

Results from the National Survey of Ambulatory Surgery (NSAS)

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Overview

- National Center for Health Statistics (NCHS)
- National Survey of Ambulatory Surgery (NSAS)
 - Survey Design
 - Data
 - × Overall
 - × Anesthesia
 - Next Steps



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NCHS

- Who we are:
 - Department of Health and Human Services (DHHS)
 - × Centers for Disease Control and Prevention (CDC)
 - × National Center for Health Statistics (NCHS)
- NCHS is the Nation's principal health statistics agency
 - compile statistical information to guide actions and policies to improve the health of the population



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NCHS

- Our health statistics allow us to:
 - document the health status of the population
 - monitor trends in health status and health care delivery
 - support biomedical and health services research
 - provide information to guide and evaluate health policy decisions and programs



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NCHS Major Surveys

- Vital Statistics
- NHANES (National Health and Nutrition Examination Survey)
- NHIS (National Health Interview Survey)
- **NHCS (National Health Care Surveys)**



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National Health Care Surveys

- Provider-based surveys which include:
 - **National Survey of Ambulatory Surgery (NSAS)**
 - National Hospital Discharge Survey (NHDS)
 - National Hospital Ambulatory Medical Care Survey (NHAMCS)
 - National Ambulatory Medical Care Survey (NAMCS)
 - National Nursing Home Survey (NNHS)
 - National Home & Hospice Care Survey (NHHCS)



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National Health Care Surveys

- Obtaining information about the:
 - facilities that supply health care,
 - services rendered, and
 - characteristics of the patients served
- Data are collected directly from the establishments and/or their records rather than from the patients



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National Health Care Surveys

- National probability samples
- Voluntary
- Maintain confidentiality of providers and patients



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NSAS

- National probability sample of freestanding and hospital-based ambulatory surgery centers and their patients
- Last conducted 1994 – 1996



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Scope of the NSAS

- Two stage probability design
- First stage: sample of facilities
 - Freestanding ASCs
 - Hospital-based ASCs
- Second stage: sample of ambulatory surgical visits



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Scope of the NSAS

- Surgical and nonsurgical procedures performed on an ambulatory (outpatient) basis
 - General operating rooms
 - Dedicated ambulatory surgery rooms
 - Other specialized rooms such as endoscopy units and cardiac catheterization labs
 - Pain block was included in the 2006 NSAS



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Endorsements

- Federated Ambulatory Surgery Association (FASA)
- Society for Ambulatory Anesthesia (SAMBA)
- American Health Information Management Association (AHIMA)
- American Association of Ambulatory Surgery Centers (AAASC)
- American College of Surgeons (ACS)
- American Academy of Ophthalmology (AAO)



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NSAS Participation

- Total of 696 facilities sampled
 - Freestanding ASCs
 - × 472 sampled
 - × 295 participated → 74% response rate
 - Hospital-based ASCs
 - × 224 sampled
 - × 142 participated → 75% response rate
- Sample of about 10-12 records per month per facility
 - Collected data on 52,233 visits



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Data Collection

- The US Census Bureau collected data
- Induction interview
 - obtain data on practice or facility characteristics
 - train staff
- Preferred method was ASC/ hospital staff completing Medical Abstract forms



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Medical Abstract Form

- Patient characteristics
 - Date of Birth / Age
 - Sex
 - Race
 - Ethnicity
 - ZIP Code



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Medical Abstract Form

- Visit characteristics
 - Expected source of payment
 - × Principal
 - × Other Sources
 - Disposition



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Medical Abstract Form

- Surgical characteristics
 - Surgical times
 - Type of anesthesia
 - Anesthesia provider
 - Diagnoses
 - Procedures
 - Symptoms present during or after surgery



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Medical Abstract Form

- Follow-up information
 - Contact with patient within 24 hours



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Coding Systems Used

- ICD-9-CM codes reported
 - Up to 7 diagnoses coded
 - Up to 6 procedures coded
- CPT-4 codes not used
 - American Medical Association's CPT-4 codes are proprietary information
 - Needed a coding system that we could release publicly



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Facility Questionnaire

OMB No. 0620-0394; Approval Expires 11/30/2009

A. Facility name



B. Facility number

2006 National Survey of Ambulatory Surgery

Facility Questionnaire

Prepared for the
U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Health Statistics

by
U.S. Department of Commerce
Economics and Statistics Administration
U.S. Census Bureau

CDC NSAS-3.1
(9-20-2004)

A Facility Profile - Continued

9a. What percent of the cases who receive ambulatory surgery in this facility (hospital) are **NOT** scheduled for surgery in advance?
 %

b. Of the unscheduled cases, what percent are emergencies?
 %

10. Have you implemented or do you plan to implement National Patient Safety Goals procedures (e.g., JC/AHO's *Unsafe Surgery*, *Wrong Procedure, Wrong Person*) or similar safety standards?
 Have already implemented
 Plan to implement
 Do not plan to implement
 Unknown

11. What procedures does your facility (hospital) have in place in case an *(tick all that apply)*
 Staff trained in Basic Life Support (BLS) Support (AGLS)
 Staff trained in Advanced Cardiac Life Support (PALS)
 Staff trained in Pediatric Advanced Life Support (PALS)
 Check life safety equipment (i.e., defibrillators)
 Transfer agreements with hospital(s)
 Agreements with physicians
 Arrangements with ambulance and/or helicopter services
 Other - *Specify*
 None of the above

HOSPITAL ONLY

12. What type of ownership is this hospital?
 Nonprofit
 Government
 Church related
 Other - *Specify*

For profit

13. Is this hospital a teaching hospital?
 Yes - *SKIP to item 15a*
 No - *What percent of your physicians are affiliated with a teaching hospital?*
 % - *SKIP to item 15a*

FREESTANDING ONLY

14. What is the estimated time it takes to travel from this facility to the closest acute care hospital?
 Minutes

15. Does your facility have extended stay facilities in use?
 No
 < 24 hours
 24-72 hours
 > 72 hours

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Facility Questionnaire

- **Facility information**
 - Accreditation, ownership
 - After hours care
 - Payer Mix
 - Emergency capabilities
 - × Unscheduled cases
 - × Travel to the closest acute care hospital
 - × Life support
- **Staff profile**
 - # medical staff
 - Physician specialties
 - Physician board certification
 - Affiliation with teaching hospital
- **Postoperative care**
 - Time in recovery
 - Extended care



Data Processing

- Quality control procedures
 - Forms reviewed by Census supervisors before being keyed
 - Rekey of forms
 - × Rate of discrepancy <0.3%
 - Edit checks performed by NCHS



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Estimation from the Sample to the Nation

- Each sampled record will represent hundreds of other visits
- Components of the estimation procedure:
 - Inflation by reciprocals of sampling selection probabilities
 - Adjustment for non-response



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Confidentiality

- Confidentiality protected by Title 42, USC, Section 242m(d)
- Identifying information may be stripped
- Unable to identify either the facility or the individual patient
- Disclosure Review Board approves release
- Users agree not to try to identify providers/facilities or individual patients or publish small cells
- This protocol was approved by the NCHS Institutional Review Board



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Who uses NSAS data?

- Health professional associations
- State and federal policy makers
- Health services researchers
- Epidemiologists
- Hospitals and ASCs
- Universities and medical schools
- Broadcast & print media
- Medical supply companies



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2006 NSAS Data



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Number and rate of visits, 1996 vs. 2006

Utilization measure	1996	2006
Number of visits	20,838,000	35,225,000
Visits to freestanding ASCs	3,313,000	15,243,000
Visits to hospital-based ASCs	17,524,000	19,982,000
Rate of visits per 1,000 population	78.9	118.1
Rate to freestanding ASCs	12.6	51.1
Rate to hospital-based ASCs	66.4	67.0

Excludes ambulatory surgery patients admitted to hospitals as inpatients

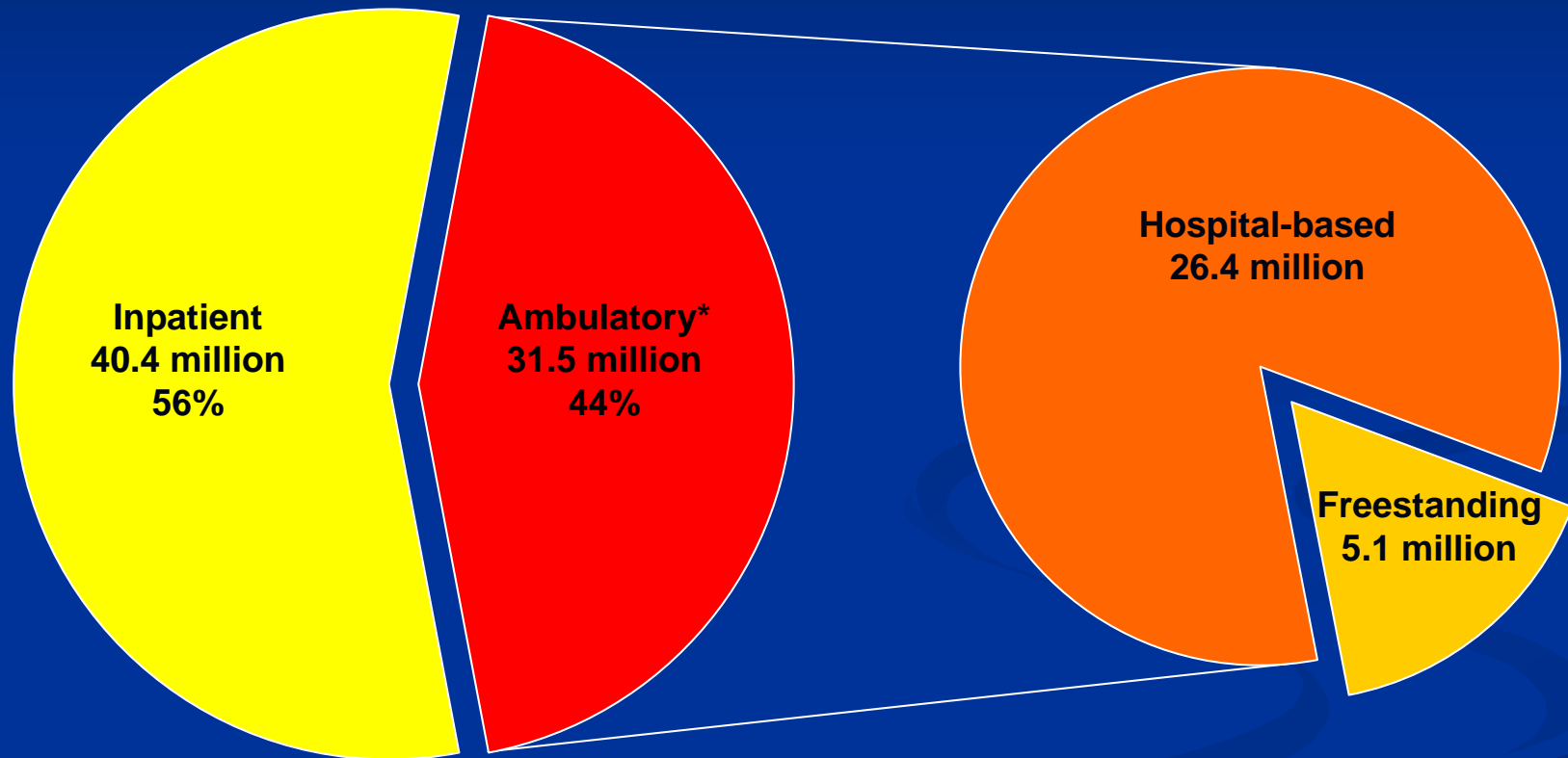
Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Percent distribution of procedures by setting, 1996



*Excludes ambulatory surgery patients admitted to hospitals as inpatients

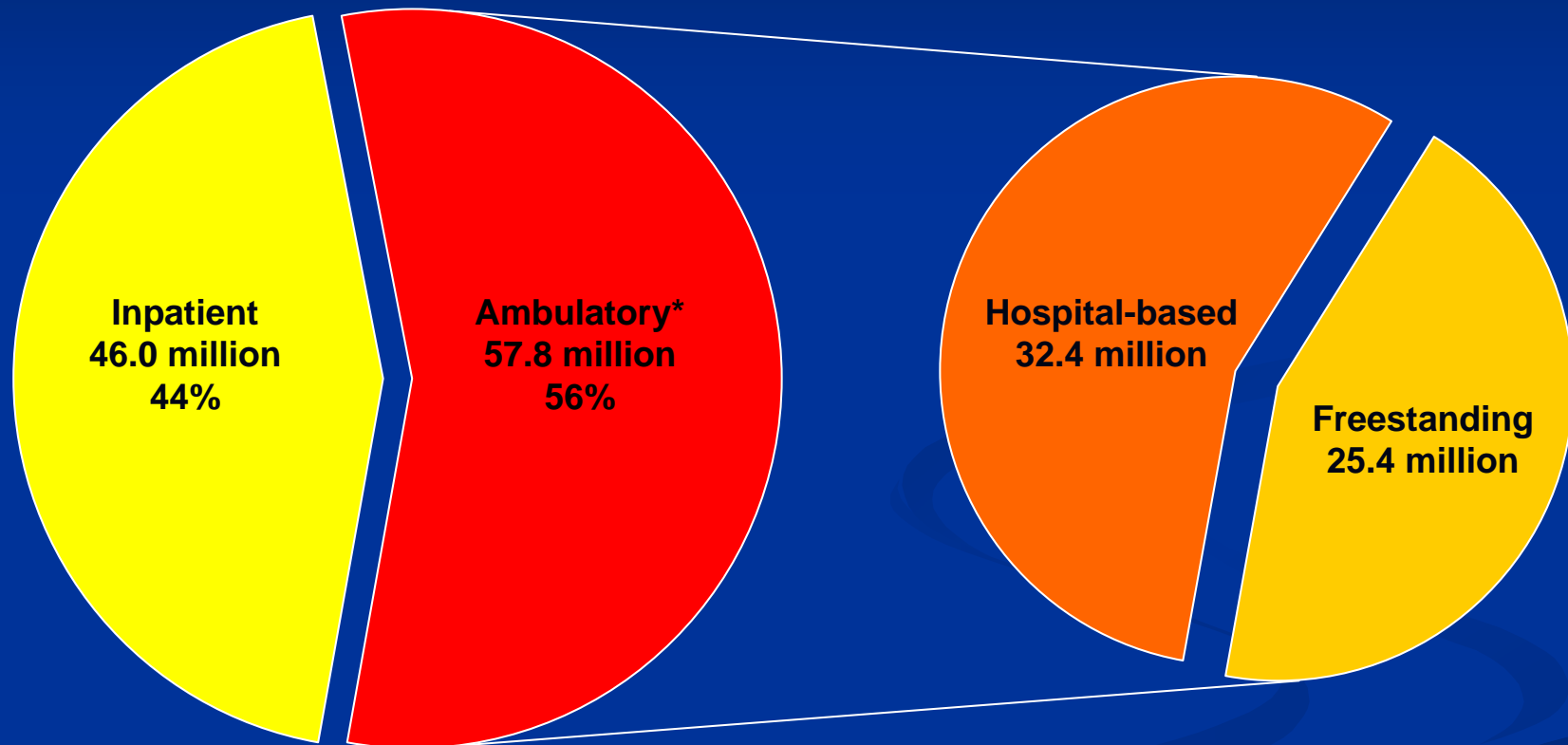
Sources: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS) and National Hospital Discharge Survey (NHDS)



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Percent distribution of procedures by setting, 2006



*Excludes ambulatory surgery patients admitted to hospitals as inpatients

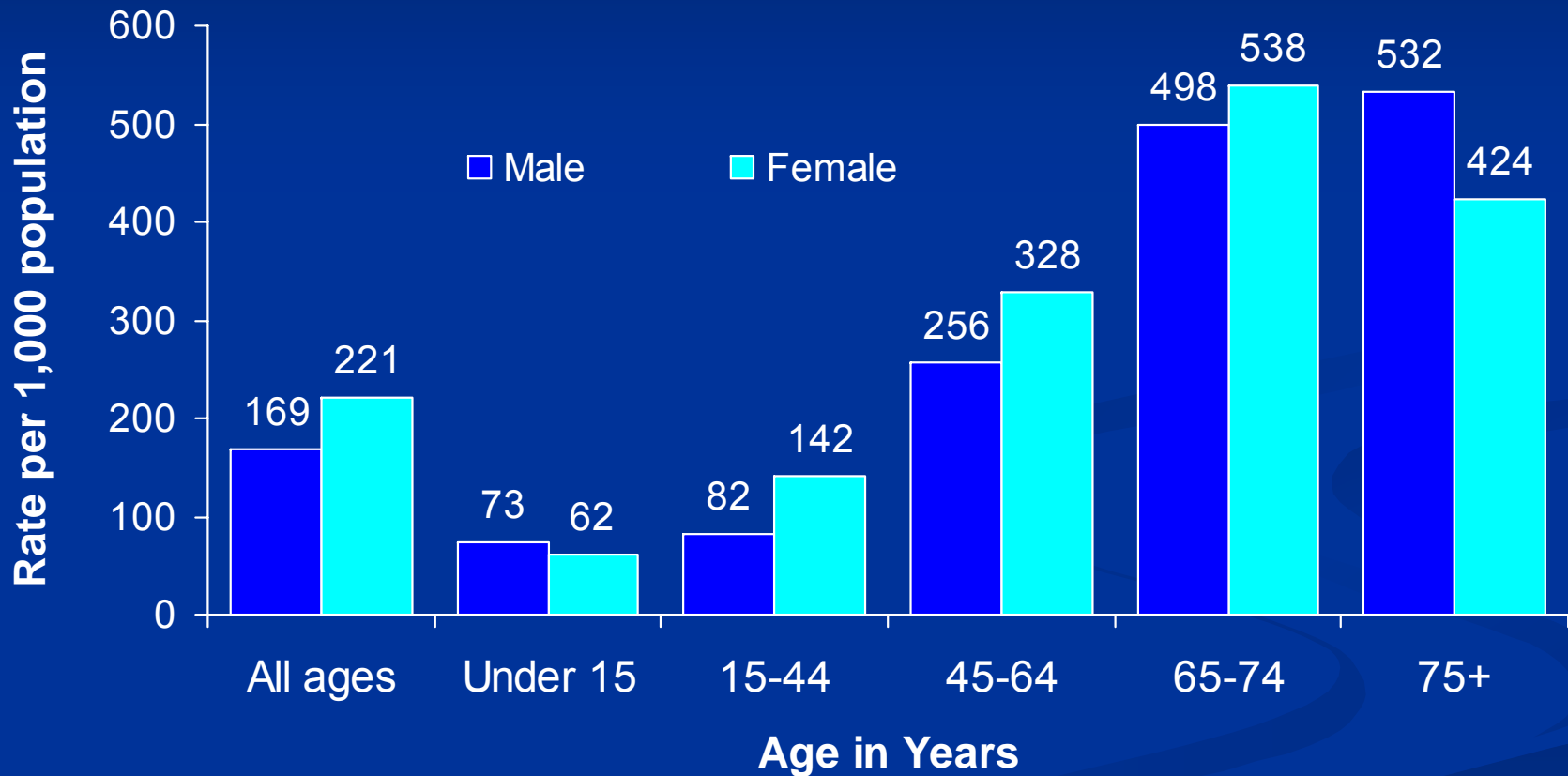
Sources: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS) and National Hospital Discharge Survey (NHDS)



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Rate of ambulatory procedures by age and sex, 2006



Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Most common ambulatory procedures, 1996



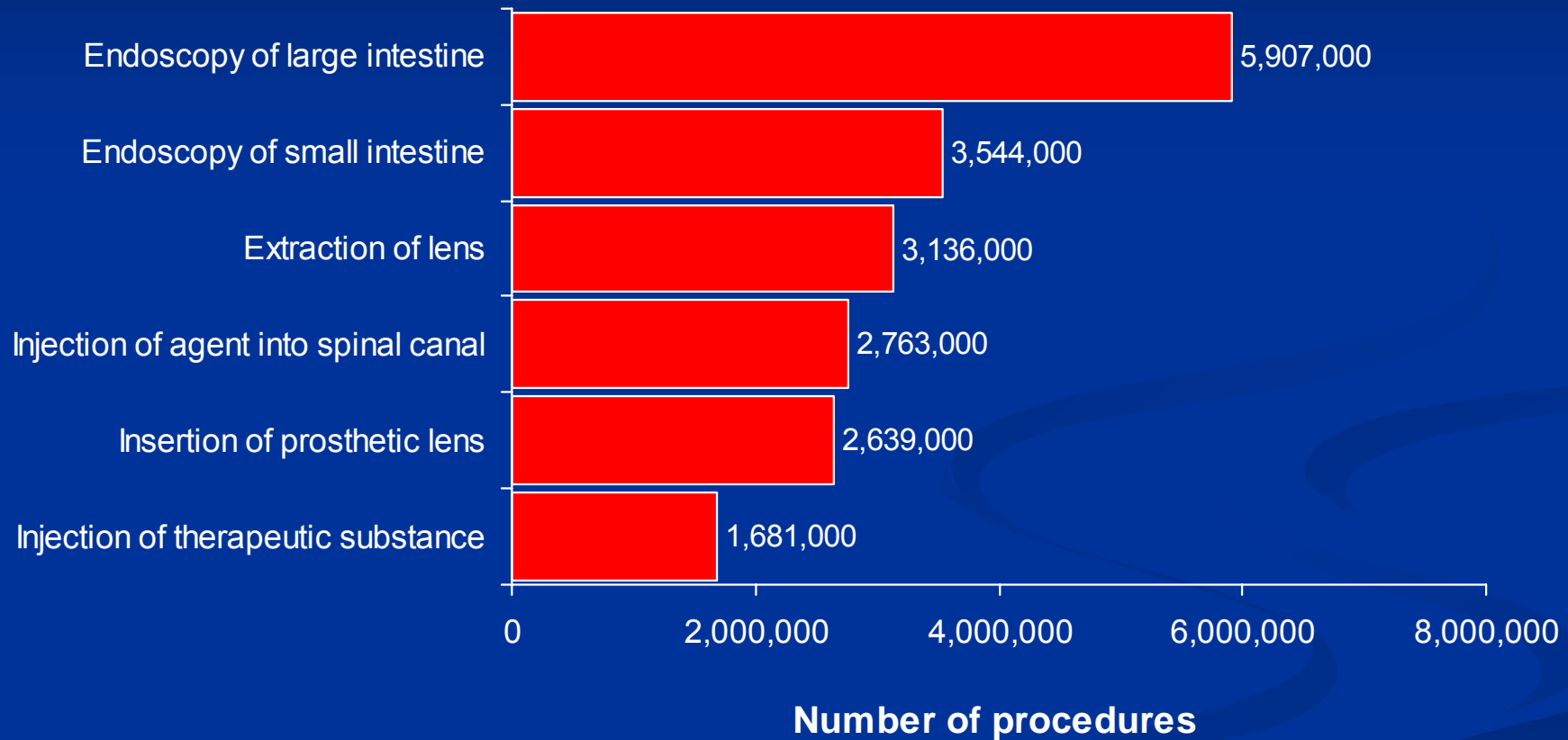
Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Most common ambulatory procedures, 2006



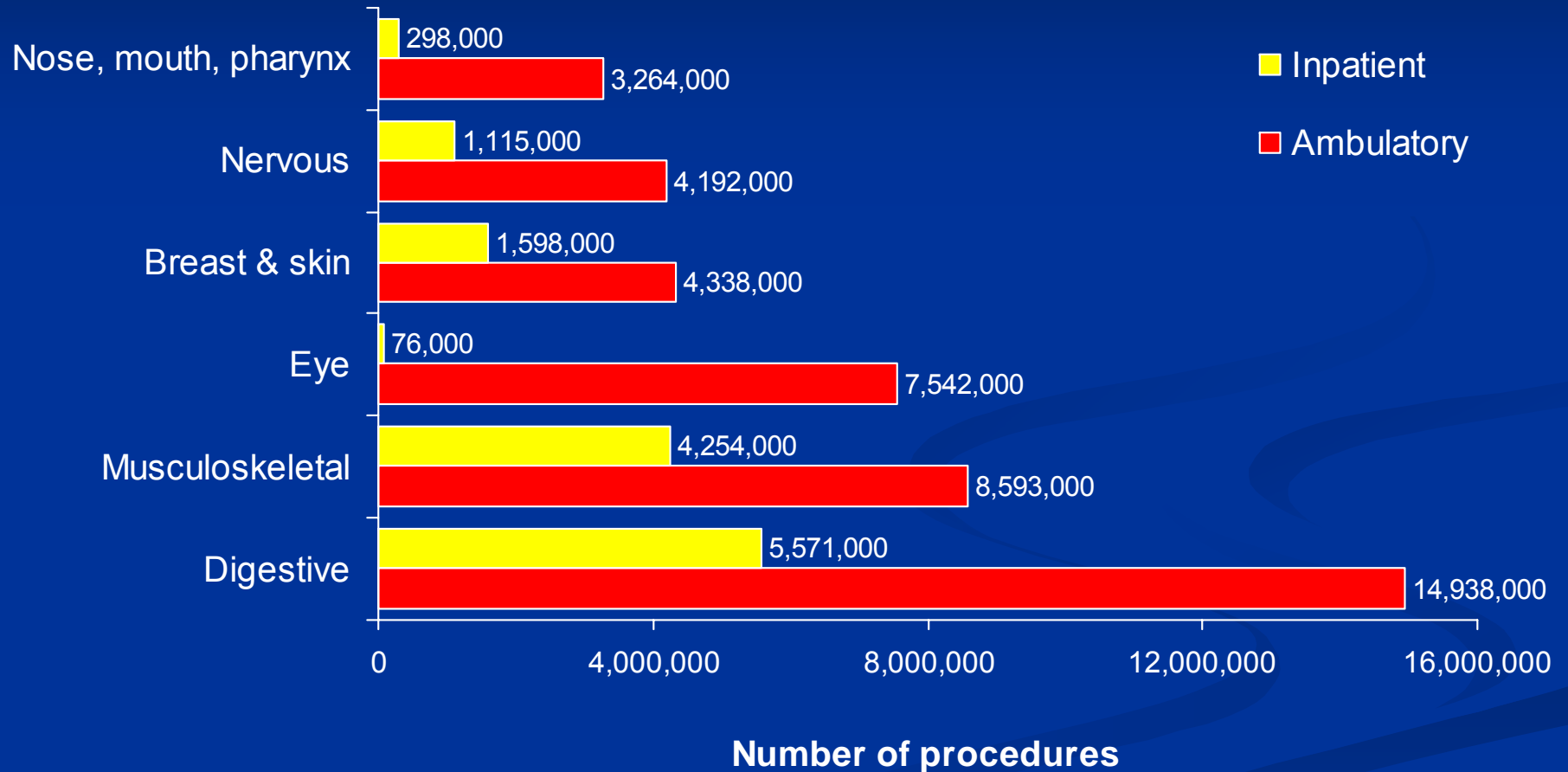
Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Procedures performed by setting and body system, 2006



Sources: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS) and National Hospital Discharge Survey (NHDS)



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Characteristics of ambulatory surgery patients by facility type, 2006

Characteristic	Freestanding	Hospital-based
Age (years)	53.5	51.7
Female (%)	58.3	57.3
Race/Ethnicity (%)		
Not stated	63.3	15.9

Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Characteristics of ambulatory surgery patients by facility type, 2006

Characteristic	Freestanding	Hospital-based
Disposition (%)		
Routine	95.4	91.3
Observation status	<1	1.7
Recovery care facility	<1	<1
Inpatient admission	<1	1.4
Surgery cancelled	<1	<1
Other	1.4	2.1
Not stated	2.5	3.0

Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)

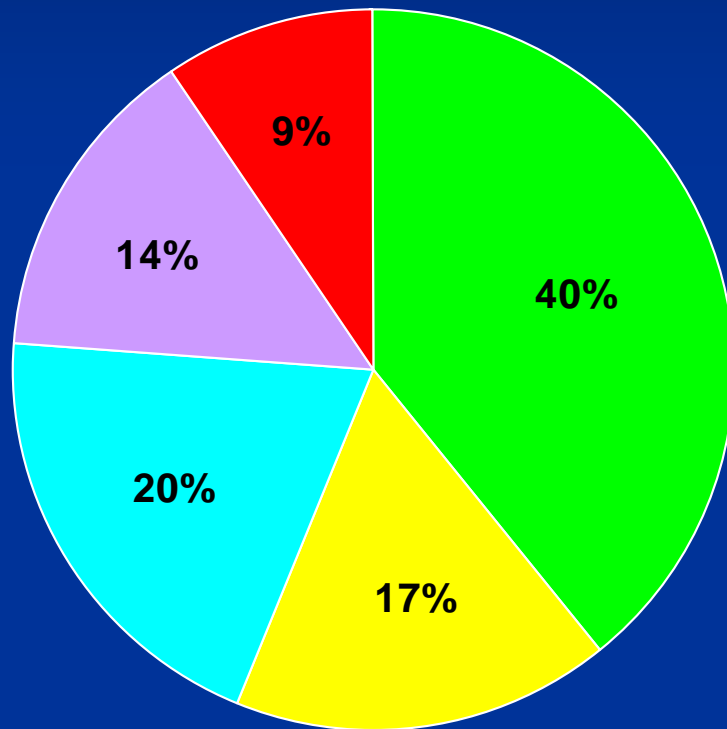


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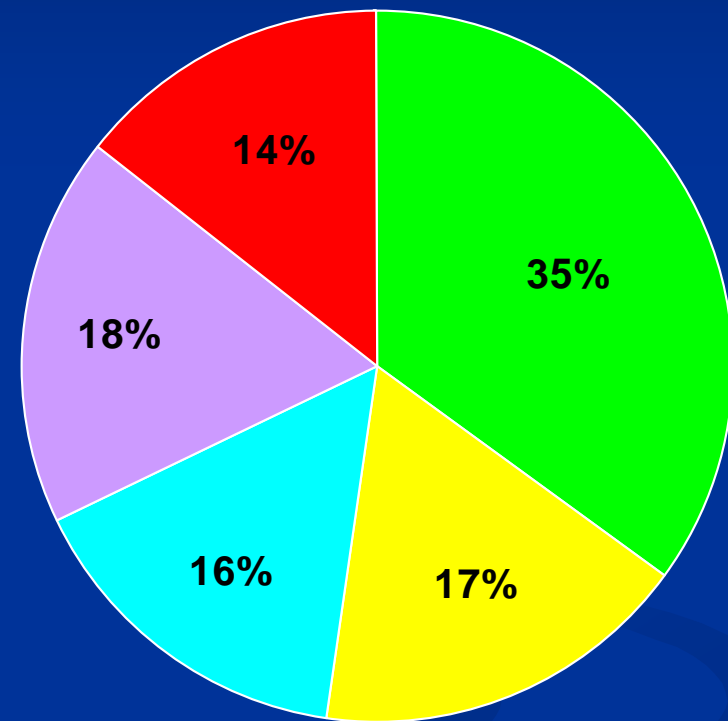


Types of anesthesia provider by ASC location, 2006

Freestanding



Hospital-based



■ Anesthesiologist ■ CRNA ■ Surgeon/ other physician ■ Multiple providers ■ Unknown

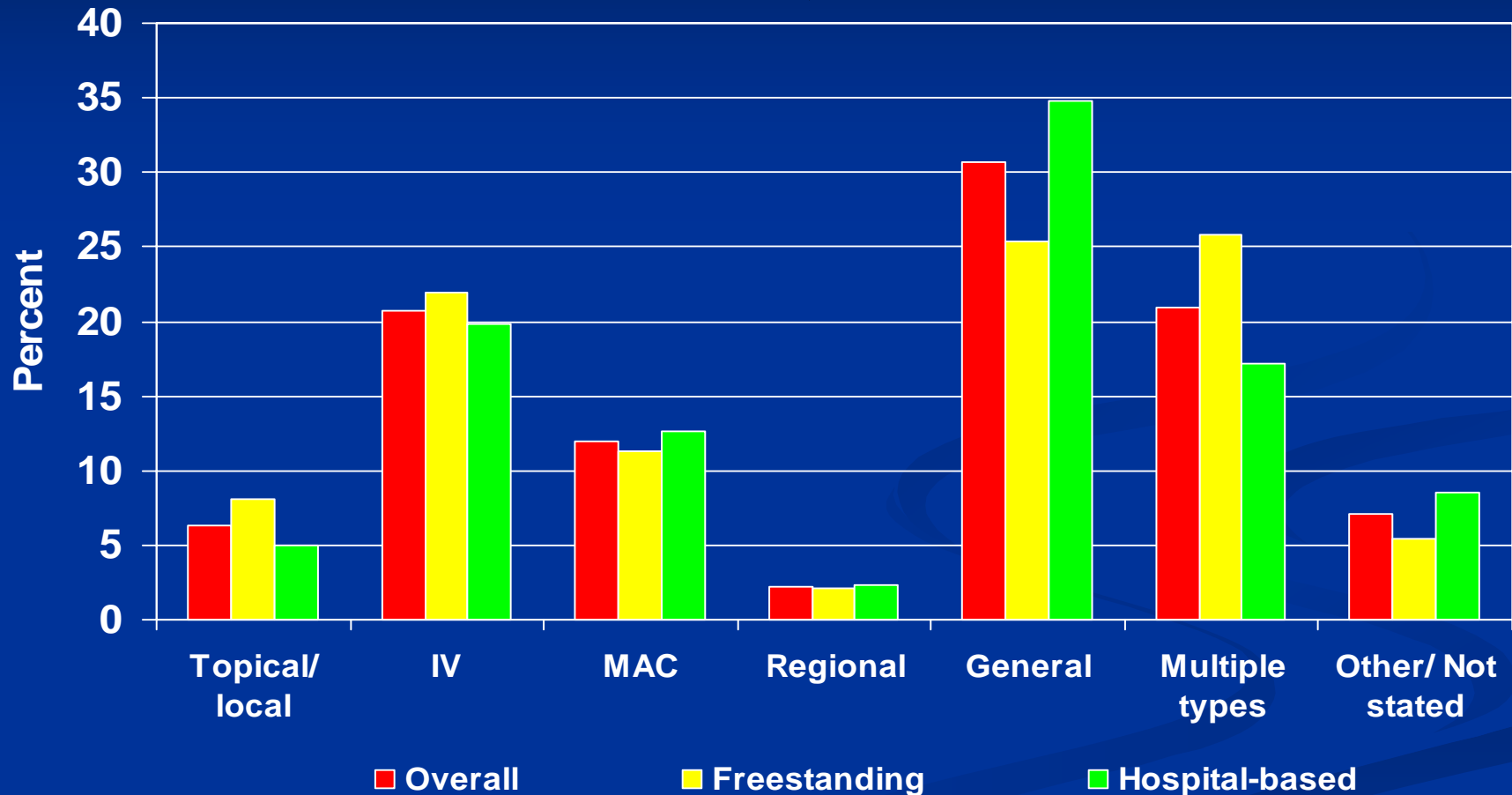
Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Type of anesthesia by ASC location, 2006



Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Calculation of surgical times, 2006

- Surgical time= Time surgery ended – Time surgery began
- OR time= Time out of OR – Time in OR
- Post Op time= Time out of PO care – Time in PO care
- Total time= Time out of PO care – Time in OR



Procedure Classes

- AHRQ's Procedure Class grouper
 - ICD-9-CM procedures are grouped into one of 4 broad categories
 - × Minor Diagnostic
 - × Minor Therapeutic
 - × Major Diagnostic
 - × Major Therapeutic

Source: AHRQ, <http://www.hcup-us.ahrq.gov/toolssoftware/procedure/procedure.jsp>



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Procedure Classes

- Minor Diagnostic - Non-operating room procedures that are diagnostic
 - e.g., 87.03 CT scan of head
- Minor Therapeutic - Non-operating room procedures that are therapeutic
 - e.g., 02.41 Irrigate ventricular shunt

Source: AHRQ, <http://www.hcup-us.ahrq.gov/toolssoftware/procedure/procedure.jsp>



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Procedure Classes

- Major Diagnostic – Operating room procedures that are diagnostic
 - e.g., 01.14 Open brain biopsy
- Major Therapeutic – Operating room procedures that are therapeutic
 - e.g., 39.24 Aorta-renal bypass

Source: AHRQ, <http://www.hcup-us.ahrq.gov/toolssoftware/procedure/procedure.jsp>



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Average surgical times, 2006

	Surgical Time (min)	OR Time (min)	Post Op Time (min)	Total Time (min)
Overall	30.4	53.9	67.0	125.0
Minor Diagnostic	20.8	41.1	60.6	107.1
Minor Therapeutic	27.0	47.7	58.1	111.1
Major Diagnostic	42.1	73.0	92.7	167.9
Major Therapeutic	41.3	68.0	78.1	149.6

Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Symptoms present during or after surgery, 2006

- Any symptom listed in the medical record during or after surgery
- Symptoms occurred infrequently (4.15%)
 - Nausea
 - Hypertension
 - Vomiting
 - Bleeding

Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Presence of symptoms by type of anesthesia, 2006

Type of anesthesia	Percent that experienced symptoms
General	6.0%
Regional	4.3%
Multiple types	3.9%
IV	3.8%
Topical/ local	2.5%
Other/ not specified	2.6%
MAC	2.3%

Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Follow up with patients

- Follow up within 24 hours after surgery
 - 55% yes
 - 15% no
 - 30% unknown

- Patient was reached
 - 40% yes
 - 14% no
 - 28% unknown, 19% missing

Source: CDC/NCHS, National Survey of Ambulatory Surgery (NSAS)



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Plans for the future



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Publications

- Data released to the public on the web via de-identified public use data file (July/August)
- Reports and publications using NSAS data
 - National Health Statistics Reports
 - NCHS Series 13 Report on inpatient and ambulatory procedures
- Articles for peer-reviewed journals



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Re-fielding the NSAS

- Incorporate the NSAS into the National Hospital Ambulatory Medical Care Survey (NHAMCS)
 - Recognize the importance of collecting this data more frequently
 - Hospitals
 - × Emergency departments
 - × Outpatient departments
 - × Hospital-based ASCs
 - Freestanding ASCs



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For more information on NSAS

- Check out our website:

www.cdc.gov/nchs/nsas.htm

- Data released in July/August 2008.
- Contact me:

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