

# Vaccine-preventable disease trends among Orang Asli (aborigine) community in Pahang in five years

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## ABSTRACT

**Introduction:** National immunization program have been introduced since the early 1950's. It has a positive impact where the incidence rate of Vaccine-Preventable Diseases (VPDs) dropped significantly. Despite progress in economic development and continuous efforts by the government, the health status of Orang Asli, continue to lag behind that of the general population. This study aimed to describe the trend and incidence rate of VPDs among Orang Asli in Pahang from year 2011-2015. **Methods:** A retrospective cross-sectional study was conducted by reviewing all reported cases of Pertussis, Measles, Hepatitis B, Tetanus, Diphtheria and Acute Poliomyelitis in year 2011-2015 in the state of Pahang from the web based communicable disease surveillance system (e-Notification). Information about number of cases, incidence rate and trend of VPDs in each district were obtained and relevant data were extracted. **Results:** In 2011 to 2015, no notification of Tetanus, Diphtheria and Acute Poliomyelitis were reported among Orang Asli in Pahang. The incidence rate of Hepatitis B showed a decreasing trend, whereas Pertussis was increasing in trend. Only 5 cases of Measles were reported in this 5 years duration. The highest incidence of Measles among Orang Asli was in 2015. The incidence was 23.87 (per 1 mil. populations) compared to general population of 14.17. **Discussion:** The increasing trend and higher incidence of Measles and Pertussis among Orang Asli reflects the poor coverage and some weaknesses in the implementation of immunization activities. Mopping-up and Supplementary Immunization Activity (SIA) should be conducted based on the result of Risk Assessment.

## KEY WORDS:

*Vaccine-Preventable Disease, Orang Asli, Pahang*

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# Waterpipe smoking and its association with systemic inflammation

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## ABSTRACT

**Background:** Waterpipe smoking is a re-emerging public health threat throughout the world, however, the health effects of waterpipe be identical to that of cigarette smoking. Exposure to waterpipe smoking is hypothesized to be associated with chronic low-grade systemic inflammation which may in long term can lead to chronic diseases. The study aimed to study the association of waterpipe smoking with systemic inflammation by measuring various serum markers as indicators of low grade chronic inflammation. **Objectives:** (1) Determine the association of active waterpipe smoking and Neutrophil to Lymphocyte Ratio (NLR). (2) Compare NLR between three groups i.e., waterpipe smokers, cigarette smokers and non-smokers. **Methodology:** The proposed study was designed as an Analytical Cross-Sectional Study to be carried out on adult population. Participants were recruited by Snowball sampling. The data were analysed using Kruskal Wallis test, Chi Square Test and Binary Logistic Regression Analysis to investigate the association between waterpipe smoking and systemic inflammatory markers. **Results:** Mean NLR varied significantly according to tobacco smoking status among participants (NLR: p-value < 0.01; Platelet to Lymphocyte Ratio: p-value < 0.01). After adjustment, waterpipe smoking was positively associated with NLR (adjusted beta=0.61, 95%CI 0.25, 0.96, p-value < 0.01); as compared to non-smoking. Positive unit change of NLR were higher among waterpipe smokers as compared to cigarette smokers. Further, logistic regression analysis indicates that waterpipe smokers were significantly more likely to show high NLR (OR = 4.40, 95%CI 1.97, 9.85, p-value < 0.01). **Conclusion:** Systemic inflammation measured by NLR have significant association with waterpipe smoking. The evidence is suggestive of systemic inflammatory effect of waterpipe smoking. The study adds to limited evidence regarding systemic effects of waterpipe smoking.