



## Pertussis Incidence by Time, Province and Age Group in Iran, 2006-2011

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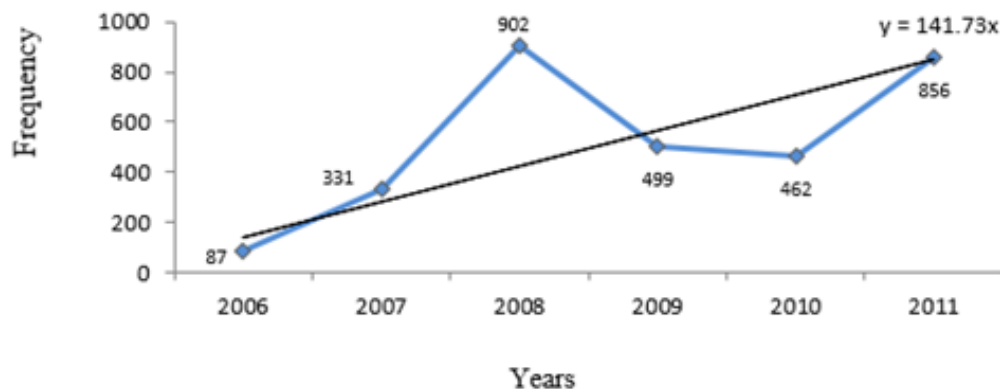
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### Dear Editor-in-Chief

Despite the availability of effective vaccines for pertussis, but the disease is still a crucial health problem (1). Routine immunization in children brought typically exceeding 90% reductions in reported cases in most developed countries (2). Despite this success, totally pertussis in children younger than 5 yr old caused 16 million cases and

195,000 deaths in 2008 (3). Besides, in the developed countries the incidence of pertussis in adolescents and adults has an increasing trend (4). National report of communicable disease (5) in Iran indicated that pertussis incidence has an increasing trend (Fig. 1).



**Fig. 1:** Trend of pertussis incidence in Iran (2006-2011)

For increased trend in developing countries, three hypotheses have been proposed: a) Improving the quality of reporting and surveillance; b)

waning of vaccine-induced immunity; and c) reduction of vaccine efficacy due to the emergence of new *Bordetella pertussis* strains (6). In

accordance with other countries (7, 8); infants younger than 1 yr of age had the highest pertussis incidence in Iran. However, due to protective effect of vaccine, pertussis incidence remained stable among children but among adults increased. Improvement in diagnosis and reporting of pertussis among adults can justify the observed increases in pertussis. However, no difference was observed for pertussis incidence in boys

and girls and was 1.13 per 100, 000 for both genders.

As shown in Fig. 2, pertussis is concentrated in the overcrowded provinces (5). In fact, there is a direct relation between incidence of pertussis and population density, actually the risk of pertussis may be related to the probability of exposure more than age-related increases in susceptibility (9).

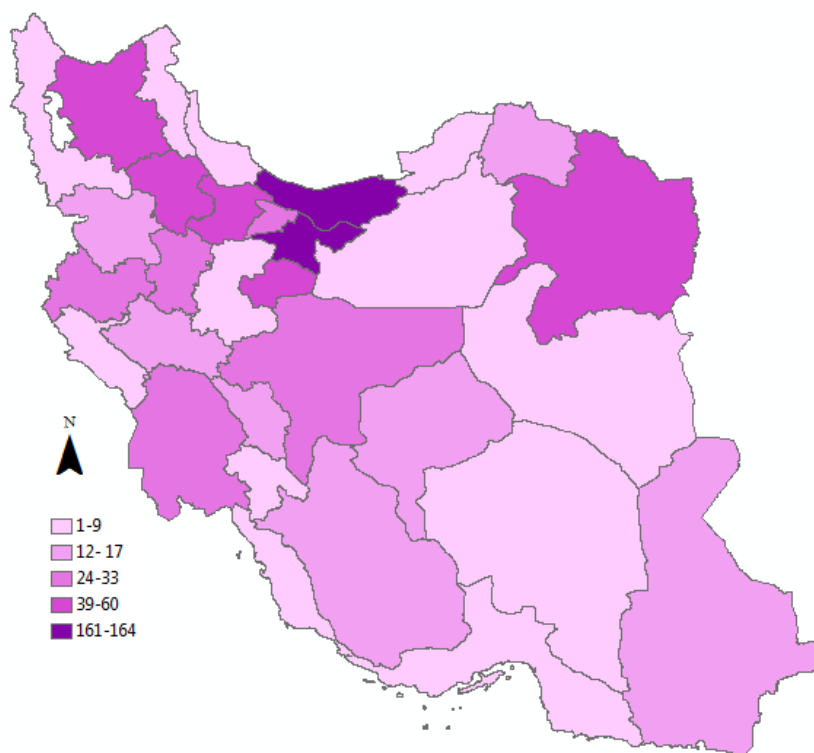


Fig. 2: The geographic disparity of new pertussis cases in Iran, 2011

Given the high rate of childhood immunization coverage and in other hand the highest rate of pertussis incidence in the infants younger than 1 yr, probably, adults is the source of infection and disseminated by them.

Within indirect strategies, framework infants and older children or adults should be protected by timely vaccination and booster immunization respectively and within direct strategies framework mother during pregnancy or infant after birth should be protected by enough support (10).

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