

Possible Occupational Exposure to Hepatitis A Among Deaf Education Teachers

In late January 1999, the Lubbock City Health Department Surveillance Team identified a hepatitis A case in a deaf education class. The index case-patient was a 7-year-old girl in first grade. Four secondary nonhousehold cases occurred: 3 patients were students, and 1 was a teacher's aide. This report of the outbreak describes the cooperative effort between state and local health departments and the local school district, and discusses a possible new occupational risk factor for hepatitis A.

Hepatitis A is a contagious viral disease that is spread by the fecal-oral route either directly through person-to-person contact or indirectly through contaminated food or water. The incubation period is 15 to 50 days. Although secondary spread is common in households and day-care centers, it is unusual in a grade school setting. Immune globulin (IG) prophylaxis to prevent secondary cases is recommended for household contacts and for children and staff of day-care facilities. It is not usually recommended for grade school classmates.

Outbreak Investigation and Control Measures

The index case occurred in a 7-year-old girl in the first grade who became ill on January 29, 1999. One household contact and 5 contacts who rode the school bus and shared food with the case-patient received IG during February 3 through February 18, 1999. The father of the index case-patient became ill, and his case was laboratory confirmed as hepatitis A on February 17. Two other case-patients, who lived outside the city limits, were possible contacts of the father.

At the time of the outbreak, 287 students in grades kindergarten through 6 attended the school where the outbreak occurred; 267 were hearing or "mainstream" students and 20 were enrolled in the deaf education program. The deaf education classes, provided for students in kindergarten through grade 2, were split into 4 classrooms with 6 teachers or aides. These teachers' aides also teach some classes with the hearing students.

To teach deaf students to speak, the deaf education teachers at this school use a highly effective method of physical prompting called

"tactile cueing" that results in frequent hand-to-face contact. First the student places his or her hands over the teacher's mouth and throat while the teacher speaks. Then the student repeats what the teacher said while the teacher places his or her hands over the student's lips and mouth to determine whether the student is enunciating properly.

A 34-year-old female teacher's aide from the index case-patient's classroom, developed symptoms on February 14. On February 25 two household contacts of the teacher, as well as the 20 students and 6 teachers from the 4 deaf education classes, were given IG at clinics held at the school. A 7-year-old hearing student developed symptoms on March 9. This girl attended a class taught by the deaf education program teacher's aide who had been ill. Two household contacts of this student received IG. A 7-year-old boy, who was a deaf education student in the index case-patients's class, developed symptoms on April 1; his household contacts received prophylaxis. On April 15, an 8-year-old hearing student became ill; her household contacts refused IG.

After the fourth patient was identified, on April 8, the Lubbock City Health Department (LCHD) surveillance staff contacted the Texas Department of Health (TDH) Immunization Division to request that hepatitis A vaccine be provided to staff and students of the school. LCHD received 120 vials of hepatitis A vaccine on April 13. Immunization clinics were held on April 14 and 15 at the school.

Continued ☞

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Timeline of Grade School Outbreak

Week of Onset

Jan	4	← Index case
Feb	1	
	2	← Teacher's aide, index case's class
	3	← Index case's father
Mar	4	
	1	
	2	← 7-y-o hearing student and index case's teacher's aide
	3	
Apr	4	
	1	← 7-y-o deaf student in index case's class
	2	
	3	← 8-y-o hearing student
	4	

By May 13, 76 students and 31 staff (107 total) had received vaccine. These vaccine recipients included hearing students from classrooms whose teachers also taught deaf education classes. No further cases from the school have been reported since May 15.

The second and final dose of the 2-dose regimen vaccine, which should be administered 6 months after the initial dose, will be provided in late November or December 1999. Clinics will again be held at the school to insure full compliance with the 2-dose regimen and minimize the inconvenience to school staff and students receiving the vaccine.

The current outbreak may be the first to involve students and teachers in a deaf education program. The current cases were limited to one campus and did not spread to other campuses in the 20 counties of the Regional Deaf Education Program for the Lubbock area.

In its 1996 recommendations for the prevention of hepatitis A through active or passive immunization, the Centers for Disease Control and Prevention

Advisory Committee on Immunization Practices recognized that children and staff of day-care centers are at risk for hepatitis A infection. Regarding day-care centers, the recommendations stated that poor hygiene among children who wear diapers and the handling and changing of diapers by staff contribute to the spread of hepatitis A infection. Outbreaks rarely occur in day-care centers in which care is provided only for children who do not wear diapers. In grade schools, the occurrence of hepatitis A usually reflects disease acquisition within the community; person-to-person disease transmission within the grade school setting is uncommon. Therefore, while IG is usually recommended for some or all attendees when multiple cases of hepatitis A occur in day-care centers with diapered children, it is not generally recommended for students or staff of grade schools where cases are occurring.

This outbreak raises the question of whether IG prophylaxis should be considered for classroom contacts and staff in outbreaks occurring in deaf education programs that use the tactile cueing method of teaching students to speak. Additionally, the question of vaccinating teachers at possible risk of occupational exposure is raised. These are issues that should be addressed through well designed studies. A serosurvey of deaf education teachers and a well-matched comparison of teacher groups might be useful.



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Acknowledgements

The authors wish to thank the following individuals for their contributions to this investigation and report. **City of Lubbock:** Windy Sitton, Mayor; Bob Cass, City Manager; Doug Goodman, Health and Community Services Division Director; Beckie Brawley, RN, Prevention Manager; Pat MacLeod, RN; Judy Bolin, RN; and Danielle Palmer. **Lubbock Independent School District:** Jane Tustin, RN, Coordinator of Health Services; Bill Tarro, Risk Manager; Norma Daniels, RN; and Drew Jackson, School Principal. **Texas Department of Health:** Charles Bell, MD, Public Health Region 1 Director; Jan Pelosi, Surveillance and Immunization Program Director; Kate Hendricks, MD, IDEAS Division Director; and Jean Brender, PhD, RN, IDEAS Epidemiologist.

Perspectives in Public Health: Texas Department of Health (TDH) Quarterly CME Conference

On Friday, September 10, 1999, from 8:00 AM to 4:00 PM, the Texas Department of Health (TDH) will present its Perspectives in Public Health: TDH Quarterly CME Conference. Designed for public health and primary care physicians, the conference will be held at the North Austin Medical Center, in the Decherd Auditorium, 12221 Mopac Expressway N. in Austin, Texas. The program will consist of lectures supplemented by audiovisual slide presentations.

After attending this conference, the participants will be able to

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- ♦ identify policies, processes, and products that promote and protect the health of people and preserve environmental quality; and
- ♦ establish relationships with other physicians concerned with public health and preventive medicine issues through dialogue with presenters and other participants.

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Julie Rawlings, MPH, Epidemiology Surveillance and Consultant, Infectious Disease Epidemiology and Surveillance Division, Texas Department of Health, Austin, Texas
- ♦ **Panel: Medical Direction of Emergency Air Transport (2 hours)**
Robert H. Emmick, Jr., MD, MBA, Activity Medical Staff, Emergency Services Department, St. Joseph Regional Health Center, Bryan Texas; John R. Holcomb, MD, Vice President, Clinical Services, Methodist Healthcare System, San Antonio, Texas; James W. Van Hook, MD, Assistant Professor, Department of OB/GYN, University of Texas Medical Branch, Galveston, Texas; Nicolas U. Curry, MD, MPH, Principal, CCA Health Systems Consulting, Manor, Texas
- ♦ **Medical Newsdesk**
W. S. Riggins, Jr., MD, MPH, Director, Public Health Region 8, Texas Department of Health, San Antonio, Texas
- ♦ **Putting Prevention Into Practice: Infection Control for the Primary Care Physician**
C. Glen Mayhall, MD, Professor of Internal Medicine, Faculty, Division of Infectious Diseases, University of Texas Medical Branch, Hospital Epidemiologist, Galveston, Texas
- ♦ **Ethics: Medicare - Fraud & Abuse**
Charles E. Haley, MD, Associate Medicare Medical Director, TrailBlazer Health Enterprises, LLC, Dallas, Texas

This CME activity provides one hour of ethics and/or professional responsibility content.

The Texas Department of Health designates this educational activity for a maximum of 6 hours in Category 1 credit towards the AMA Physician's Recognition Award. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

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The Texas Department of Health is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

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