barnes



Prof J. Bines



Prof J. Carlin



Dr J. Buttery



Dr M. Danchin



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Dr J. Standish



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dr. Kristy



dr Bayu S, dr Vicka Odr.



dr. Jarir At Thobari



dr. Hera Nirwati



dr. Icanervilia



dr. Nia M



dr. Rony T



dr. Icha



dr. Cavia



dr. Iskandar



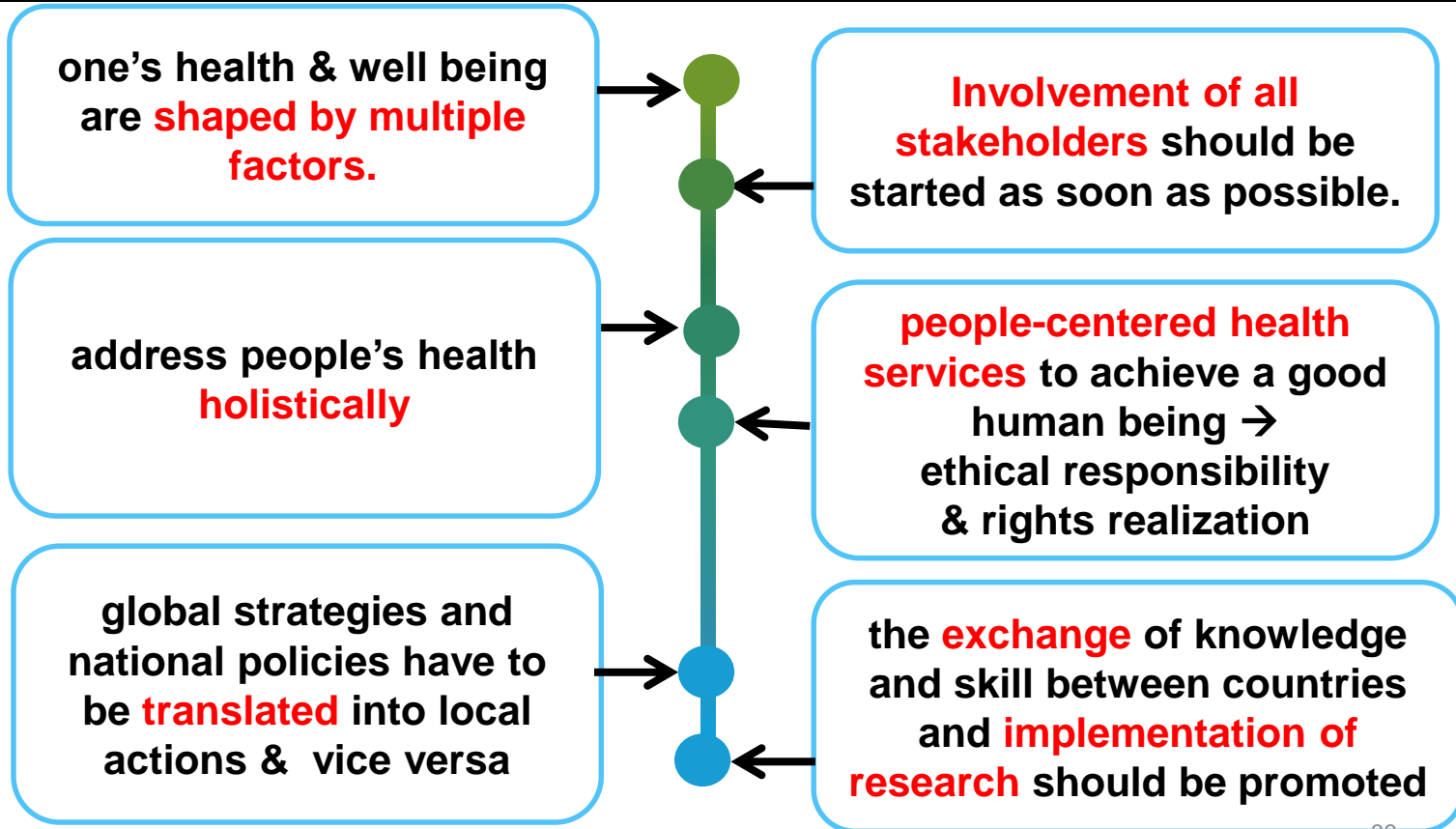
dr. IP Sukanto



dr. Novilia Bachtiar



# Summary Conclusion





Alone we can do so little,  
together we can do so much

Thank you very much for your kind attention