

ASPR TRACIE Technical Assistance Request

Request Receipt Date (by ASPR TRACIE): 15 November 2018

Response Date: 20 November 2018

Type of TA Request: Standard

Request:

The requestor asked if ASPR TRACIE had information related to pertussis outbreaks, specifically as it pertained to lessons learned regarding past outbreaks and vaccination programs in the Amish community.

Response:

The ASPR TRACIE Team reviewed existing ASPR TRACIE resources, namely the [Select Infectious Disease Resources](#) webpage and the Population-Specific Resource categories in the [Access and Functional Needs Topic Collection](#). We also conducted an online search for additional materials specific to pertussis outbreaks and vaccinating the Amish community.

Section I in this document includes resources specific to past outbreaks and vaccination programs specific to the Amish community. Section II provides general resources on the refusal to vaccinate.

I. Resources Specific to the Amish Community

Centers for Disease Control and Prevention. (2006). [Pertussis Outbreak in an Amish Community --- Kent County, Delaware, September 2004--February 2005](#). Morbidity and Mortality Weekly Report. 55(30);817-821.

This report describes the 2004-2005 pertussis outbreak in an Amish community in Kent County (DE), which resulted in 345 cases and affected primarily preschool-aged children. The report addresses the need to promote vaccination in Amish communities using culturally appropriate strategies (e.g., conducting education and outreach with Amish leaders).

Gastañaduy, P.A., Budd, J., Fisher, N., et al. (2016). [A Measles Outbreak in an Underimmunized Amish Community in Ohio](#). The New England Journal of Medicine. 375:1343-1354.

The authors conducted a descriptive analyses of data on demographic characteristics, clinical and laboratory evaluations, and vaccination coverage related to the 2014 measles outbreak that infected 383 people in Ohio, primarily members of an Amish community with a low rate of vaccination. **NOTE:** Although not specific to pertussis, this article highlights the success of a vaccination campaign in the Amish community.

Katz, M.L., Ferketich, A.K., Paskett, E.D., and Bloomfield, C.D. (2013). [Health Literacy Among the Amish: Measuring a Complex Concept Among a Unique Population](#). *Journal of Community Health*. 38(4): 753–758.

The authors sought to measure the level of health literacy in Amish and non-Amish adults living in Ohio Appalachia. Results indicated that many Amish participants had limited or marginal health literacy. The authors suggest using innovative strategies that address specific cultural characteristics to improve literacy in this population.

Kettunen, C., Nemecek, J., Wengnr, O. (2017). [Evaluation of Low Immunization Coverage among the Amish Population in Rural Ohio](#). (Abstract only). *American Journal of Infection Control*. Volume 45(6):630–634.

The authors conducted a study to determine the knowledge, beliefs, attitudes, and opinions of Amish parents related to the immunization of their children. A questionnaire was mailed and 84 individuals voluntarily filled it out. Results indicated that the most reported reason for not immunizing their children was fear, especially with regards to overwhelming the child's system with too many vaccinations.

Medina-Marino, A., Reynolds, D., Finley, C. et al. (2013). [Communication and Mass Vaccination Strategies after Pertussis Outbreak in Rural Amish Communities-Illinois, 2009-2010](#). (Abstract only.) *The Journal of Rural Health*. 29(4):413-9.

The authors conducted a retrospective cohort study using public health surveillance data to determine the extent of a pertussis outbreak in east-central Illinois from December 2009 to March 2010. Forty-seven cases were identified with a median patient age of seven. The local health department intervened to help control disease transmission, identify contributing factors, and determine best communications methods to improve vaccination coverage. Findings of the study indicated that targeted communication and outreach to the Amish community resulted in a successful vaccine campaign and sustained monthly vaccination clinic.

Norton, A. (2016). [Measles Outbreak Among Amish Highlights Need for Vaccinations](#). MedicineNet.

This article describes the 2014 measles outbreak that infected 383 people in nine Ohio counties, primarily the Amish community whom had never been vaccinated. **NOTE:** Although not specific to pertussis, this article addresses to the importance of vaccination in the Amish community.

Phadke, V.K., Bednarczyk, R.A., Salmon, D.A., and Omer, S.B. (2016). [Association between Vaccine Refusal and Vaccine-Preventable Diseases in the United States: A Review of Measles and Pertussis](#). *Journal of the American Medical Association*. 315(11): 1149–1158.

The authors reviewed published literature to evaluate the association between vaccine delay, refusal, or exemption and the epidemiology of measles and pertussis. They identified nine reports (describing 12 pertussis outbreaks) that characterized the reasons

that case patients were intentionally unvaccinated or undervaccinated. Reasons included: personal belief (or philosophical) exemptions; religious beliefs or exemptions; cultural norms (e.g., one study found a 72% rate of unvaccinated residents in an Amish community in Delaware in 2004–2005; another found a 79% unvaccinated rate in an Amish community in Illinois in 2009–2010); illness at the time a vaccine dose was due; inability to appear for the vaccination appointment; and hesitance on the part of the vaccine provider.

Rodgers, K. (2017). [NIAM Blog Series: Breaking Down Barriers to Access to Increase Immunization Rates](#). National Association of County and City Health Officials.

This National Immunization Awareness Month blog series highlights the St. Mary's County Health Department's (MD) efforts to improve immunization rates in the Amish community. The author discusses a 2013 pertussis outbreak other outbreaks in the community; barriers that the community faces in receiving vaccinations; and the mobile, home-based clinic model that the health department implemented in 2014 in the community in order to get residents of all ages vaccinated.

Russell, L., (2017). [300 Amish People Got Shots For Whooping Cough](#). KY3.

This article describes the whooping cough outbreak (which in severely ill patients can lead to pertussis) in the Amish community near Seymour, MO. The author notes the challenge faced by the local health department associated with reaching the Amish community via traditional means through media reports.

Williamson, G., Ahmed, B., Kumar, P.S., et al. (2017). [Vaccine-Preventable Diseases Requiring Hospitalization](#). (Abstract only.) *Pediatrics*. 140(3).

The authors identified and reviewed information from patients that were hospitalized at Penn State Children's Hospital, and were under 18 years old and diagnosed with a vaccine-preventable diseases (VPD) from 2005-2015. Results indicated that VPD occurred mostly in unvaccinated or immunocompromised children, regardless of whether or not they were from the Amish community. However, the risk of a VPD requiring hospitalization was greater for Amish than for non-Amish children.

II. Strategies for Addressing Vaccination Refusal

Association of State and Territorial Health Officials. (2010). [Communicating Effectively About Vaccines: New Communication Resources for Health Officials](#).

This resource provides messages and communication tools to help health officials and core influencers of vaccine-hesitant parents (e.g., pediatricians and the media) create new and effective vaccine campaigns targeted towards parents who are hesitant in vaccinating their children.

Centers for Disease Control and Prevention. (2017). [Provider Resources for Vaccine Conversations with Parents](#).

Resources on this webpage were developed by Centers for Disease Control and Prevention, the American Academy of Pediatrics, and the American Academy of Family Physicians to help providers explain the risks and benefits associated with vaccination to parents.

Diekema, D.S., and the Committee on Bioethics. (2005). [Responding to Parental Refusals of Immunization of Children](#). Pediatrics. 115(5). .

This report can help pediatricians better understand parental reluctance or refusal to immunize children. It also highlights the limited circumstances under which parental refusals should be referred to child protective services agencies or public health authorities, and includes guidance that can assist pediatricians better communicate with a parent who is reluctant to immunize their child.