

## Why vaccination is vital during pregnancy

New Straits Times · 23 Feb 2022 · 13 · DR PRAMEELA KANNAN KUTTY Professor of Paediatrics, Universiti Pertahanan Nasional Malaysia

If charity begins at home, maternal immunisation says it best.

Vaccination of the mother during pregnancy protects a valuable but vulnerable tetrad of people, namely the mother, her unborn child, her newborn and the nursing infant, all at risk of infection with poor ability to fight them. This is confirmed by a number of clinical studies. Nature also seems to approve of this concept.

When a carefully chosen mulch is provided to a fruiting tree, it is safeguarded and cultivates its young fruit. When in full bloom, the healthy tree shelters spaces beneath it where other foliage and scented flowers sprout. Likewise, the recommended maternal immunisation with regular antenatal care can ensure an optimal pregnancy and safe delivery. It supports the ideal growth and development of the unborn child and the nursing infant. Under this canopy of robust health, population health is fostered.

During pregnancy, the mother's immune system adapts to protect herself and the growing fetus. The fetus is actively acquiring an immune system with a unique profile while remaining secure in the womb.

The mother and the fetus, however, are predisposed to infections which can have a poor outcome. Premature birth, fetal abnormalities and low birth weight are some adverse effects. With Covid-19, for instance, pregnancy-induced changes in immunity may lead to serious illness in some.

Hence, vaccination during pregnancy is recommended to protect both the mother and the baby.

Mothers naturally transfer antibodies to the fetus across the placenta for general protection from a spectrum of infections. When a mother is immunised against a specific infection, some antibodies in her that are specific against the infection are transferred to the fetus. Such precise immunity may not last long, but can be lifesaving for her and the baby.

As a newborn and during a baby's early months of life, the baby's maturing immune system will be challenged by many new microbes that were never encountered before. Poor responses to some vaccines and needing multiple doses for full protection add to the dilemma of the immature immune system. Premature babies or babies with underlying problems are most at risk for infections.

While the baby's own immunity and maternal antibodies can offer some protection in this phase, the young immune system is not fully established yet to competently defend against threats. A mother's specific immunity-against-vaccine-preventable infections can plug this gap of susceptibility, securing metabolic energy for the baby to thrive.

The tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine is safe to get during pregnancy and prevents whooping cough, a serious disease for the very young until fully immunised. The mother, who is also predisposed to infections, is directly protected.

Maternal immunisation significantly reduces neonatal and maternal tetanus, a preventable infection that ought to be eliminated through hygienic cord care, safe delivery practices and immunisation.

Natural infections trigger a more gradual rise in antibodies, whereas recommended immunisations boost a mother's declining immunity.

Maternal immunity against influenza, enhanced by the inactivated influenza virus vaccine (which does not contain the live virus), prevents hospitalisations, protects the fetus and an infant too young to be immunised. Elderly close contacts of vaccinated mothers are also protected, scaling up infection control, reducing antibiotic usage and antimicrobial resistance in the community.

Human milk and colostrum guide the maturity of the baby's immunity for short- and long-term benefits.

Enriched with specific antibodies by maternal immunisation, a mother can share them in her milk, ensuring the baby is free of infections in its early life to focus on growth and development.