

5th Asia Pacific Global Summit and Expo on Vaccines & Vaccination

July 27-29, 2015 Brisbane, Australia

Rotavirus vaccines: Development, implementation and impact

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Rotavirus is the most common cause of severe dehydrating gastroenteritis worldwide, causing about 450,000 deaths per year in children < 5 years of age and hospitalizing millions more. Rotavirus vaccines have been associated with a reduction in rotavirus hospitalisations in low- and high-income countries and a reduction in death in young children in Mexico and Brazil. In 2009, the WHO recommended that all children be vaccinated against rotavirus. Today 78 countries administer rotavirus vaccines in the National Immunisation Program, including some of the world's poorest countries assisted by GAVI. Rotavirus vaccines have been demonstrated to be highly cost-effective and data is now emerging of the indirect benefits of rotavirus vaccination. Despite these significant achievements there remain some challenges to the success of rotavirus vaccines, including vaccine efficacy in regions with high rates of severe disease, burden on the cold chain, safety concerns and cost. These challenges are the focus of ongoing research and development efforts. The RV3-BB rotavirus vaccine is a human neonatal rotavirus vaccine under development at Murdoch Childrens Research Institute, Australia. RV3-BB is an oral vaccine targeting birth dose administration and has the potential to improve the effectiveness and safety of rotavirus vaccines in low-income countries.

Biography

Julie Bines is the Victor and Loti Smorgon Professor of Paediatrics at the University of Melbourne and a paediatric gastroenterologist at the Royal Children's Hospital. She leads the Rotavirus Vaccine Group at the Murdoch Childrens Research Institute in the development of RV3-BB, a human neonatal rotavirus vaccine for the prevention of rotavirus disease from birth. She is a member of the ROTA Council and the co-convenor of the International Rotavirus Symposium to be held in Melbourne in 2016.

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