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New vaccine introduction in developing countries: An evidence-based typhoid vaccination project in Nepal and Pakistan**M Imran Khan**

Aga Khan University, Pakistan

Typhoid vaccines have been available as a means of disease control and prevention since 1896; however, their use as a routine tool for disease prevention in endemic settings has been hampered because of: (1) Insufficient data on disease burden particularly regarding the lack of health care access in the poorest communities affected by typhoid, (2) limitations of the typhoid vaccine, such as shorter duration of protection, moderate efficacy in young children and no efficacy for infants, (3) inadequate evidence on potential economic benefits when used at scale, (4) neglect in favor of alternative interventions that require massive infrastructure, (5) no financial support or commitment regarding vaccine delivery cost, (6) ambivalence about whether to invest in water and sanitation hygiene versus the vaccine, and (7) clarity on global policy for country adoption. The World Health Organization (WHO) in 2008 recommended the use of currently licensed typhoid vaccines using a high risk or targeted approach. The epidemiology of disease and the vaccine characteristics make school-based vaccination most feasible in reducing typhoid disease burden in many settings. To assess feasibility of school-based typhoid vaccination, two districts in Kathmandu, Nepal and two towns in Karachi, Pakistan were selected for pilot program. In total 257,015 doses of Vi polysaccharide vaccine were given to students in grades 1-10 of participating schools. The vaccination coverage ranged from 39% (38,389/99,503) in Gulshan town in Karachi, to 81% (62,615/77,341) in Kathmandu valley. No serious adverse event was reported post vaccination. The coverage increased in the second phase in Pakistan and Nepal. There was an initial concern of vaccine safety. However, as the campaign progressed, parents were more comfortable with vaccinating their children in schools. Supported and conducted by departments of health in Pakistan and Nepal, a school-based typhoid vaccination was found to be safe and feasible.

khan.m.imran@outlook.com