

## **The Australia-Indonesia Rotavirus Vaccine Research Collaboration Transcript**

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### **Professor Julie Bines 00:01**

Welcome to the global child and Adolescent Health Podcast from Melbourne Children's Global Health. This podcast is a series of conversations with leaders in research, education and global child and adolescent health. These conversations place children and adolescents at the center of sustainable development. I'd like to welcome you to the Melbourne Children's Global Health Podcast. Before we begin, I'd like to acknowledge the traditional owners on the land on which this podcast has produced the Wurundjeri people and pay our respects to their elders, past and present. My name is Julie Bines. I'm the Victor and Loti Smorgon Professor of Pediatrics and the Department of Pediatrics and the University of Melbourne. I'm also a pediatric gastroenterologist at the Children's Hospital and leader of the Enteric Diseases Group at the Murdoch Children's Research Institute.

Rotavirus was discovered in 1973 by professors Ruth Bishop and Ian Holmes, with researchers at the University of Melbourne and the Royal Children's Hospital. Rotavirus is the most common cause of severe dehydrating gastroenteritis in children less than five years of age worldwide, with an estimated 120,000 deaths worldwide each year. Despite safe and effective rotavirus vaccines and a recommendation from the World Health Organization to include rotavirus vaccines in national immunisation programs an estimated 65 million children remain unvaccinated. Currently available, rotavirus vaccines are given to infants from 6 to 8 weeks of age, leaving newborns at risk of infection, particularly in low- and middle-income countries. MCRI has developed a novel rotavirus vaccine, RV3B vaccine. This vaccine is based on an asymptomatic strain of rotavirus found in healthy newborn babies in Melbourne. Natural infection with this unusual strain provided protection against severe gastroenteritis in the first three years of life. An ideal vaccine candidate. A 4-decade long collaboration between MCRI, Universitas Gadjah Mada in Yogyakarta, and Biopharma Indonesia has led to the development and manufacture of the RV 3B vaccine in Indonesia.

The aim of this vaccine is to deliver the first dose from birth. Rotavirus vaccination, administered at birth, may offer several benefits, including providing early protection against severe rotavirus gastroenteritis. The opportunity for early coverage due to the administration at a time when families are accessing healthcare services and avoiding possible barriers to vaccine uptake. Our collaboration with UGM began through initial prevalence studies to examine the burden of rotavirus disease in Indonesia with Professor Yati Soenarto. Continued with the development of oral rehydration solutions and zinc therapy used to treat severe gastroenteritis and has culminated in clinical trials of the RV3 vaccine by MCRI, UGM, and Biopharma. Phase 2B trial conducted in partnership with UGM involving 1600 Indonesian babies found the vaccine was well tolerated and protected from severe rotavirus disease up to 18 months of age. Our collaboration aims to see the manufacture of an affordable RV 3B vaccine in Indonesia by Biopharma under a license from MCRI. As part of the Melbourne Children's Global Health Leadership Team, I'm very pleased to be involved in this podcast.

Today we're joined by Professor Jarir At Thobari, Professor, the Faculty of Medicine, Public Health and Nursing University of Gajah Mada, Jarkata in Indonesia, and welcome.

**Professor Jarir At Thobari 03:57**

Thank you for Julie and, how are you?

**Professor Julie Bines 04:01**

Well, thank you. And it's great that you've joined us for this inaugural podcast. Thank you both you and I have been working now for over 12 years. Sure. Yeah. Yeah. And it's mainly focused, at least in the beginning. The control of rotavirus disease and the development of a. Rotavirus vaccine for children in Indonesia, would you like to talk a little bit about where we are with rotavirus vaccine introduction and the journey over the last 12 years?

**Professor Jarir At Thobari 04:28**

Thank you for Julie. We are very proud to be part of the team on the development of the rotavirus vaccine, especially since this vaccine is very important for children in Indonesia. When we started in 2010 with the preparation of the clinical trial and then we learned how to manage the clinical trial until we start our phase 2B clinical trial in 2012.

I think that's really the beginning of the journey that we feel this vaccine will be at the end of our program after 2016, we finish our phase 2B clinical trial of the rotavirus vaccine in central Java in Jakarta.

We continue the program by the transfer technology from you from the MCRI to the manufacturer by BioPharma and we continue to conduct the clinical trial. Well, now the clinical trial phase three is almost finished. We are very proud that we have finished the recruitment of the participant since November 2021. We're going to follow the 1400 participants until next year.

Currently, the Indonesian government has decided to introduce a rotavirus vaccine in Indonesia this year starting in 21 districts in Indonesia, the districts with the highest prevalence of acute diarrhea in children.

We have a program, we call a demonstration project for these provinces using other vaccines imported from other countries this program is for exercise, especially because this is a very new vaccine and then for our healthcare providers, and primary health centres, to show how to give this is good vaccine to the children.

We hope next year the manufacturer, the study has finished, and the biopharma manufactures the product and then we going to continue gradually nationwide until 2024. So that's what is the current situation of the rotavirus vaccine that we started in 2012.

**Professor Julie Bines 07:15**

Great story and congratulations on this body of work over decades. It's been a really remarkable and I think also too, that it's the fact that you're taken a new novel vaccine, and you're gonna manufacture that for the first time in the world but manufactured in Indonesia for Indonesian children, it's a fabulous statement of hard work and in.

**Professor Jarir At Thobari 07:39**

Yeah, we're grateful for your contribution and you're helping us to find this new vaccine, and it's gonna be good for our children.

**Professor Julie Bines 07:51**

You're preparing there's one thing that is academics you used to thinking about a research context, but when you go to introduce a vaccine into a national program for maybe 4 to 5,000,000 new born babies each year in Indonesia. What sort of information do you need to provide to the government to get them to understand the potential benefit of a new vaccine like this?

**Professor Jarir At Thobari 08:17**

There is a lot of evidence needed to present specially for our policy makers of course, the burden of disease to show them this rotavirus is one of the killer viruses, especially for the infant in Indonesia, this type of surveillance has been done almost 25 years by my senior professor, Yati Soenarto and colleague under the Indonesian Rotavirus Virus Network.

Then this vaccine itself show its safety and efficacy, especially for low-middle-income countries then the other is we need to look at also the cost-effectiveness of the vaccine, the cost-effectiveness is one of the recommendations by the WHO or SAGE to present to our policymaker as part of the introduction of the new vaccine. By looking at the cost-effectiveness we see how the value of the money that we going to spend in terms of increasing the benefit for the population, especially in children in terms of reduction of disability, reduction of the mortality, and improvement of the quality of life of the children. So, when we spend money, the policymaker would like to find out how the value of this money works for the population.

**Professor Julie Bines 10:00**

Absolutely. There are many calls on the money and health healthcare systems and how to prioritise that so incredible amount of information needed by policymakers. So, your background, you're you have a number of appointments within the Universitas Gadjah Mada in the Academic Hospital, and you're involved in the regional Training Centre for WHO also for good clinical practice. A variety of hats that you wear. How do those? How did you get involved in that breadth and how important do you think it is for an academic person to be involved across that policy domain and interact with various key authorities within your country?

**Professor Jarir At Thobari 10:42**

Globally, yeah, I think that's the start of my passion to know how science could benefit and impact the population. So sometimes science we see this only in the publication or is this only by the dissertation of disease by the students? There is no impact of this, the science even to the population. So, therefore, I like to really to see what we have done actually really impact to the population. So, by this to understand about the healthcare system to understand about the how the policy maker making decision and how the science, of course is should be good quality and then also have ethical aspect on the on the science itself. So let's make my patient to involve in these various type of the stakeholders types various of the science and to skill myself and also to my students and to colleague of mine that we can do very good study, research and then this research will impact the population in used by the policymaker as the best evidence for national level.

**Professor Julie Bines 12:13**

In our enormous collaboration over generations, even before us and our generation, and what opportunities do you see for growing that collaboration that's been really well established?

**Professor Jarir At Thobari 12:25**

Yeah, I think Australia is really a leading high-income country in the region, Australia would involve in and also work together with a lot of academic institutions in the region. I think that's a real benefit, especially because a lot of middle or low-middle-income countries in the region in terms of developing young scientists to be future policymakers, probably decision makers to help the countries in the region and providing the evidence. And even like rotavirus, it's important to help the countries to build the capacity for the production of the vaccine. I think this kind of collaboration, in the future, is very important because we cannot stay alone without the global countries or a global situation like now and then always also the most important message from our government is collaboration with any countries in the region, because we have the same problem, we have the same issue. And then by doing collaboration that we can solve some problems especially when we look at that from our perspective during the pandemic, how the equity of the vaccine example that hit many countries in the region.

**Professor Julie Bines 13:54**

I think that's a wonderful message, collaboration and shared goals, shared dreams, shared skills and dealing with shared problems. So, I'd like to thank you very much for chatting with me today and I hope you enjoy the rest of your visit here in Australia and I really look forward to the next step.

**Professor Jarir At Thobari 14:08**

Thank you. Yeah. Thank you for Julie. Such wonderful to come here again. And then after some years I could not come to Melbourne and this is a wonderful opportunity. Thank you very much.

**Professor Julie Bines 14:32**

Thank you. Thank you for joining us for this episode of the Global Child and Adolescent Health Podcast, produced by Melbourne Children's Global Health and Initiative of the Melbourne Children's Campus. Melbourne Children's Campus is a partnership between the Royal Children's Hospital Melbourne, the Department of Paediatrics, the University of Melbourne, and the Murdoch Children's Research Institute. The Melbourne Children's Campus is located on the lands of the Wurundjeri in Nam, Melbourne, Australia. Be sure to join us next time.