



Department of Health and Social Services  
William J. Streur, Commissioner

3601 C Street, Suite 540  
Anchorage, Alaska 99503

<http://www.epi.Alaska.gov>

Division of Public Health  
Ward B. Hurlburt, MD, MPH, CMO

Local (907) 269-8000  
24 Hour Emergency (800) 478-0084

Editor:  
Joe McLaughlin, MD, MPH  
Louisa Castrodale, DVM, MPH

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## Vaccine Hesitancy among Mothers of 3-Year-Old Children — Alaska, 2009–2011

### Background

The 2011 National Immunization Survey indicated that Alaska ranked 39<sup>th</sup> in the nation for immunization coverage among children aged 19–35 months.<sup>1</sup> An important contributor to Alaska's low immunization coverage rates is vaccine hesitancy, which is defined broadly as concerns related to the safety or necessity of vaccines that lead parents or guardians to delay or decline vaccines for their children. The purpose of this study was to better understand the factors associated with vaccine hesitancy among Alaska mothers.

### Methods

We reviewed responses to the Alaska Childhood Understanding Behaviors Survey (CUBS), an ongoing, population-based survey that collects information from Alaska mothers of 3-year-old children about health-related behaviors and experiences.<sup>2</sup> Specifically, we focused on responses to the question, "Have you ever delayed or decided not to get vaccine shots or immunizations for your child?" A response of "yes" was used to identify a vaccine-hesitant mother. The results of this study represent all Alaska mothers of 3-year-old children born during 2006–2008.

### Results

During 2009–2011, 1,727 mothers of 3-year-olds participated in the CUBS survey (weighted n=31,243). The proportion who indicated that they were vaccine-hesitant increased each year, from 23.8% in 2009 to 33.2% in 2011 (p-value <0.05). The prevalence of vaccine-hesitancy was highest among women who were white, older, more educated, and living in the Gulf Coast and Interior regions (Table 1).

Mothers whose child did not have a well-child check-up or physical exam in the past 12 months were more likely to be vaccine-hesitant than those who had a well-child visit (OR 2.4, 95% CI 1.7–3.5). Similarly, mothers whose child did not have a health care provider who knew them well were more likely to be vaccine-hesitant than those who did have a provider who knew them well (OR 1.9, 95% CI 1.4–2.8).

**Table 1. Percent of Vaccine-Hesitant Mothers by Maternal Characteristics – Alaska CUBS, 2009–2011**

|                            | % Hesitant | 95% CI      | p-value |
|----------------------------|------------|-------------|---------|
| <b>Overall</b>             | 28.4       | (25.5–31.4) |         |
| <b>Maternal Race</b>       |            |             | <0.001  |
| White                      | 34.1       | (30.1–38.3) |         |
| Alaska Native              | 17.1       | (14.2–20.5) |         |
| Other                      | 15.2       | (7.6–28.0)  |         |
| <b>Maternal Age*</b>       |            |             | 0.009   |
| <20 years                  | 20.8       | (12.2–33.3) |         |
| 20–24 years                | 21.4       | (16.6–27.1) |         |
| 25–34 years                | 31.2       | (27.1–35.6) |         |
| ≥35 years                  | 34.9       | (27.7–42.9) |         |
| <b>Maternal Education*</b> |            |             | 0.013   |
| ≤12 years                  | 25.0       | (21.1–29.2) |         |
| 13–15 years                | 32.5       | (26.9–38.7) |         |
| ≥16 years                  | 34.5       | (28.5–41.0) |         |
| <b>Region</b>              |            |             | 0.001   |
| Gulf Coast                 | 42.8       | (33.2–53.0) |         |
| Interior                   | 31.6       | (24.7–39.4) |         |
| Southeast                  | 29.2       | (20.1–40.3) |         |
| Anchorage/Mat-Su           | 26.3       | (22.3–30.7) |         |
| Southwest                  | 19.0       | (13.6–25.9) |         |
| Northern                   | 17.3       | (10.4–27.3) |         |

\*At the time of the child's birth

Among the 423 mothers (weighted n=8,868) who reported vaccine hesitancy during 2009–2011, the most common reasons cited for delaying or not getting immunizations were beliefs that too many shots are given at once (54.6%), some

shots are given too early (42.1%), and some shots do more harm than good (29.0%). Common sources of information that led mothers to delay or refuse immunizations for their child were the popular media, including the Internet, and friends or family (37.1% and 34.4%, respectively); 18% of mothers stated they received information from a health care provider that led them to delay or refuse immunizations.

### Discussion

The CUBS data indicate that vaccine hesitancy rates among Alaska mothers of 3-year-old children increased during the 3-year study period, and were highest among white, older, and more educated mothers. Rates differed by region of residence, and were lower among children who had a recent well-child visit or a provider who knew them well. Other studies have also found that certain family and health care characteristics are associated with vaccine hesitancy, including race, socioeconomic status, parental education and age, and support from health care providers.<sup>3</sup>

Health care providers play a critically important role in providing personalized, *evidence-based* information to parents regarding the safety and importance of vaccinating children on-time with all vaccines recommended by the Advisory Committee on Immunization Practices (ACIP).<sup>4</sup> A recent comprehensive review of the medical literature regarding the ACIP childhood immunization schedule found no evidence that the schedule was unsafe, and underscored that delaying or declining vaccination has led to outbreaks of vaccine-preventable diseases that put the public's health at risk.<sup>5</sup>

### Recommendations

1. Health care providers should strongly encourage parents to follow the ACIP-recommended immunization schedule for their children.
2. Health care providers should allow adequate time during patient visits to learn about specific concerns that parents may have regarding vaccines and address those directly.
3. Health care providers should educate concerned parents by discussing the benefits and risks of vaccinations and providing accurate information about vaccines (Box).
4. Health professionals should promote well-child visits within a medical home so that vaccine concerns can be addressed within the context of a trusting relationship between patients and providers.

### Box. Information Resources for Vaccine-Hesitant Parents

- U.S. Centers for Disease Control and Prevention (CDC): <http://www.cdc.gov/vaccines>
- American Academy of Pediatrics (AAP): <http://www2.aap.org/immunization/>
- Immunization Action Coalition: <http://www.immunize.org/>
- Bright Futures periodicity schedule: [http://brightfutures.aap.org/clinical\\_practice.html](http://brightfutures.aap.org/clinical_practice.html)

### References

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