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Pregnancy in Perinatally HIV-Infected Adolescents and Young Adults — Puerto Rico, 2002

Since the introduction of highly active antiretroviral (ARV) therapy in the United States in the mid-1990s (1–3), the life expectancy of U.S. children who were infected perinatally with human immunodeficiency virus (HIV) has increased substantially. As a result, the number of perinatally HIV-infected females in the United States who are becoming both sexually active and pregnant is increasing (4). During August 1998–May 2002, a total of 10 pregnancies were identified among eight perinatally HIV-infected adolescents and young adults in Puerto Rico; in April 2002, the Puerto Rico Department of Health (PRDOH) asked CDC to assist in assessing such pregnancies. This report describes these pregnancies and discusses factors associated with sexual activity and pregnancy. The findings suggest that increasing numbers of pregnancies will occur among perinatally HIV-infected adolescents and young adults and that appropriately tailored reproductive health interventions should be developed.

Adolescents and young adults were identified by their health-care providers or by PRDOH, and chart reviews and interviews were conducted during April–August 2002. For females with two pregnancies, interview and chart data on the first pregnancy are reported. Case-patients were defined as perinatally HIV-infected adolescents or young adults with a history of pregnancy, and controls were defined as perinatally HIV-infected females with no history of pregnancy. All controls were age-matched to ≤ 1 year of the age of the pregnant females, except for one patient aged 22 years who had been aged 19 years when she was pregnant; she was matched to a control aged 19 years. Perinatal infection was defined as confirmed HIV-positive serostatus of the patient's biologic mother or an HIV risk factor for the biologic mother and the absence of any other risk factors (e.g., sexual abuse or blood transfusions) for the patient.

A total of eight case-patients were identified in four cities in Puerto Rico. The median age of the case-patients was 18 years (range: 15–22 years), and the median age at the time of first pregnancy was 17 years (range: 13–19 years). Among the 10 pregnancies to the eight patients, seven pregnancies in six patients resulted in live-born infants; as of February 24, no cases of mother-to-child HIV transmission were reported. In addition, two pregnancies ended in elective abortions and one in a spontaneous abortion.

Five case-patients had first pregnancies that resulted in live-born infants; all five received some prenatal care, and four (80%) received ARV therapy consistently during their pregnancies. All infants received zidovudine prophylaxis after delivery. The median viral load of these case-patients during pregnancy was 35,822 copies/mL (range: 3,535–163,064 copies/mL), and the median CD4 count during pregnancy was 218 cells/mm³ (range: 19–956 cells/mm³). The majority of the case-patients were highly ARV-experienced, with a median of ≥ 9 years (range: 3–12 years) of ARV therapy, and five case-patients had each taken at least nine different ARV medications during their lifetimes. All four case-patients who were tested for viral resistance had multiple genotypic mutations.

Five of the eight case-patients reported unintended pregnancies, and two reported using condoms as a form of birth

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presented in this report underscore the need for increased efforts to implement these strategies to reduce SHS exposure among youths and prevent the negative health effects of SHS exposure.

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Ambulance Crash-Related Injuries Among Emergency Medical Services Workers — United States, 1991–2002

Ambulance crashes are one of many hazards faced by Emergency Medical Services (EMS) personnel. Although no complete national count of ground ambulance crashes exists, the total number of fatal crashes involving ambulances can be ascertained by using the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting

System (FARS). To characterize risk factors for EMS workers involved in ambulance crashes, CDC's National Institute for Occupational Safety and Health (NIOSH) and NHTSA investigated three case reports of ambulance crashes. This report summarizes these investigations, presents surveillance data, and discusses recommendations for prevention measures. NIOSH is identifying and testing alternative measures to reduce injury risk for EMS workers.

Case Reports

Case 1. In May 2001, an Emergency Medical Technician (EMT) aged 26 years died when her ambulance was struck head-on by a pick-up truck at 6:30 a.m. The EMT had been riding unrestrained in the patient compartment while attending a patient during a nonemergency transport. During the collision, the EMT struck the front bulkhead of the patient compartment; she died en route to the hospital from blunt force trauma to the head and chest. The patient and pick-up driver also suffered fatal injuries. The ambulance driver had been driving unrestrained and suffered multiple serious injuries, including a fractured leg.

Case 2. In July 2001, an EMT aged 27 years died when her ambulance struck an elevated train-track support column at 12:30 p.m. She had been riding unrestrained in the patient compartment while attending a patient during a nonemergency transport. During the collision, the EMT and the patient both struck the front bulkhead of the patient compartment. Both the driver and patient were hospitalized; the EMT was transported to a hospital, where she was pronounced dead.

Case 3. In March 2002, an EMT aged 22 years who was driving and a paramedic aged 37 years were injured when their ambulance struck an oncoming vehicle head-on and overturned. The paramedic was riding unrestrained on the patient compartment squad bench while attending a patient during a nonemergency transport. A relative of the patient was seated in the rear-facing attendant's seat and was wearing a seatbelt. During the collision, the unrestrained EMT driver sustained minor injuries. The paramedic struck the interior cabinets and shelves of the patient compartment. The EMT and the paramedic were transported to a hospital, where the EMT was treated and released; the paramedic was hospitalized and released 2 days later. The patient's injuries included scalp and shoulder contusions and a shoulder laceration. The patient's relative sustained minor internal injuries.

Surveillance Data

During 1991–2000, the most recent year for which data were available, 300 fatal crashes occurred involving occupied ambulances, resulting in the deaths of 82 ambulance occupants and 275 occupants of other vehicles and pedestrians. The 300 crashes involved a total of 816 ambulance occupants. FARS does not differentiate ambulance workers from passengers among those experiencing nonfatal injuries in fatal crashes; however, the seating positions for all occupants and the severity of injuries can be determined from FARS data (Table).

Although which occupants were EMS workers and which were patients or other passengers cannot be ascertained precisely, calculations using the FARS “fatal injury at work” variable based on death certificate information indicate that 27 of the occupants killed were on-duty EMS workers. These comprised 3% of all ambulance occupants and 33% of occupant fatalities.

The majority of the 27 EMS worker fatalities occurred in the front of the vehicle: 11 (41%) in the driver’s seat and five

(19%) in the front right-side seat.* Those coded as “other enclosed” accounted for seven (26%) of the EMS worker fatalities; these persons probably were working in the patient compartment. Four EMS workers were listed in “other/unknown” seating positions (Table).

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Editorial Note: EMS personnel in the United States have an estimated fatality rate of 12.7 per 100,000 workers, more than twice the national average (1). This report documents 27 ambulance crash-related fatalities among EMS workers over a 10-year period. The surveillance data and case investigations identify riding unrestrained as an important risk factor for EMS workers. Among all ambulance occupants, riding in the patient compartment was associated with greater injury severity. However, in 27 incidents coded as “fatal injury at work,” seven (26%) of the EMS workers killed were drivers who were not wearing a restraint, and two (7.4%) were unrestrained in the front right seat. Six (22%) of the EMS workers killed were not wearing restraints while riding in the patient compartment.

In 1966, the National Academy of Sciences cited deficiencies at various levels of emergency care, including unsuitable ambulances with inadequate equipment, incomplete supplies, untrained attendees, lack of traffic control, and lack of voice communication facilities (2). Since 1966, substantial improvements have been made in communications systems, the routine use of modern lifesaving equipment, and the level of worker expertise. In addition, the amount of emergency care has increased in volume, in level of complexity, and in required competency of EMS workers (3). However, in January 1992, minimal workplace safety research was conducted for EMS personnel, and statistics related to worker characteristics and job duties were largely unavailable (4). According to a retrospective study investigating characteristics of fatal ambulance crashes during an 11-year period that emphasized emergency versus nonemergency use incidents, the majority of ambulance crashes occurred during emergency use, and rear compartment occupants were more likely to be injured than those in front (5).

Less than half of EMS workers use restraints in the patient compartment (6). In addition, lap-belt restraint systems commonly provided in patient compartments do not allow full

TABLE. Number of persons injured in ambulance crashes, by injury severity and seating position — United States, 1991–2000

Injury severity/ seating position	No.	% within injury severity group	% of all ambulance occupants
Possible			
Front left	70	41.7%	
Front right	50	29.8%	
Other enclosed*	34	20.2%	
Other/unknown	14	8.3%	
Total	168		20.6%
Nonincapacitating			
Front left	81	36.5%	
Front right	54	24.3%	
Other enclosed*	63	28.4%	
Other/unknown	24	10.8%	
Total	222		27.2%
Incapacitating			
Front left	43	32.8%	
Front right	20	15.3%	
Other enclosed*	50	38.2%	
Other/unknown	18	13.7%	
Total	131		16.0%
Fatal			
Front left	14	17.1%	
Front right	10	12.2%	
Other enclosed*	48	58.5%	
Other/unknown	10	12.2%	
Total	82		10.0%
None†	201		24.6%
Unknown†	12		1.5%

* Inside the patient compartment.

† Seating positions irrelevant or unavailable.

* A total of 14 fatalities occurred among driver’s seat occupants; two of them were coded “unknown” for “fatal injury at work,” and a third was coded “no.” Although an ambulance driver might be an EMS worker, only those coded positively for “fatal injury at work” were included as EMS workers.

access to the patient. When properly used, the squad bench lap belts position the EMS worker against the side wall, making it impossible for the worker to bend forward to access the patient. If the EMS worker needs to access the cabinets along the driver-side wall, the belts must be unbuckled to allow the worker to stand up. If CPR or other procedures such as intubation or insertion of IVs must be performed, EMS personnel might need to stand over or kneel near the cot. For these reasons, EMS workers often ride unrestrained, seated on the edge of the squad bench (7). In addition, unrestrained or improperly restrained patients who become airborne in a crash might pose an additional injury risk to EMS personnel and to themselves.

The findings in this report are subject to at least three limitations. First, FARS records only crashes involving a motor vehicle traveling on a traffic-way customarily open to the public that result in the death of a person (either a vehicle occupant or nonmotorist) within 30 days of the crash (8). As a result, fatal crashes on private property (e.g., driveways, parking lots, or private roads) are excluded. Second, which ambulance occupants were EMS workers cannot be determined precisely by examining injuries by occupation code. EMS might be provided by local career or volunteer fire departments, private ambulance companies, or volunteer rescue services. Finally, data about nonfatal injuries to volunteer firefighters and EMS workers are not included routinely in occupational injury databases.

CDC recommends that EMS employers ensure that EMS workers use patient compartment vehicle occupant restraints whenever possible, ensure that drivers and front-seat passengers of EMS vehicles use the occupant restraints provided, consider equipping ambulances with patient cots that include upper body restraints, and ensure that EMS workers who operate ambulances are qualified and trained appropriately. Ambulance manufacturers should evaluate and develop occupant protection systems designed to increase the crash survivability of EMS workers and patients in ambulance patient compartments and ensure that such systems allow EMS workers mobility to access patients and equipment.

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Smallpox Vaccine Adverse Events Among Civilians — United States, February 18–24, 2003

During the civilian smallpox vaccination program, CDC and state health departments are conducting surveillance for vaccine-associated adverse events. In the first stage of the program, active surveillance is being conducted for potentially life-threatening, moderate-to-severe, and other serious adverse events and for vaccinia transmission to contacts of vaccinees (1) (Table). Nonserious events are reported through passive surveillance and are expected to be underreported. This report summarizes smallpox vaccine adverse events reported among civilians vaccinated as of February 21, 2003, and received by CDC from the Vaccine Adverse Event Reporting System (VAERS) as of February 24.

Potentially life-threatening and moderate-to-serious events are classified on the basis of evidence in support of the reported diagnoses. For probable cases, other causes are excluded, and supportive information is available. Events are classified as suspected if they have clinical features compatible with the diagnosis but either further investigation is required or additional investigation of the case did not provide supporting evidence for the diagnosis and did not identify an alternative diagnosis. CDC and state health departments also receive reports of other events that are associated temporally with smallpox vaccination. Reported adverse events are not necessarily associated with vaccination, and some or all of these events might be coincidental.

During January 24–February 21, smallpox vaccine was administered to 7,354 civilian health-care and public health