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Serotype Replacement and Nasopharyngeal Carriage Due to the Introduction of New Pneumococcal Conjugate Vaccine to National Routine Immunization

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Streptococcus pneumonia is still considered a main challenge towards achieving Millennium Development Goal 4 (MDG4) with more than 500000 deaths worldwide among children under 5 years in 2008 (1). Because of the considerable burden of *S. pneumonia* related diseases such as meningitis, pneumonia, and sepsis, the world health organization (WHO) recommended introduction of pneumococcal conjugate vaccine (PCV) to national routine immunization. Like many countries, Iran is currently preparing to introduce PCV. Epidemiological pattern of *S. pneumonia* after PCV vaccine implementation will be changed and the prevalence of both nasopharyngeal carriage and transmission will be reduced. In addition, the epidemiology of *S. pneumonia* is affected among non-targeted vaccination population because of indirect effect of vaccination (1).

Prevalence of nasopharyngeal carriage is estimated as 85% in developing countries (2). According to Davis et al. findings, nasopharyngeal carriage following PCV introduction among 14 countries were detected in population groups not targeted for immunization against *S. pneumonia* (3). Moreover, some studies (4, 5) found that the distribution of vaccine and non-vaccine serotypes has changed after PCV introduction. This epidemiological transition leads to increase in the incidence of those serotypes, which are not included in the PCV vaccine. There are limited or unreliable data on nasopharyngeal carriage and serotype replacement of pneumococcus in Iran. In conclusion, interested researchers in the field of microbiology and epidemiology are advised to conduct repeated surveys or monitor surveillance data to draw the profile of *S. pneumonia* related diseases at local and national levels.

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