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WHO Report

Announcing the publication of the WHO immunological basis for immunization series module on pertussis vaccines

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ABSTRACT

In 2017, the World Health Organization (WHO) published an updated document aimed at facilitating the understanding of the immunological basis of pertussis vaccines and their use. The document "The Immunological Basis for Immunization Series: Pertussis Vaccines" is freely available on the WHO website. The main purpose of the module is to provide national immunization managers and vaccination professionals with an overview of the scientific basis of vaccination against pertussis and the immunological basis for the WHO position on pertussis vaccines.

The Immunological Basis for Immunization Series was initially developed in 1993. Since then the series was regularly updated and extended. They reflect the biological differences in immune responses to the individual pathogens and the differing strategies employed to create the best possible level of protection that can be provided by vaccination.

We invite the immunization community to use these references, and we hope the updated pertussis vaccine module will be a valuable resource.

Bordetella pertussis is a bacterium, transmitted by droplets, which circulates in all countries irrespective of high vaccination rates [1]. *Bordetella pertussis* causes a disease known as pertussis (whooping cough), which is an important contributor to infant morbidity and mortality worldwide [1]. The aim of worldwide pertussis immunization programmes is the reduction of severe pertussis in infants and young children. To this end, the World Health Organization (WHO) recommends immunization for all children starting at 6 weeks of age with either whole-cell pertussis (wP) or acellular pertussis (aP) vaccine. Available evidence indicates that licensed aP and wP vaccines have equivalent initial effectiveness in preventing disease in the first year of life. With aP relative to wP vaccines a more rapid waning of immunity is given. Countries should seek to maintain high (≥90%) pertussis vaccination coverage with a series of three doses [1].

The above recommendations are reflected in the "Pertussis vaccines: WHO position paper – August 2015" [1]. WHO issues regularly updated position papers on vaccines summarizing essential background information on the vaccine along with the current WHO position on the use of vaccines in the global context. Such position papers are intended mainly for guidance of national public health officials and managers of immunization programmes.

The purpose of the current "WHO Immunological Basis for Immunization Series Module on Pertussis Vaccines" [2] is to complement the "Pertussis vaccines: WHO position paper – August 2015" by providing immunization managers and vaccination professionals a comprehensive overview of the scientific basis for the WHO recommendations reflected in the position paper.

This module is part of the series "The Immunological Basis for Immunization" [2], which was initially published as a set of eight separate vaccine-specific modules focusing on pertussis diphtheria, measles, influenza, polio, tetanus, tuberculosis and yellow fever. Since their initial publication in 1993, these modules have been updated and expanded to include several additional vaccines. This series has become a widely-used knowledge source in the immunization field.

The "WHO Immunological Basis for Immunization Series Module on Pertussis Vaccines" is freely available on the WHO website [2]. The lead writer of the document are Dr. Carl Heinz Wirsing von König, former head of the Institute for Hygiene and Laboratory Medicine in Krefeld, Germany, and Dr. Nicole Guiso-Maclouf, former head of research at Institut Pasteur and director of the National Reference Centre for Pertussis and Diphtheria, Paris, France.

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This updated module describes basic pertussis bacteriology, pathogenesis and immunology. It then outlines vaccinology, evaluation, immunogenicity, effectiveness, and safety for both types of pertussis vaccines in use today, whole cell pertussis and acellular pertussis vaccines.

We hope this pertussis vaccine module will be a valuable resource and trusted knowledge source for persons working within the immunization community.

References

[1] World Health Organization. Pertussis vaccines: WHO position paper - August 2015. Weekly Epidemiological Record No. 35 2015;90:433–60 <http://www.who.int/wer/2015/wer9035.pdf?ua=1> [accessed October 2017].
[2] World Health Organization. The immunological basis for immunization series <http://www.who.int/immunization/documents/immunological_basis_series/en/> [accessed October 2017].