

An evaluation of the emerging interventions against Respiratory Syncytial Virus (RSV)-associated acute lower respiratory infections in children

pharmaceutical companies). The policy makers and industry condition of anonymity, due to the sensitive nature of the questions from the CHNRI framework and their collective scale from 0 to 100%.

**Relevance:** In the case of candidate vaccines for active immunization, very low levels of optimism for low product cost, affordability and optimism regarding the criteria of answerability, likelihood of success for end users for the interventions; and high levels of optimism for health workers. While considering the candidate vaccines targeting children, there was high optimism for low product cost, affordability, answerability and likelihood of efficacy, deliverability, sustainability and impact, and high acceptance to end users and health workers. The group also

**Conclusion:** Although monoclonal antibodies have proven to be effective in providing protection to high-risk infants, their introduction in resource poor settings might be limited by high cost associated with them. Candidate vaccines for active immunization of infants against RSV hold greatest promise. Introduction of a low cost vaccine against RSV would reduce the inequitable distribution of burden due to childhood ALRI and will most likely have a high impact on morbidity and mortality due to severe ALRI.

**Table 1:** Comparison of the cost of monoclonal antibodies and a low cost vaccine against RSV. The cost of monoclonal antibodies is \$43.2 per child, while the cost of a low cost vaccine is \$6.1 per child. The vaccine is expected to reduce the burden of ALRI by 22% (53,000 to 1,000 cases).

Intervention	Cost per child	Impact on ALRI cases
Monoclonal antibodies	\$43.2	Reduces ALRI cases by 1.0%
Low cost vaccine	\$6.1	Reduces ALRI cases by 22% (53,000 to 1,000)

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Classification	Vaccine	Clinical Phase	Reference
Live attenuated	rA2cp248/404ΔNS2 rA2cp530/1009 Δ NS2	I	- Not infectious in adults - Well tolerated, no symptomatic illness - Infected 50% and 20% sero-negative infants respectively at a dose of 10 <sup>5</sup> pfu
Live attenuated	rA2cp248/404/1030/ Δ SH	I	- only candidate with a demonstrated safety profile - 44% vaccinated infants had detectable antibodies after 2 doses of 5.3log <sub>10</sub> pfu
b/hPIV3/RSVF2	Recombinant attenuated para-influenza virus type-3 expressing RSV-F protein	I	- tested in 120 1-9 year old sero-positive children. - acceptable safety profile - minimally immunogenic
Subunit	Purified F Protein - PFP 1 and PFP 2	Discontinued after phase I/ II	- Pilot study shows significant antibody titres in children with CF - Safe and immunogenic in 12-48 month old sero-positive children
Subunit	PFP 3	Discontinued after phase II	- Double blinded controlled multi-centre study in CF children - Safe and immunogenic but no reduction in LRTI
Subunit	BBG2Na	Animal models	- Safe and immunogenic in adult mice. - Phase III trials in adult volunteers stopped due to unexpected adverse effects <sup>24</sup>

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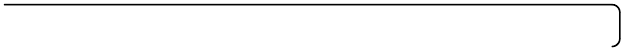
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