

# Pediatric Emergency Department Visits in the United States, 2003-05

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Center for Health Statistics

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# Topics

- Overview of the National Hospital Ambulatory Medical Care Survey (NHAMCS)
- How many children and adolescents go to the ED?
- Where do they go?
- Why do they go?
- What happens while in the ED?
- Take home messages

# Characteristics of NHAMCS

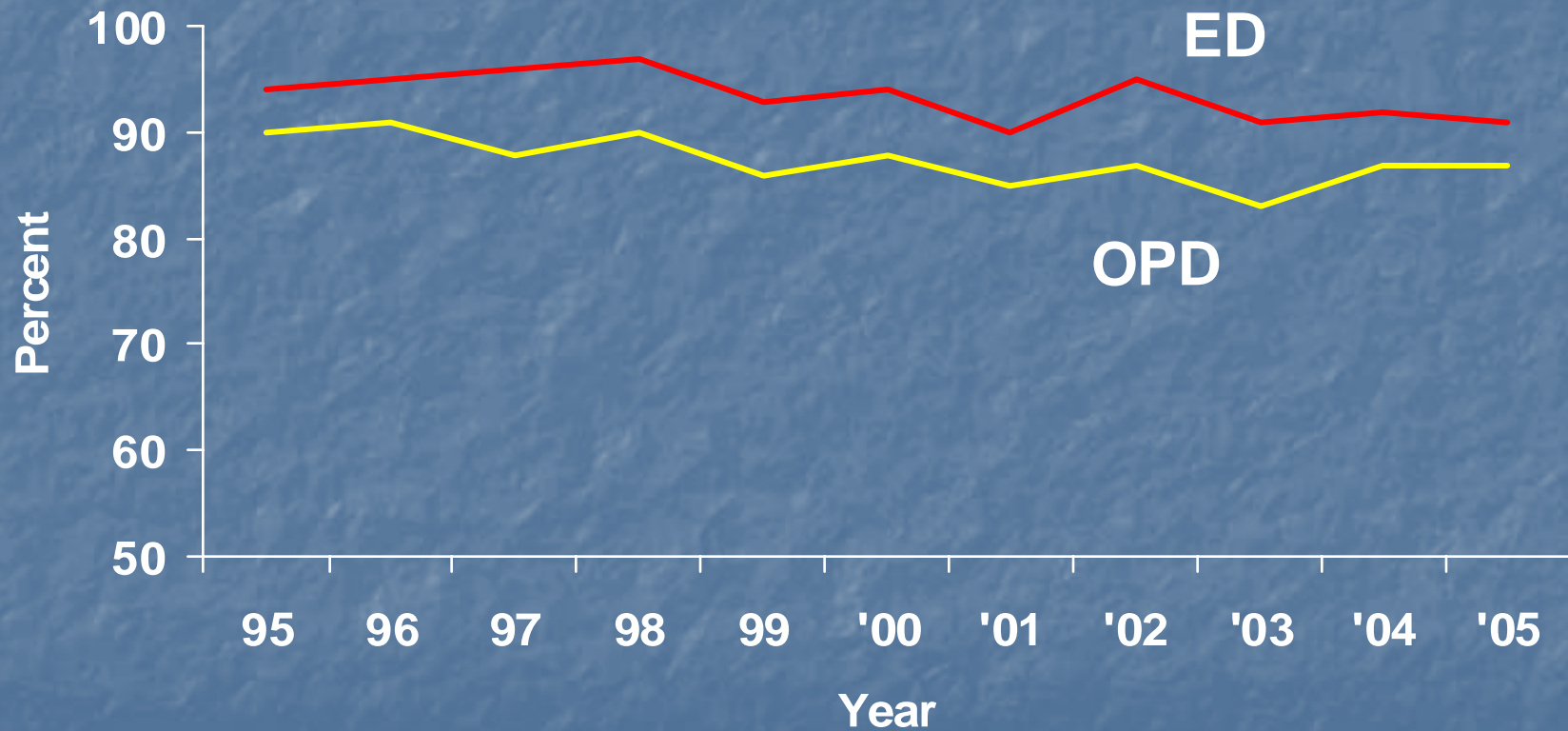
Survey	Type of Data	Years fielded	Current sample size (approximate)
National Hospital Ambulatory Medical Care Survey (NHAMCS)	Visits to hospital emergency department (ED) and outpatient departments (OPD)	1992-present	480 hospitals 35,000 ED visits 30,000 OPD visits



# NHAMCS Methodology

- National probability sample
- Non-Federal, short-stay (<30 days), general (medical/surgical, or children's) hospitals
- Located in 50 states and D.C.
- 4 stage sample design (PSU, hospital, ED/OPD, and visits)
- 4 week reporting period
- Endorsed by SAEM, ACEP, ENA, FAH, ACOEP, and Surgeon General

# NHAMCS Response Rates



# Data analysis

- Secondary analysis of ED visit records for persons <18 years of age using data from the 2003-2005 NHAMCS, last time - 1992-94.
- Visits by patients <18 yrs and age subgroups:
  - <1 year, 1-4 years, 5-12 years, and 13-17 years.



# How many go to the ED?

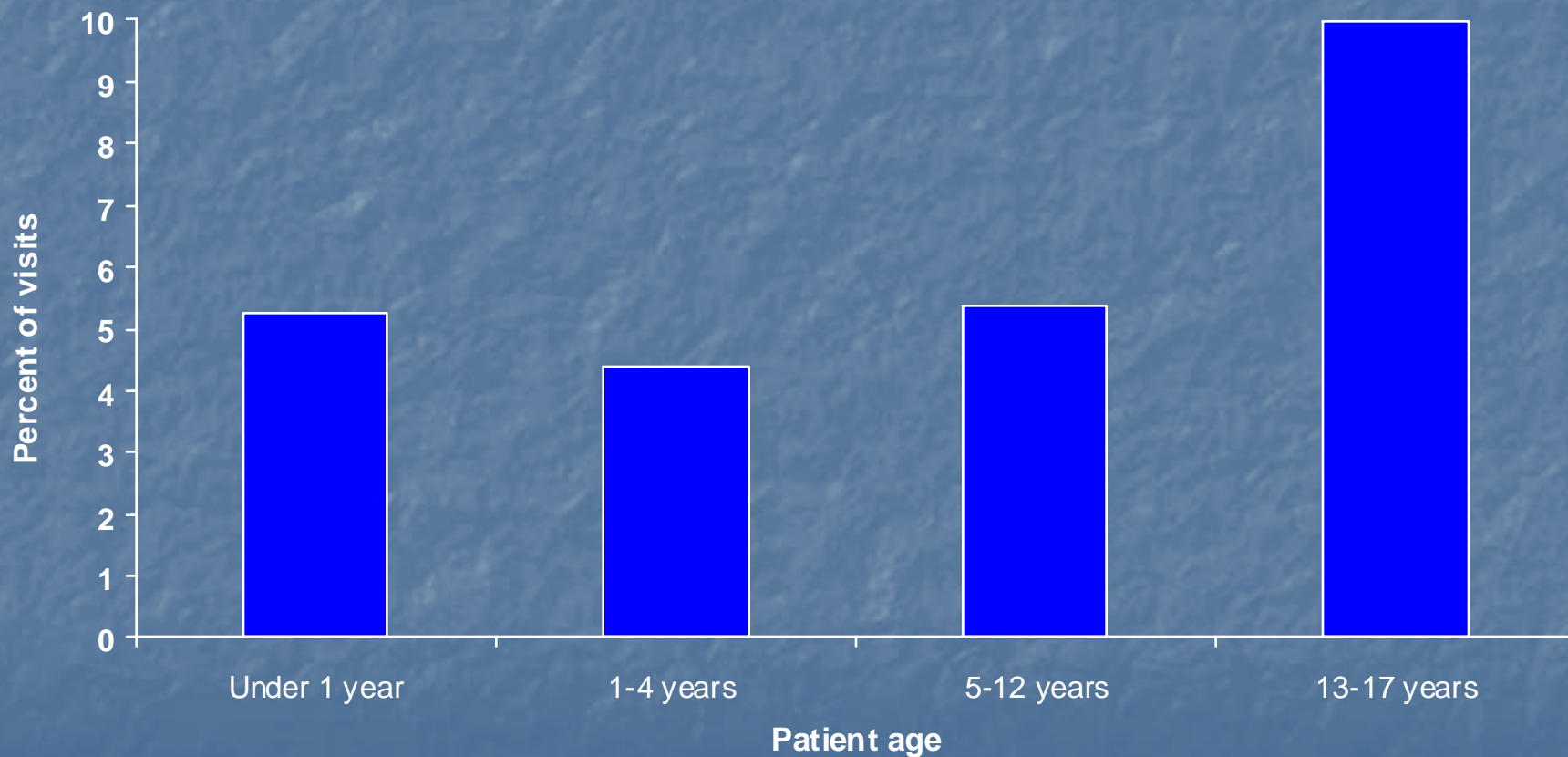
- 28.3 million pediatric visits annually
- 38.4 visits per 100 children <18 years
- Highest rate for black or AA infants <1 year of age (1.6 visits for each infant).
- Children and adolescents make up 20-30% of all the ED visits

# Where do they go?

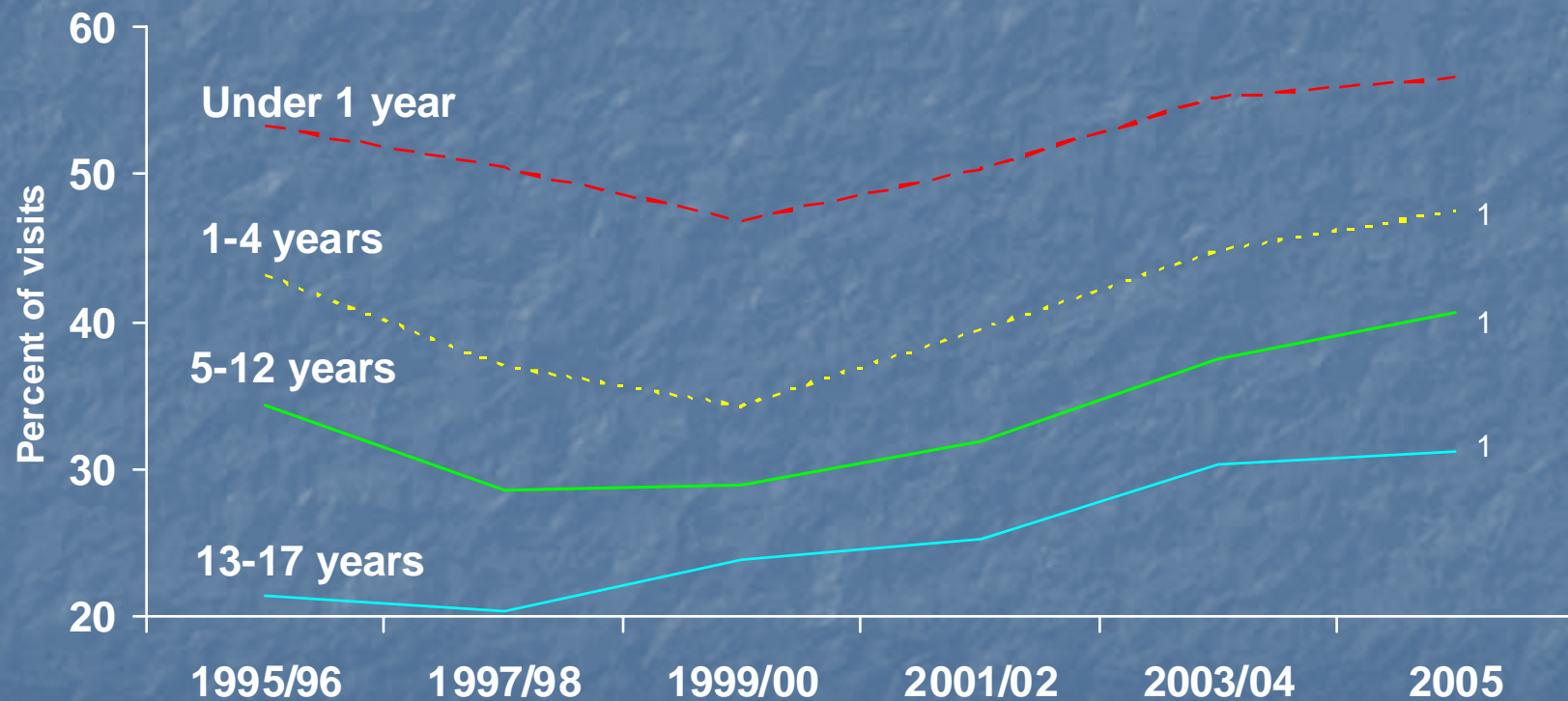
- Voluntary nonprofit hospitals -72%
- Metropolitan statistical areas (MSAs) - 85%
- Level 2 trauma centers - 28%
- Large volume EDs (>10,000 pediatric visits annually)- 52%
- General medicine emergency service areas (ESAs) -73%
  - only 1:5 treated in pediatric dedicated ESAs



# Likelihood of arriving to the emergency department via ambulance, by age group: United States, 2003-05

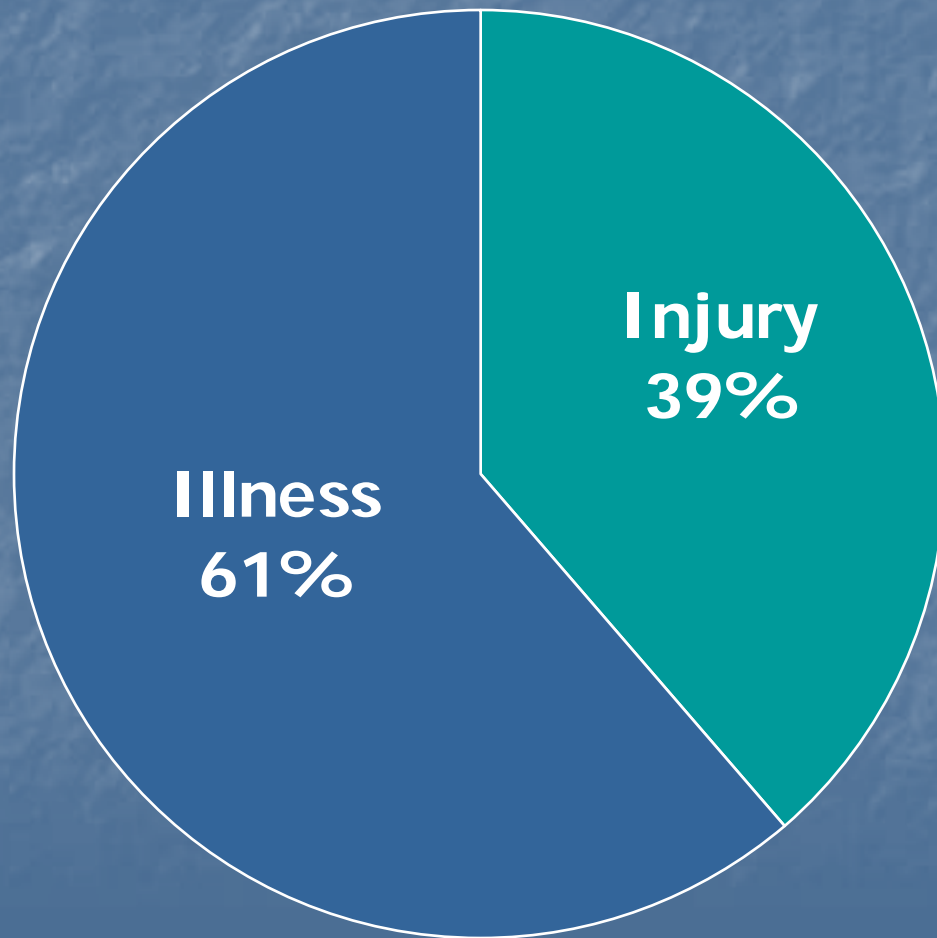


# Trends in the percentage of pediatric emergency department visits with payment source of Medicaid/SCHIP by patient age: United States, 1995-2005



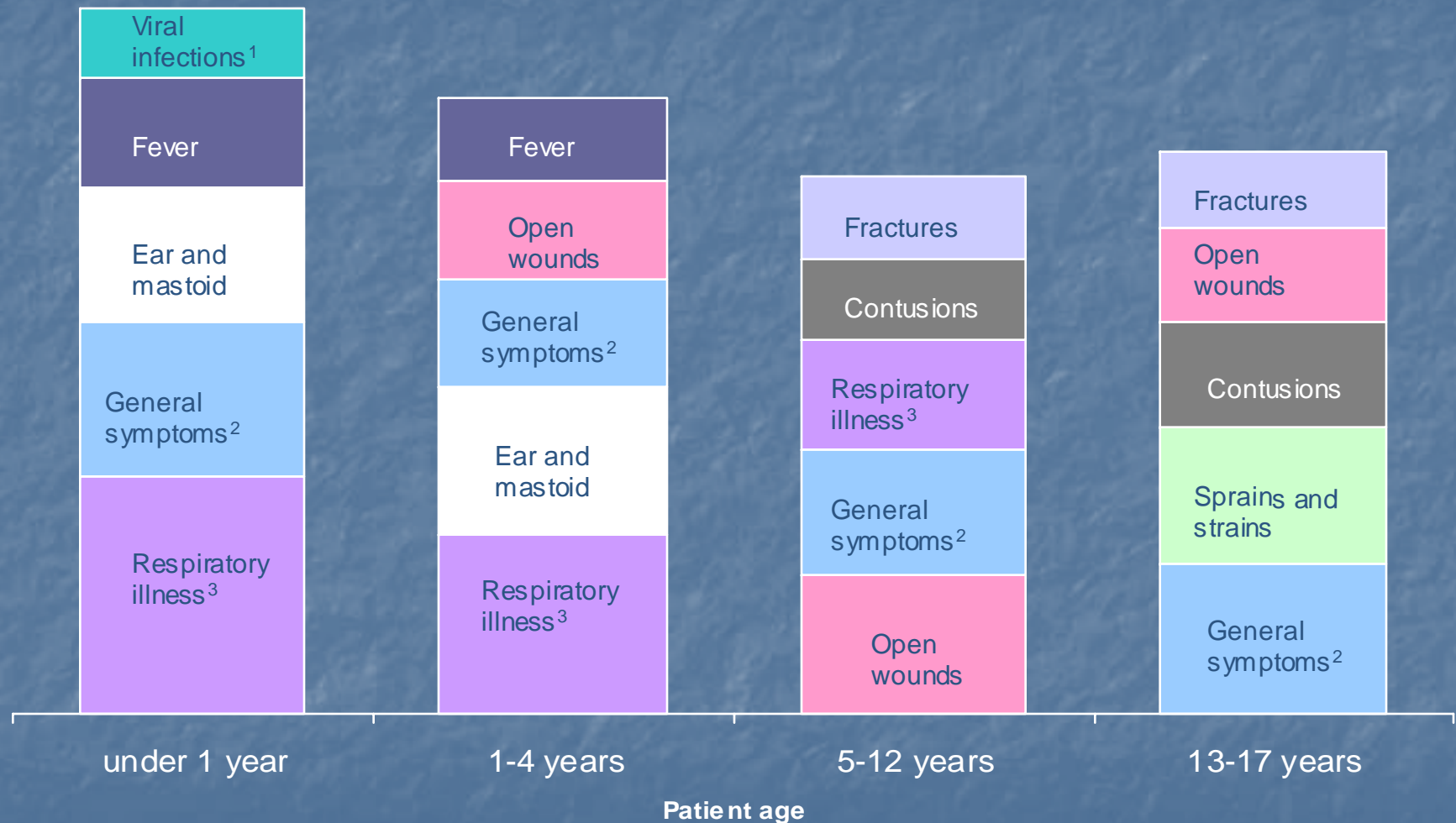
NOTE: <sup>1</sup> $p < 0.05$ .

# Why do they go?





# Top 5 diagnosis groups of pediatric emergency department visits by patient age : United States, 2003-05

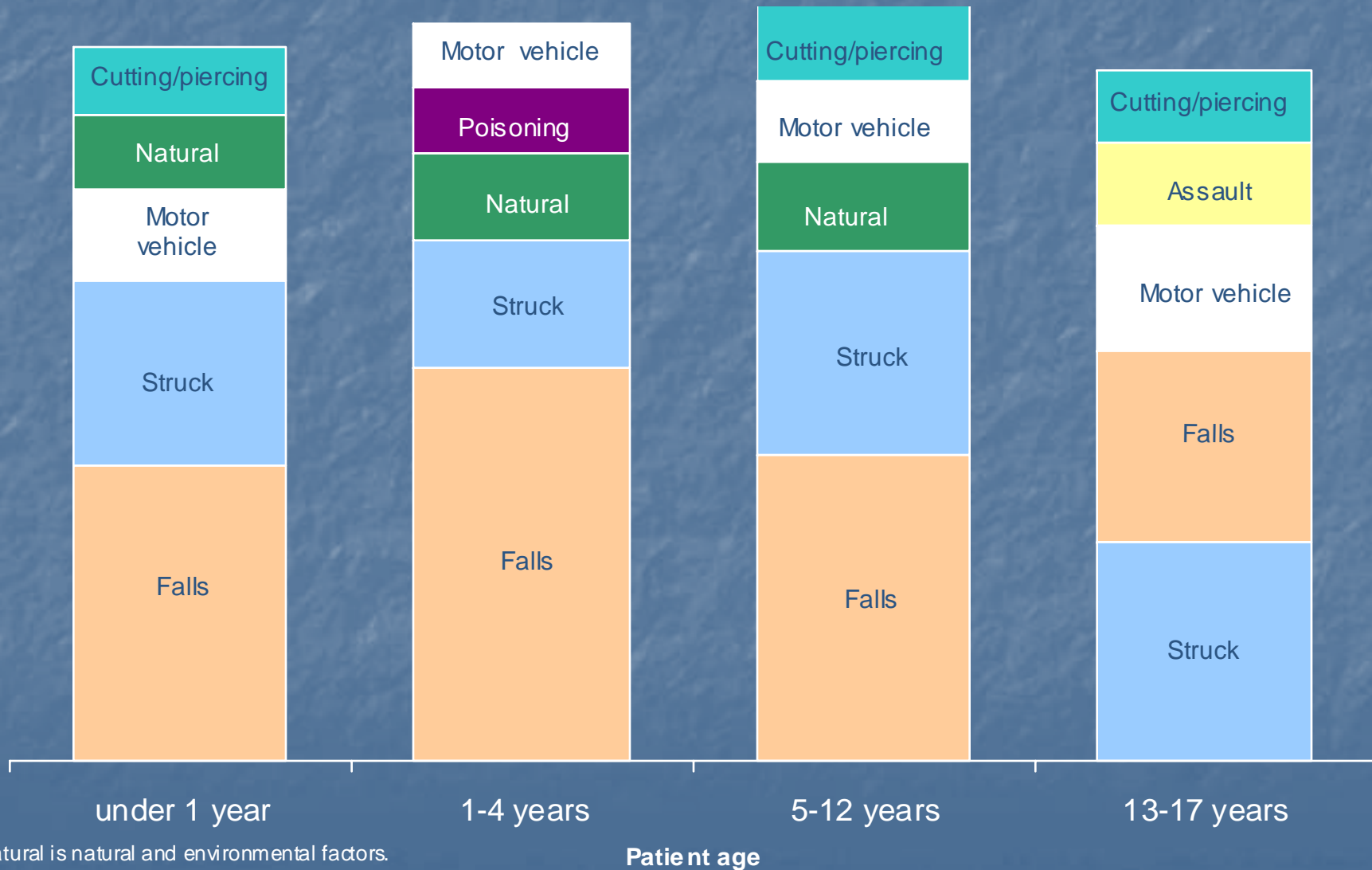


<sup>1</sup> Viral infections includes chlamydial infections.

<sup>2</sup> General symptoms includes items such as rash, heart murmur, cough, stridor, chest pain, nausea, vomiting, and pain.

<sup>3</sup> Respiratory illness includes acute sinusitis, pharyngitis, tonsillitis, and bronchiolitis.

# Top 5 cause of injury groups of pediatric emergency department visits by patient age : United States, 2003-05

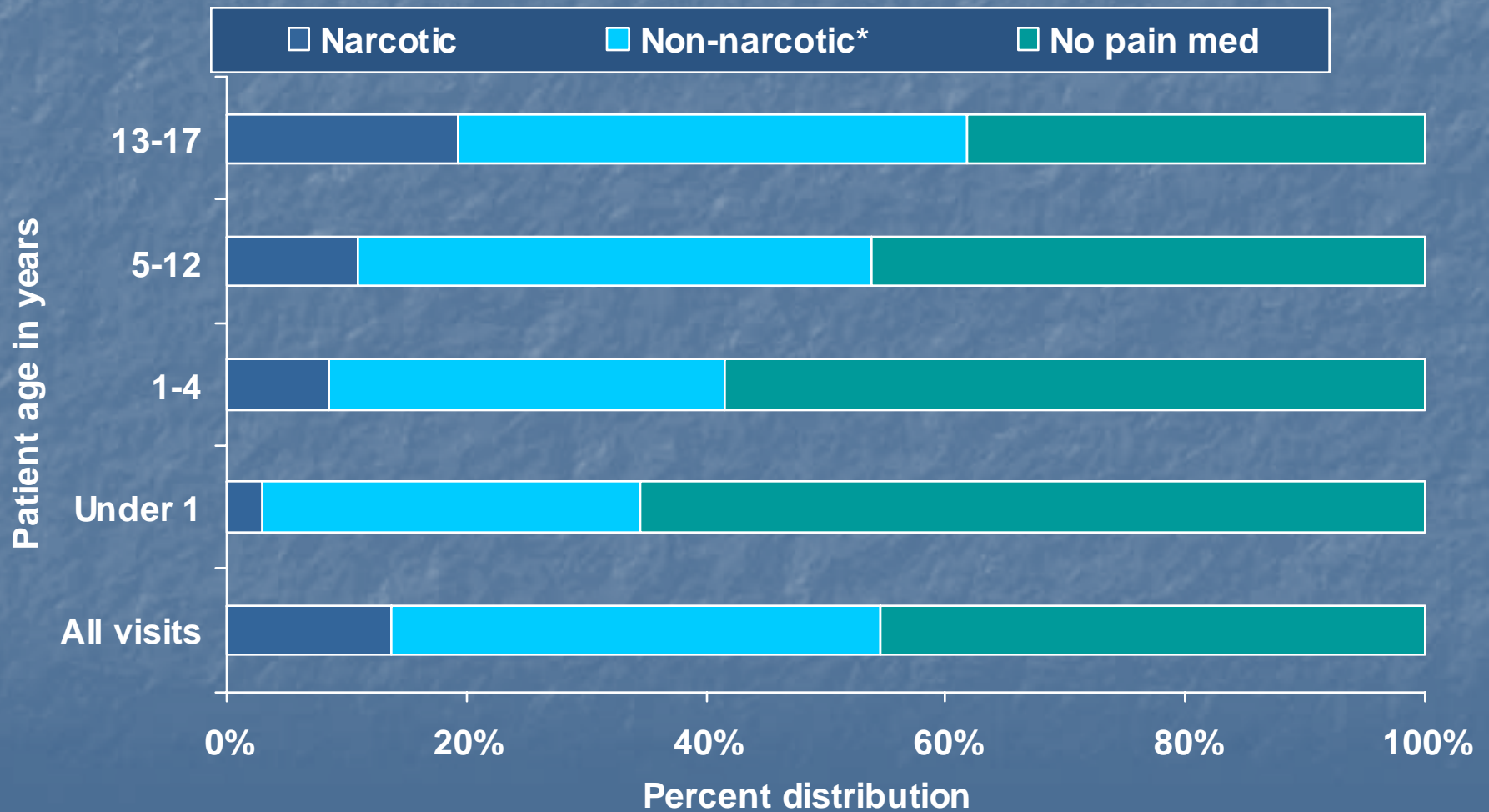


# What happens while in the ED?

- On average: 2.5 hrs in the ED, 49.5 minutes waiting to see a physician, 1.7 hrs being treated.
- 10.3% see an NP or PA, 9.2% do not see a physician
- <1% of visits arrive DOA, die in the ED or need resuscitation.
- Nonsteroidal anti-inflammatory drug (NSAID) are the most frequently prescribed therapeutic drug class - 17.6%
- Imaging was the most frequently used diagnostic service – 32.2%

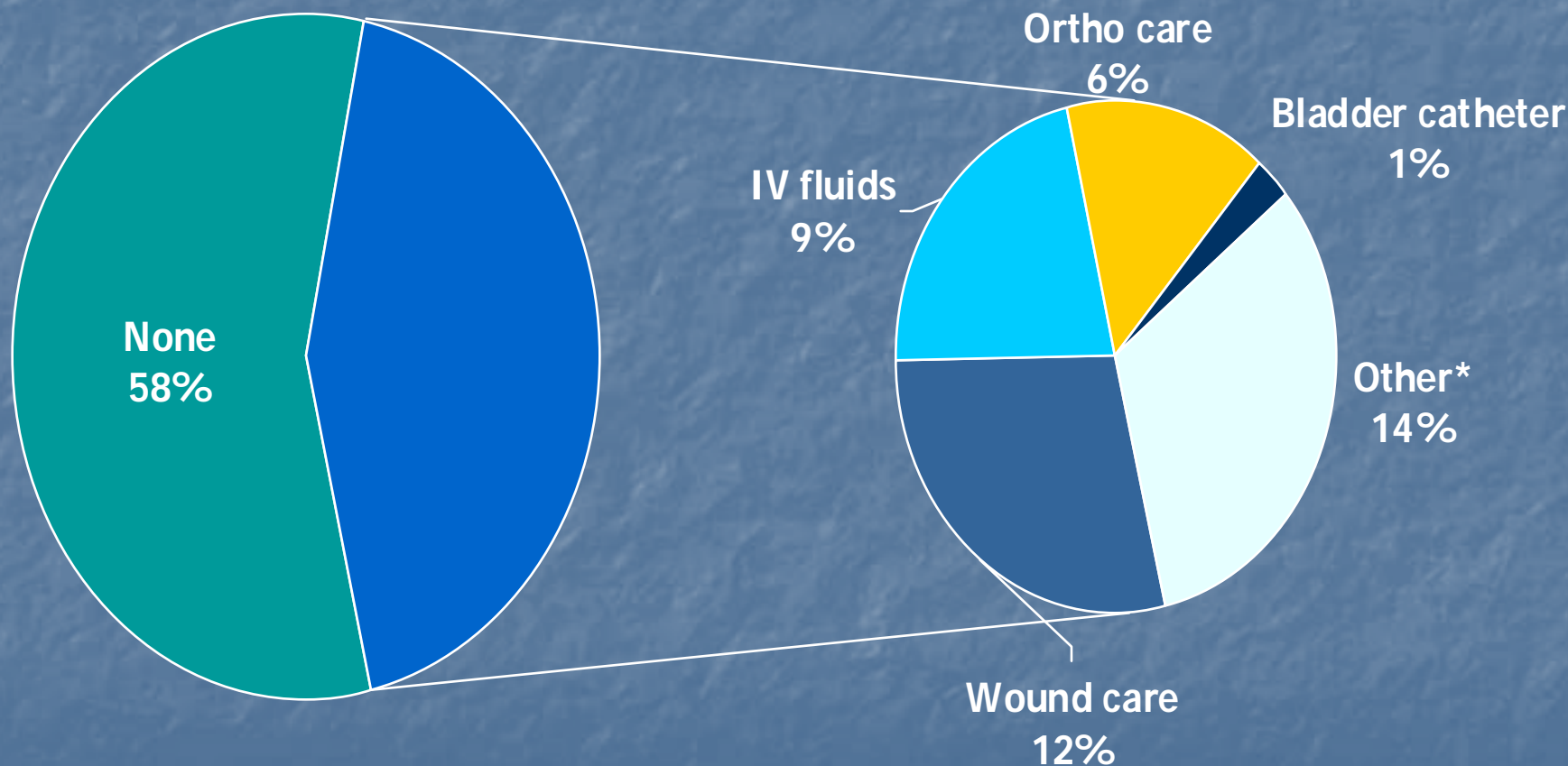


# Percent distribution of injury-related pediatric emergency department visits, presenting with moderate or severe pain by mention of pain medication, according to patient age: United States 2003-05



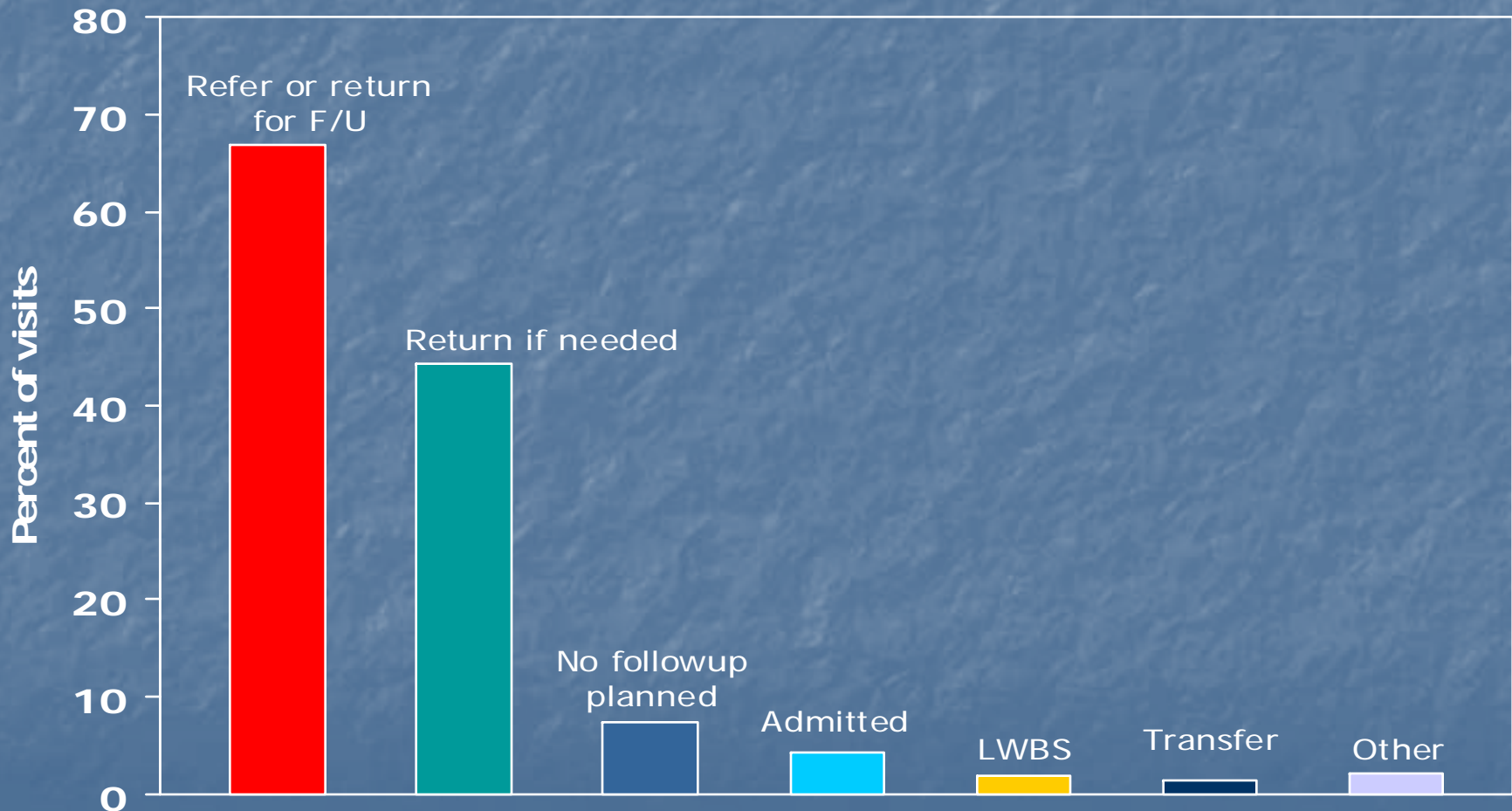
\*Includes antipyretics

# Percent distribution of pediatric emergency department visits by selected procedures: United States, 2003-05



Other includes cardiopulmonary resuscitation; endotracheal intubation; obstetrics or gynecology care; ear, nose, and throat care; nebulizer therapy; thrombolytic therapy; and nasogastric tube or gastric lavage.

# Percent of pediatric emergency department visits by discharge disposition: United States, 2003-05

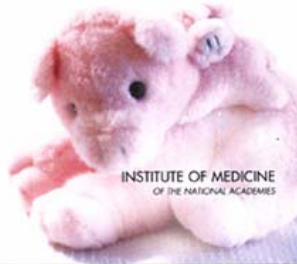




# IOM uses NCHS data to study the future of emergency care

FUTURE OF EMERGENCY CARE

## EMERGENCY CARE FOR CHILDREN GROWING PAINS



INSTITUTE OF MEDICINE  
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Form Approved OMB No. 0920-0278 Exp. Date 04/30/2005

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**NATIONAL HOSPITAL AMBULATORY MEDICAL CARE SURVEY**  
2003 Panel  
Emergency Pediatric Services and Equipment Supplement

Disposition — To be completed by Census Field Representative

Hospital HAS an eligible ED - Complete Supplement  
 Hospital does NOT have an eligible ED - **STOP** Return to ED

## Advance Data

From Vital and Health Statistics



Number 367 • February 28, 2006

### Availability of Pediatric Services and Equipment in Emergency Departments: United States, 2002-03

by Kimberly R. Middleton, B.S.N., M.P.H., and Catharine W. Burt, Ed.D.,  
Division of Health Care Statistics

#### Abstract

**Objectives**—This report presents estimates on the availability of pediatric services, expertise, and supplies for treating pediatric emergencies in U.S. hospitals.

**Methods**—The Emergency Pediatric Services and Equipment Supplement (EPSES) was a self-administered questionnaire added to the 2002-03 National Hospital Ambulatory Medical Care Survey (NHAMCS). NHAMCS samples non-Federal, short-stay and general hospitals in the United States. The EPSES content was based on the 2001 guidelines for pediatric services, medical expertise, staff-sized supplies, and equipment for emergency departments (EDs) developed by the American Academy of Pediatrics (AAP) and the American College of Emergency Physicians (ACEP). Combined response rate for both years was 86 percent. Estimates were weighted to produce average annual estimates of pediatric services, expertise, and equipment availability in EDs.

**Results**—One-half of hospitals (52.9 percent) admitted pediatric patients, but did not have a specialized inpatient pediatric ward. One-third (38.3 percent) admitted pediatric patients and had a separate pediatric ward; the remainder did not admit pediatric patients. Among those that did not admit pediatric cases, 30.4 percent were in counties that had a children's hospital. One-quarter of EDs had access 24 hours and 7 days a week to a board-certified pediatric emergency medicine attending physician. Only 5.5 percent had all recommended pediatric supplies, but one-half had greater than 85 percent of recommended supplies. Most hospitals without pediatric trauma service (90.7 percent) or pediatric intensive care units (97.5 percent) transferred critical pediatric patients to hospitals with these services. EDs in hospitals with specialized inpatient facilities for children were more likely to meet the AAP and ACEP guidelines for pediatric ED services, expertise, and supplies.

**Keywords** Pediatric • children • emergency department • NHAMCS • AAP • ACEP

#### Introduction

U.S. hospitals receive about 30 million emergency visits from the population under 18 years of age, which is about one-fourth of the care provided in emergency departments. (1) However, little is known about the status of providing emergency pediatric care in EDs. In April 2001, the *Annals of Emergency Medicine* published "Care of children in the emergency department: Guidelines for preparedness," which was jointly developed by AAP and ACEP (2). Although the guidelines did not set specific thresholds for preparedness, they did provide information on services, equipment, and supplies considered essential for managing pediatric emergencies. These included recommendations for pediatricians to be on call in every ED, for all EDs to establish transfer agreements with higher-level pediatric facilities to ensure timely access to care for critically ill and injured children, and for the availability of age- and size-appropriate supplies in each ED.

#### Acknowledgments

The authors wish to acknowledge Daniel Kavanagh (from the Health Resource and Service Administration), Irma Anepic, and Jennifer Madans (from NCHS) for helpful comments made on drafts of the manuscript, and Roberto Velazquez (from NCHS) for preparing the analytical files. The report was edited by Klauzia M. Cox, typeset by Annette F. Norman, and the figures were produced by Jamila Ogburn of the Office of Information Services, Information Design and Publishing Staff.



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# Take Home Messages

- NHAMCS can be used as an effective tool for monitoring trends in pediatric ED encounters.
- Collecting and analyzing such data can help fill in the gaps of understanding regarding the role that EDs play in health care for children.
- The results of this study may help policymakers model emergency medical services for children and adolescents.