Tidsskriftet Tidsskrift for Den norske legeforening

Pertussis vaccine – pregnant women are the target group in the childhood vaccination programme

FROM THE SPECIALTIES

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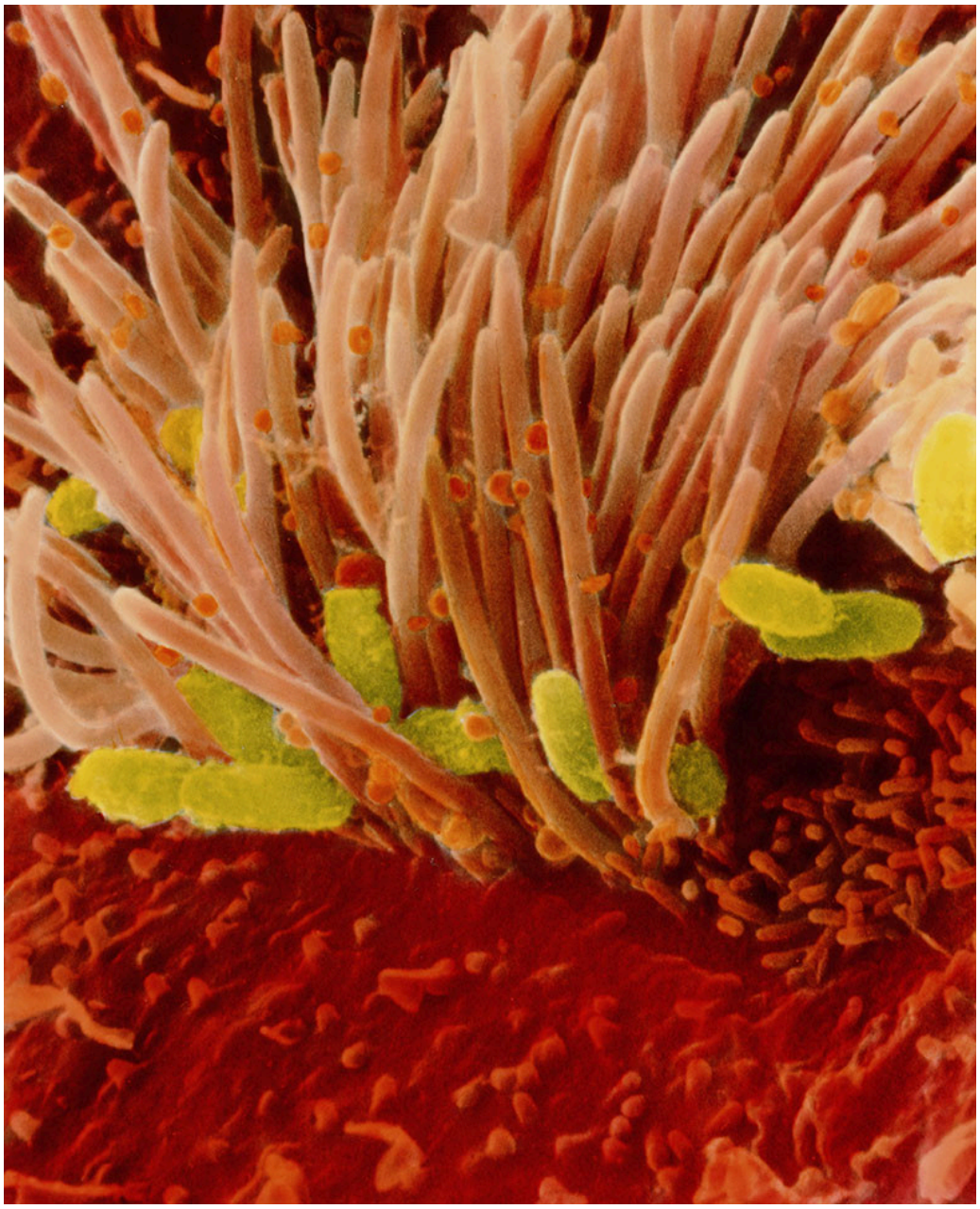
The Norwegian Parliament has passed a resolution to introduce maternal pertussis vaccination to protect infants. As part of the implementation, the Norwegian Institute of Public Health is planning important improvements in the monitoring of maternal vaccination.



Bordetella pertussis, *the bacterium that causes pertussis. Scanning electron microscopy shows the bacterium (green) in the respiratory epithelium of the trachea. Illustrative photo: Science Photo Library/NTB*

Infants are particularly vulnerable to respiratory infection with *Bordetella pertussis*, which causes whooping cough. Severe illness with respiratory arrest may be the first symptom. The most common complications of pertussis are breathing difficulties, nutritional problems and secondary infections. Encephalopathy and death are rare.

The pertussis vaccine was incorporated into the childhood vaccination programme in 1952, with the first vaccine dose given at three months of age (1). Neither vaccination nor previous illness provide permanent immunity. The bacterium is circulating in the population, and following reduced transmission during the COVID-19 pandemic, several European countries are now reporting an increase in transmission, severe illness and death in infants (2, 3).

Neonates have an immature immune system and poor response to vaccines (4).When a woman is vaccinated during pregnancy, her antibodies are transferred to the fetus, providing protection for the infant until they can be vaccinated (5, 6).

Maternal pertussis vaccination has been introduced in a number of countries, including the Nordic region. The Norwegian Parliament passed a resolution to incorporate maternal vaccination into the primary care childhood vaccination programme in the 2024 national budget. The Norwegian Institute of Public Health recommends that the combination vaccine Boostrix (pertussis/tetanus/diphtheria) be given at the routine check-up in week 24 in every pregnancy. Common adverse effects for pregnant women are pain at the injection site, fever, mild fatigue and feeling unwell for a few days. Follow-up studies have not shown adverse effects in the child. Women who are more than 24 weeks pregnant when the programme starts in May 2024 should also be offered the vaccine.

Facilitation by the primary healthcare service is crucial to ensure that all pregnant women are reached, and general practitioners, public health nurses and midwives should all be enabled to administer the vaccine. In close collaboration with healthcare professionals, we have devised an online training course for all healthcare personnel groups (7).

Pregnant women are a new target group for pertussis vaccination in the childhood vaccination programme, and we are working with the Norwegian Medical Products Agency on extended monitoring of adverse effects in the first year. This is standard practice when introducing vaccines to new population groups and is important for the follow-up in Norway.

The new procedures for improved monitoring of infection and vaccination in mothers and children are based on experiences from the introduction of new vaccines and surveillance during the COVID-19 pandemic. The work involves linking and analysing data from the Norwegian Surveillance System for Communicable Diseases (MSIS), the Norwegian Immunisation Registry (SYSVAK), the Norwegian Patient Registry (NPR) and the Medical Birth Registry of Norway. Since 1 January 2024, these national health registers have been assembled at the Norwegian Institute of Public Health. This collaboration between the experts from the registries will also improve monitoring of infection and vaccination for other diseases in pregnant women and children, such as COVID-19 and influenza, and strengthen the preparedness for future outbreaks or pandemics.

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Publisert: 29 May 2024. Tidsskr Nor Legeforen. DOI: 10.4045/tidsskr.24.0208
Received 13.4.2024, first revision submitted 22.4.2024, accepted 24.4.2024.