


Care of Women in U.S. Hospitals, 2000



| Age | Charges | Length of Stay | In-hospital Deaths | Insurance Coverage | Obstetric Care |

Healthcare Cost and Utilization Project

A Federal-State-Industry Partnership

 Agency for Healthcare Research and Quality

Care of Women in U.S. Hospitals, 2000



HCUP Fact Book No.3

H. Joanna Jiang, Ph.D.
Anne Elixhauser, Ph.D.
Joyce Nicholas, M.P.H.
Claudia Steiner, M.D., M.P.H.
Carolina Reyes, M.D.
Arlene S. Bierman, M.D., M.S.

| Age | Charges | Length of Stay | In-hospital Deaths | Insurance Coverage | Obstetric Care |



Suggested citation

Jiang HJ, Elixhauser A, Nicholas J, et al. Care of Women in U.S. Hospitals, 2000. Rockville (MD): Agency for Healthcare Research and Quality; 2002. HCUP Fact Book No. 3; AHRQ Publication No. 02-0044.



Acknowledgments

Thanks to James Maedke and Shiqiang Li at Social and Scientific Systems, Inc. for their invaluable assistance in statistical programming and to DonnaRae Castillo, AHRQ Office of Health Care Information, for editorial assistance.

The unprecedented volume and pace of change in the U.S. health care delivery system requires new information on health care and its delivery. The mission of the Agency for Healthcare Research and Quality (AHRQ) is to provide information on the health care system – on quality, outcomes, access, cost, and utilization – that decisionmakers can use to improve health care. To help fulfill this mission, the Agency develops and sponsors a number of databases, including the powerful Healthcare Cost and Utilization Project (HCUP). HCUP is a Federal-State-Industry partnership to build a standardized, multi-State health data system.

Through HCUP, AHRQ has taken a lead in developing databases, software tools, and statistical reports to inform policymakers, health system leaders, and researchers at the Federal, regional, and State levels. But for data to be useful, they must be disseminated in a timely, accessible way. In 1999, AHRQ launched HCUPnet, an interactive, Internet-based tool for identifying, tracking, analyzing, and comparing statistics on hospital utilization, outcomes, and charges. Menu-driven HCUPnet guides users in tailoring specific queries about hospital care online; and, with a click of a button, users receive answers within seconds.

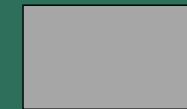
A second way we have developed to make these data more accessible and useful is the HCUP Fact Book series – reports that provide data about hospital care in the United States in an easy-to-use, readily accessible format. Each Fact Book will provide information about specific aspects of hospital care – the single largest component of our health care dollar. The first Fact Book provided an overview of hospital stays in the United States and types of conditions that were treated. The second Fact Book provided information on procedures performed in U.S. hospitals.

This third Fact Book answers many questions about hospital care for women such as: In what ways do hospitalized women differ from hospitalized men? What are the most common reasons for hospitalizations? For what preventable conditions are women hospitalized? Who is billed for various types of hospital stays? What are the patterns of hospital care for pregnancy and delivery?

We invite you to tell us how you are using this Fact Book and other HCUP data and tools and to share suggestions on how HCUP products might be enhanced to further meet your needs. In addition, AHRQ continually seeks to learn how HCUP and other AHRQ products have influenced practice, patient outcomes, and health policy. Please E-mail us at hcup@ahrq.gov or send a letter to the address below.

Irene Fraser, Ph.D.
Director
Center for Organization and Delivery Studies
Agency for Healthcare Research and Quality
2101 East Jefferson Street, Suite 605
Rockville, MD 20852

Foreword



Without the following 28 State partner organizations, the Healthcare Cost and Utilization Project and this chartbook would not be possible:



Contributors

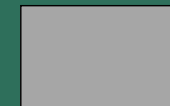
Arizona Department of Health Services
California Office of Statewide Health Planning & Development
Colorado Health & Hospital Association
Connecticut Hospital Association (CHIME)
Florida Agency for Health Care Administration
Georgia Hospital Association
Hawaii Health Information Corporation
Illinois Health Care Cost Containment Council
Iowa Hospital Association
Kansas Hospital Association
Kentucky Department for Public Health
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Division of Health Care Finance and Policy
Missouri Hospital Industry Data Institute
New Jersey Department of Health & Senior Services
New York State Department of Health
North Carolina Department of Health and Human Services
Oregon Association of Hospitals & Health Systems
Pennsylvania Health Care Cost Containment Council
South Carolina State Budget & Control Board
Tennessee Hospital Association
Texas Health Care Information Council
Utah Department of Health
Virginia Health Information
Washington State Department of Health
West Virginia Health Care Authority
Wisconsin Department of Health & Family Services

In May 2000, HCUP State partners and AHRQ received the Secretary of Health and Human Services' Award for Distinguished Service for "leadership, teamwork, and creative thinking in increasing availability, utility, and value of data for policy-makers and researchers concerned with hospital quality, utilization and cost."

Women accounted for about 60 percent of all adult hospital stays during 2000. This report provides an overview of hospital care for women and compares hospital stays for women and men. It also includes a special section on obstetric care in hospitals.

This report summarizes information from the Nationwide Inpatient Sample, or NIS, a database maintained by the Agency for Healthcare Research and Quality (AHRQ). The NIS is uniquely suited to providing a comprehensive picture of hospital care. Because of its tremendous size (about 7 million records), the NIS can provide information on relatively uncommon diagnoses and procedures, as well as on subpopulations, such as various age groups. The NIS covers all patients discharged from hospitals, including the uninsured, those covered by public payers (Medicare and Medicaid), and those with private insurance. It also provides information on total hospital charges for all patients, unlike any other data source in the United States.

Introduction



This report provides information on:

Hospital stays for men and women

- Ages of hospitalized patients page 5
- Sources of admission to the hospital page 6-7
- Most common reasons for hospitalization pages 8-13
- Most frequent procedures pages 14-19
- Common comorbidities, or coexisting conditions pages 20-23
- Ambulatory care sensitive conditions, or potentially avoidable hospitalizations pages 24-25
- Expected sources of payment for hospitalizations pages 26-29
- Average length of stay and total charges page 30-31
- Conditions with the highest in-hospital mortality page 32-33

Hospital stays for obstetric patients

- Age composition overall page 35
- Reasons for pregnancy-related hospital stays page 36-38
- Average length of stay and total charges by reason for hospitalization page 39
- Expected sources of payment by reason for hospitalization page 40
- Age composition and resource use by type of delivery pages 41-42
- Cesarean section rate by expected source of payment page 43
- Obstetric complications by type of delivery page 44
- Change in cesarean section rate and vaginal birth after cesarean section rate page 45



Executive Summary

PART 1. HOSPITAL STAYS FOR MEN AND WOMEN

- Excluding obstetric patients, the biggest difference in age composition between men and women is in the 80+ age group. About 1 in 4 nonobstetric hospital stays for women and 1 in 7 for men are in this group.
- Six out of the top 10 conditions for nonobstetric hospital stays are related to the circulatory system. These conditions make up 18 percent of all hospital stays for women and 23 percent of all stays for men.
- Gallbladder disease is among the top 10 conditions for nonobstetric female patients but not for males.
- Depression is the most common reason for nonobstetric hospital stays among women age 18 to 44.
- Alcohol/drug detoxification is a top 10 procedure for women age 18-44, while treatment for hip fractures and hip replacement are among the top 10 procedures for women age 80 and older.
- For two cardiac conditions – heart attack and hardening of the arteries of the heart – about 1 in 3 hospitalizations for women includes no procedure. But for men, only 1 in 4 receives no procedure for heart attack and only 1 in 5 receives no procedure for hardening of the arteries of the heart. Men are more likely than women to receive cardiac catheterization, percutaneous transluminal coronary angioplasty (PTCA), and coronary artery bypass graft (CABG).
- Hypertension is the most common comorbidity among nonobstetric patients admitted to hospitals. About 35 percent of women in the hospital and 31 percent of men have hypertension as a coexisting condition.
- Obesity is a top 10 comorbidity for both hospitalized men and women age 18 to 64.
- Three ambulatory care sensitive (ACS) conditions – diabetes with complications, asthma, and urinary tract infection – are among the top 10 common reasons for hospitalization among nonobstetric female patients who are uninsured or covered by Medicaid. These are conditions for which good outpatient care might prevent hospitalization.
- HIV disease is among the top 10 conditions with the highest in-hospital mortality for nonobstetric female patients age 18-44.

- For men and women age 45-79, half of the top 10 conditions with the highest in-hospital mortality are related to cancers.
- The average length of hospital stay increases by age regardless of sex. Nevertheless, for each age cohort, male patients have higher total hospital charges than nonobstetric female patients.

PART 2. HOSPITAL STAYS FOR OBSTETRIC PATIENTS

- Pregnancy and childbirth account for almost 1 out of 4 hospital stays for women.
- Delivery of a child accounts for 88 percent of obstetric hospital stays.
- Women with Medicaid coverage or who are uninsured account for about 4 out of 10 obstetric hospital stays.
- Women hospitalized for antepartum or postpartum care are more likely to be uninsured or covered by Medicaid than women admitted for delivery.
- Women admitted to hospitals due to pregnancy loss are more than twice as likely to be uninsured than any other type of obstetric patients.
- About 1 in 3 women with a primary cesarean section is age 18 to 24 and only 1 in 6 is age 35 or older.
- Women with private insurance are more likely to have cesarean sections than women uninsured or covered by Medicaid.
- About 1 in 12 women who have vaginal delivery without instrumentation experiences perineal or cervical laceration or other obstetric trauma. This compares with nearly 1 in 4 women who have vaginal delivery that includes use of instruments, such as forceps or vacuum extraction.
- The cesarean section rate increased slightly from 21.3 percent in 1997 to 23.2 percent in 2000. In contrast, the rate for vaginal birth after cesarean section (VBAC) decreased from 35.3 percent to 28.6 percent over the same time period.

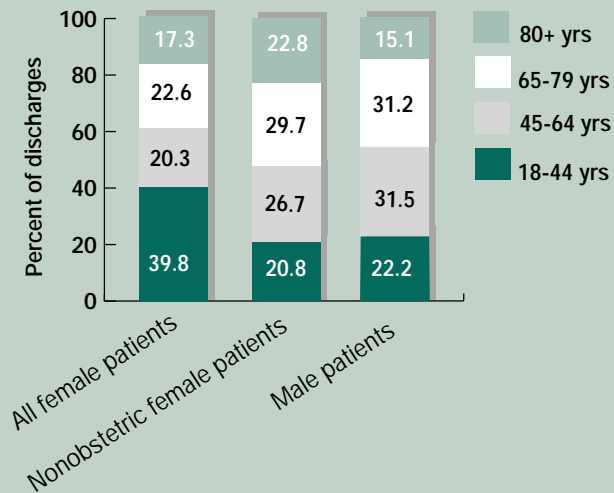


PART 1
Hospital Stays
for Men and Women


- Two out of 5 hospital stays for all female patients are for women in the 18-44 age group. Close to 60 percent of these stays are due to pregnancy and childbirth (data not shown).
- Excluding obstetric patients, 53 percent of hospitalizations for women are for patients age 65 or older. This compares to 46 percent of men. The biggest difference is in the 80+ age group – 23 percent of nonobstetric hospital stays for women is in this oldest age category compared with 15 percent for men.

How does age composition differ for men and women?

AGE COMPOSITION BY SEX



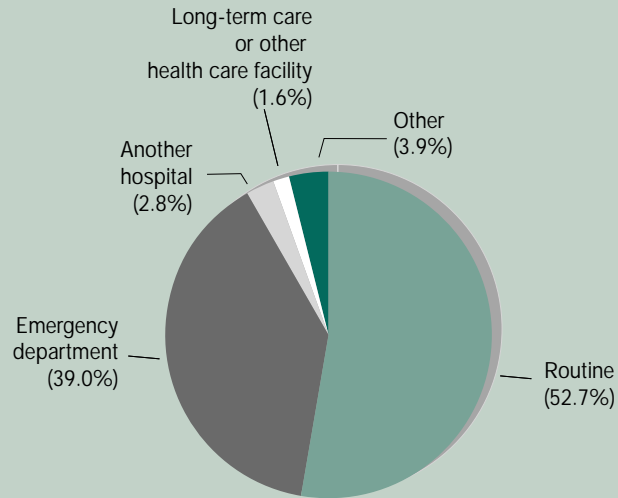
- Half of hospital stays for all female patients are admitted routinely while about 2 in 5 originate in the emergency department (ED).



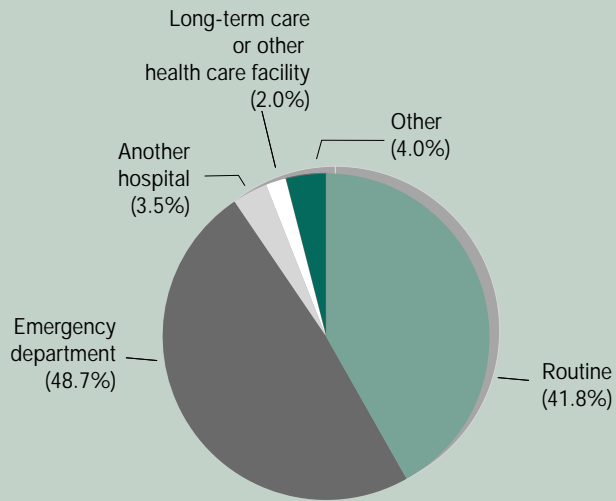
How do men and women differ in source of admission to the hospital?

- Excluding obstetric patients, the proportion of hospital stays admitted through the ED is slightly lower among women (49 percent) than among men (51 percent).
- Transfers from other health care institutions account for only around 6 percent of all nonobstetric hospital stays.

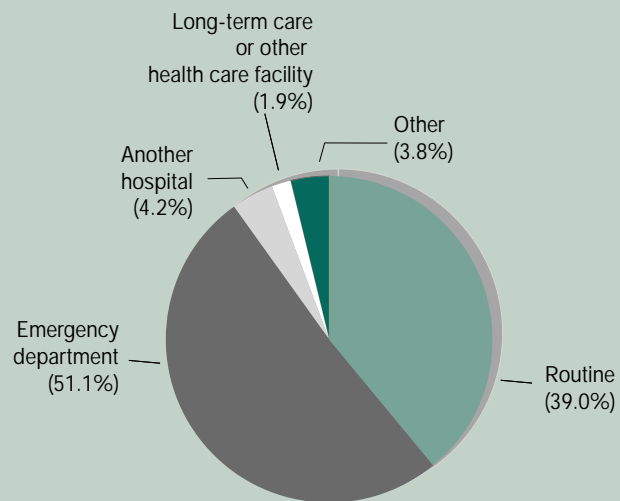
ALL FEMALE PATIENTS




NONOBSTETRIC FEMALE PATIENTS



MALE PATIENTS



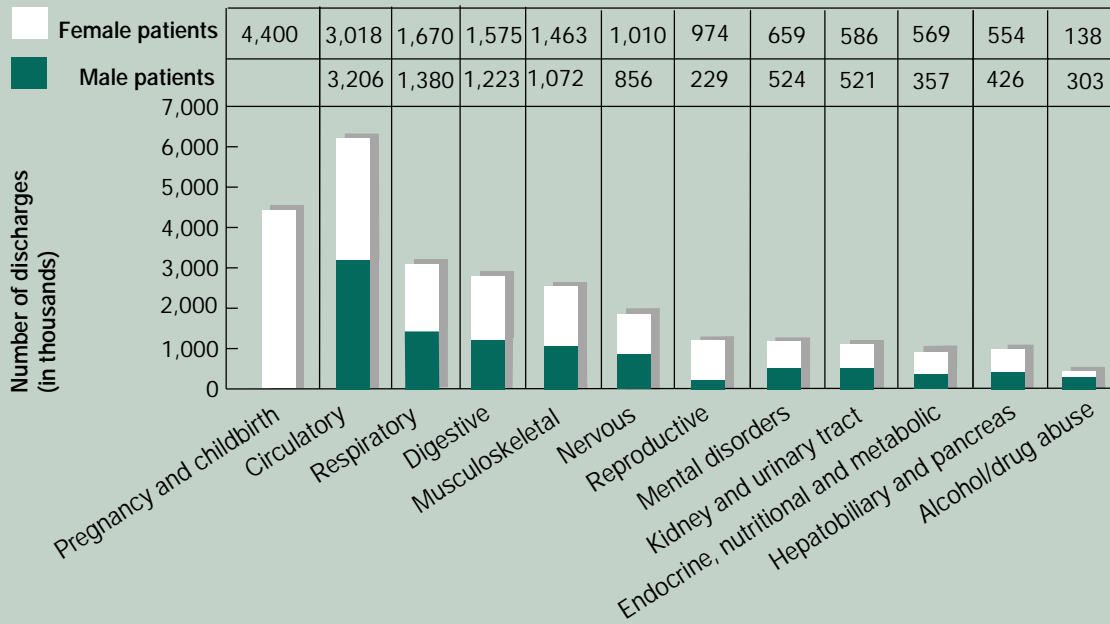


What are the most common reasons for hospitalization, by body system?

- The most common reason for hospitalization among women is pregnancy and childbirth. About 4.4 million hospital stays are due to obstetric conditions.
- Among nonobstetric patients, diseases of the circulatory system are the most common reason for hospitalization for both men and women, followed by diseases of the respiratory, digestive, and musculoskeletal systems.

- The number of hospitalizations for endocrine, nutritional and metabolic diseases is almost 60 percent higher for females than for males (569,000 vs. 357,000).
- The number of hospital stays associated with drug/alcohol abuse for males (303,000) is more than double that for females (138,000).
- Mental disorders are among the most common reasons for hospitalization for both men and women.

MOST COMMON REASONS FOR HOSPITAL STAYS, BY BODY SYSTEM



- The most common diagnosis for hospitalization among all women is trauma to perineum due to childbirth. (Women with this diagnosis were hospitalized for childbirth and, as a result of delivery, were treated for perineal trauma.)
- Pneumonia, congestive heart failure, and hardening of the arteries of the heart are the top three conditions among nonobstetric female and male patients.



How do the most common reasons for hospitalization of women differ from those for men?

- Six out of the top 10 conditions for nonobstetric female and male patients are related to the circulatory system. These conditions make up 18 percent of all hospital stays for nonobstetric female patients and 23 percent of all stays for males.
- The number of hospitalizations for two cardiac conditions – hardening of the arteries of the heart and heart attack – are over 40 percent higher for males than for nonobstetric female patients.
- Depression ranks as the fifth and gall bladder disease as the tenth most frequent condition for nonobstetric female patients. Neither condition is in the top 10 for males.
- Back pain is among the top 10 reasons for hospitalization of men but not of women.
- Nonobstetric female patients have 27 percent more discharges for chronic obstructive lung disease than men (344,000 vs. 270,000).

TOP 10 PRINCIPAL DIAGNOSES, BY SEX

Principal diagnosis	Female patients		Nonobstetric female patients		Male patients	
	Total number of discharges (thousands)	Percent of all female discharges	Total number of discharges (thousands)	Percent of nonobstetric female discharges	Total number of discharges (thousands)	Percent of all male discharges
Trauma to perineum due to childbirth	785	4.3				
Pneumonia	581	3.1	581	4.1	514	4.4
Congestive heart failure	564	3.1	564	4.0	460	4.0
Coronary atherosclerosis (hardening of the arteries of the heart)	546	3.0	546	3.9	814	7.0
Normal pregnancy and delivery	475	2.6				
Chest pain	435	2.4	435	3.1	358	3.1
Affective disorders (depression)	361	2.0	359	2.6		
Chronic obstructive lung disease	344	1.9	344	2.5	270	2.3
Cardiac dysrhythmia (irregular heartbeat)	336	1.8	336	2.4	311	2.7
Acute cerebrovascular disease (stroke)	324	1.8	324	2.3	255	2.2
Acute myocardial infarction (heart attack)			314	2.2	454	3.9
Biliary tract (gallbladder) disease			311	2.2		
Spondylosis, intervertebral disc disorders, other back problems					290	2.5
Complication of device, implant or graft					257	2.2

Signifies circulatory system-related diagnoses

- Pneumonia is the only condition that ranks in the top 10 for all age groups of nonobstetric female patients. It is the second most common reason for hospital stays among women 80 years and older.



What are the most common reasons for hospitalization of nonobstetric female patients, by age group?

- Depression is the most common reason for nonobstetric hospital stays among women age 18 to 44. Three of the top 10 conditions for this age group pertain to gynecologic diseases and disorders.
- Hardening of the arteries of the heart and congestive heart failure are among the top 10 conditions for all age groups 45 and older.
- Hip fracture is the third most common reason for hospitalization among women age 80 or older.
- Five of the top 10 conditions for hospitalized women 65 years and older are related to the circulatory system — hardening of the arteries of the heart, congestive heart failure, irregular heartbeat, heart attack, and stroke.

TOP 10 PRINCIPAL DIAGNOSES FOR NONOBSTETRIC FEMALE PATIENTS, BY AGE GROUP

Principal diagnosis	18-44 years	45-64 years	65-79 years	80+ years
Number of discharges in thousands (percent of discharges in each age group)				
Affective disorders (depression)	205 (7.0)	98 (2.6)		
Benign neoplasm of uterus	139 (4.8)	111 (3.0)		
Biliary tract disorders (gallbladder disease)	117 (4.0)	90 (2.4)		
Spondylosis, intervertebral disc disorders, other back problems	85 (2.9)	107 (2.9)		
Asthma	70 (2.4)			
Menstrual disorders	69 (2.4)			
Endometriosis	66 (2.3)			
Schizophrenia and other related disorders	65 (2.2)			
Chest pain	63 (2.2)	193 (5.2)	126 (3.0)	
Pneumonia	60 (2.1)	117 (3.1)	185 (4.5)	218 (6.8)
Coronary atherosclerosis (hardening of the arteries of the heart)		178 (4.8)	244 (5.9)	103 (3.2)
Chronic obstructive lung disease		100 (2.7)	156 (3.7)	
Congestive heart failure		94 (2.5)	213 (5.1)	242 (7.6)
Complication of device, implant or graft		79 (2.1)		
Osteoarthritis			145 (3.5)	
Cardiac dysrhythmia (irregular heartbeat)			143 (3.4)	115 (3.6)
Acute myocardial infarction (heart attack)			124 (3.0)	109 (3.4)
Acute cerebrovascular disease (stroke)			121 (2.9)	131 (4.1)
Rehabilitation			119 (2.9)	93 (2.9)
Hip fracture				149 (4.7)
Fluid and electrolyte disorders				107 (3.3)
Urinary tract infection				103 (3.2)

- Among the top 10 procedures for women admitted to the hospital for nonobstetric reasons, two pertain to the reproductive system – hysterectomy and oophorectomy (removal of ovaries) – while three pertain to the digestive system – upper gastrointestinal endoscopy, colonoscopy, and cholecystectomy.
- For procedures related to the cardiovascular system, two procedures – both are diagnostic – appear in the top 10 for nonobstetric female patients while five procedures – three are therapeutic and two are diagnostic – emerge in the top 10 for male patients.



What are the most common in-hospital procedures received by nonobstetric female patients?

- Laminectomy/excision of intervertebral disk (surgery for back problems) is among the top 10 procedures for males but not for nonobstetric female patients.
- Close to 6 percent of stays for both men and women patients include blood transfusions.

TOP 10 PROCEDURES FOR MALE AND NONOBSTETRIC FEMALE PATIENTS

All-listed procedures ^a	Nonobstetric female patients	Male patients
	Total number of discharges with this procedure category, in thousands (percent of discharges)	
No procedure	6,070 (43.3)	4,611 (39.8)
Diagnostic cardiac catheterization, coronary arteriography	1,687 (12.0)	2,534 (21.8)
Blood transfusion ^b	828 (5.9)	668 (5.8)
Upper gastrointestinal endoscopy and biopsy	657 (4.7)	592 (5.1)
Respiratory intubation and mechanical ventilation	630 (4.5)	680 (5.9)
Hysterectomy	613 (4.4)	
Oophorectomy (removal of ovaries)	485 (3.5)	
Colonoscopy and biopsy	352 (2.5)	
Cholecystectomy and common duct exploration	318 (2.3)	
Hemodialysis	299 (2.1)	293 (2.5)
Diagnostic ultrasound of heart (echocardiogram)	286 (2.0)	281 (2.4)
Coronary artery bypass graft (CABG)		499 (4.3)
Percutaneous transluminal coronary angioplasty (PTCA)		452 (3.9)
Laminectomy, excision of intervertebral disc		297 (2.6)
Extracorporeal circulation auxiliary to open heart procedures		274 (2.4)

^a The term “All-listed procedures” refers to all procedures performed during a hospital stay.

^b The data likely represent an underestimate of the actual number of transfusions.

- Two gynecologic procedures – hysterectomy and oophorectomy – are among the top 10 for nonobstetric female patients under 65 years of age.
- Alcohol/drug detoxification is a top 10 procedure for women 18 to 44 years of age.

What are the most common in-hospital procedures for nonobstetric female patients, by age group?


- Diagnostic cardiac catheterization, blood transfusion, upper gastrointestinal endoscopy, and respiratory intubation/mechanical ventilation are in the top 10 for all age groups.
- Diagnostic cardiac catheterization is performed during 1 in 6 hospital stays for women 45-79 years old but is much less common in other age groups.
- Two cardiac diagnostic procedures – cardiac catheterization and echocardiogram – are among the top 10 procedures for all women age 65 and older. CABG and PTCA only appear in the top 10 for women 65-79 while cardiac pacemaker procedures rank in the top 10 only for women age 80 or older.
- Treatment for hip fractures, physical therapy, and hip replacement are among the top 10 procedures for women age 80 and older.

TOP 10 PROCEDURES FOR NONOBSTETRIC FEMALE PATIENTS, BY AGE GROUP

All-listed procedures*	18-44 years	45-64 years	65-79 years	80+ years
Total number of discharges with this procedure category, in thousands (percent of all discharges in this age group)				
Hysterectomy	304 (10.4)	246 (6.6)		
Oophorectomy	195 (6.7)	227 (6.1)		
Cholecystectomy	119 (4.1)	94 (2.5)		
Excision, lysis peritoneal adhesions	104 (3.6)			
Diagnostic cardiac catheterization, coronary arteriography	93 (3.2)	603 (16.2)	763 (18.3)	229 (7.2)
Blood transfusion	90 (3.1)	183 (4.9)	296 (7.1)	259 (8.1)
Upper gastrointestinal endoscopy, biopsy	86 (3.0)	157 (4.2)	232 (5.6)	181 (5.7)
Appendectomy	85 (2.9)			
Alcohol and drug rehabilitation/detoxification	78 (2.7)			
Respiratory intubation and mechanical ventilation	74 (2.5)	165 (4.4)	239 (5.7)	153 (4.8)
Hemodialysis		103 (2.8)	118 (2.8)	
Laminectomy		100 (2.7)		
Percutaneous transluminal coronary angioplasty (PTCA)		80 (2.1)	112 (2.7)	
Colonoscopy and biopsy			126 (3.0)	106 (3.3)
Arthroplasty knee			112 (2.7)	
Diagnostic ultrasound of heart (echocardiogram)			109 (2.6)	77 (2.4)
Coronary artery bypass graft (CABG)			108 (2.6)	
Treatment, fracture or dislocation of hip and femur				110 (3.4)
Insertion, revision, replacement, removal of cardiac pacemaker or cardioverter/defibrillator				97 (3.0)
Physical therapy exercises, manipulation, other procedures				80 (2.5)
Hip replacement, total and partial				74 (2.3)

* The term "All-listed procedures" refers to all procedures performed during a hospital stay; patients often receive more than one procedure.

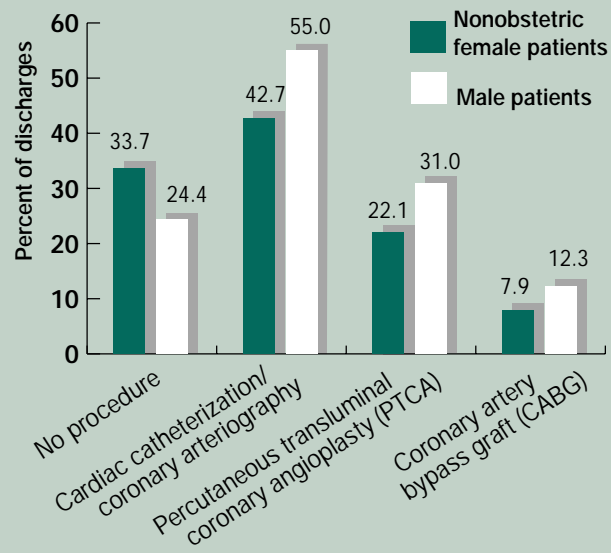
- Heart attack and hardening of the arteries of the heart are among the top 10 diagnoses for both male and nonobstetric female patients.
- Among nonobstetric female patients, about 1 in 3 hospitalizations for these two conditions includes no procedure. But for male patients, only 1 in 4 receives no procedure for heart attack and only 1 in 5 receives no procedure for hardening of the arteries of the heart.



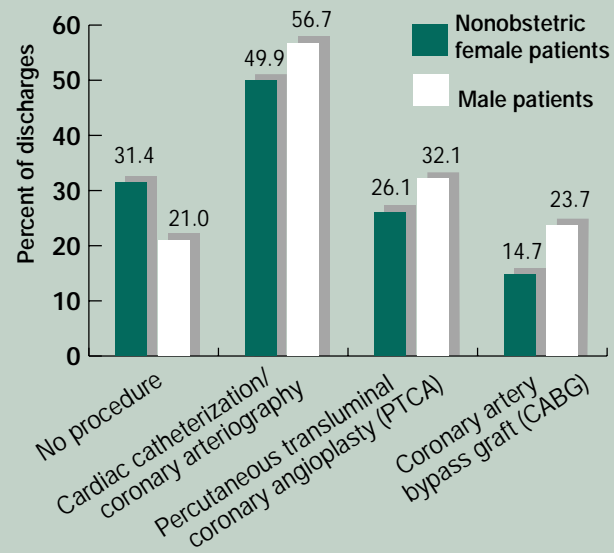
How does procedure use differ for men and women hospitalized for two common cardiac conditions?

- For these two cardiac conditions, men are more likely to receive cardiac catheterization, PTCA, and CABG than women. The proportion of hospital stays during which CABG is performed is over 50 percent higher for men than for women. (For heart attack, about 12 percent of stays for men vs. 8 percent for women involve CABG; for hardening of the arteries of the heart, nearly 24 percent of stays for men vs. 15 percent for women include this procedure.)

PROCEDURES FOR ACUTE MYOCARDIAL INFARCTION (HEART ATTACK)



PROCEDURES FOR CORONARY ATHEROSCLEROSIS (HARDENING OF THE ARTERIES OF THE HEART)



- Hypertension is the most common comorbidity among nonobstetric patients admitted to hospitals. About 35 percent of women in the hospital and 31 percent of men have a coexisting condition of hypertension.
- Other common comorbidities are diabetes (18 percent for both men and women), fluid and electrolyte disorders (slightly higher for women, 15 vs. 13 percent), and chronic lung disease (15 percent for women and 16 percent for men).



How do the common comorbidities for nonobstetric female patients compare with those for men?

- Hypothyroidism and depression are among the top 10 comorbidities for nonobstetric female patients while alcohol abuse and peripheral vascular disease are among the top 10 comorbidities for male patients.

TOP 10 COMORBIDITIES, BY SEX

Comorbidity*	Nonobstetric female patients	Male patients
Total number of discharges with each comorbidity, in thousands (percent of all discharges)		
Hypertension	4,941 (35.3)	3,614 (31.2)
Diabetes	2,522 (18.0)	2,106 (18.2)
Fluid and electrolyte disorders	2,101 (15.0)	1,445 (12.5)
Chronic lung disease	2,051 (14.6)	1,826 (15.7)
Deficiency anemias	1,385 (9.9)	918 (7.9)
Hypothyroidism	1,350 (9.6)	
Cardiac arrhythmias (irregular heartbeat)	1,260 (9.0)	1,069 (9.2)
Congestive heart failure	1,151 (8.2)	820 (7.1)
Solid tumor without metastasis	845 (6.0)	779 (6.7)
Depression	839 (6.0)	
Alcohol abuse		630 (5.4)
Peripheral vascular disease (hardening of the arteries)		550 (4.7)

* Comorbidities can make a hospital stay more expensive and complicated. They are coexisting medical conditions that are not directly related to the principal diagnosis, or the main reason for admission, and are likely to have originated prior to the hospital stay. SOURCE: Elixhauser A, Steiner C, Harris DR, Coffey RM. Comorbidity measures for use with administrative data. *Medical Care* 1998, 36(1):8-27.

- Hypertension, fluid and electrolyte disorders, chronic lung disease, diabetes, and deficiency anemias are among the top 10 comorbidities in every age group.



How do comorbidities differ across age groups?

- Obesity is a top 10 comorbidity for both male and nonobstetric female patients age 18 to 64.
- Alcohol and drug abuse and psychoses are present in the top 10 only for the group of 18 to 44 years of age.
- For those age 65 and older, peripheral vascular disease and renal failure are among the top 10 comorbidities for males; hypothyroidism is among the top 10 for females.

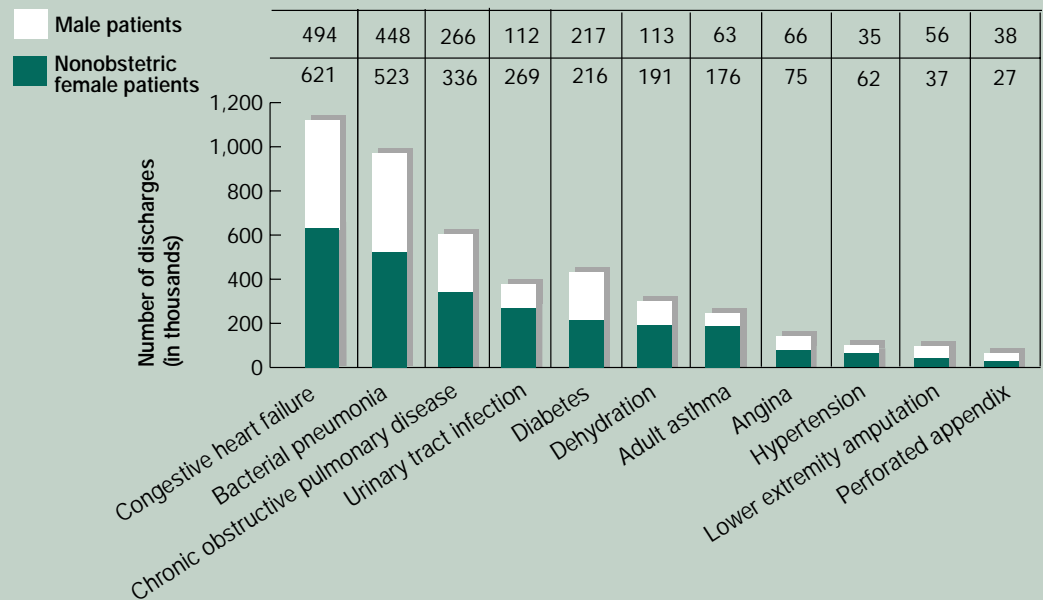
TOP 10 COMORBIDITIES, BY AGE GROUP AND SEX

Comorbidity	18-44 years		45-64 years		65-79 years		80+ years	
	Non-obstetric female patients	Male patients	Non-obstetric female patients	Male patients	Non-obstetric female patients	Male patients	Non-obstetric female patients	Male patients
Total number of discharges (in thousands)	2,913	2,577	3,733	3,648	4,167	3,624	3,195	1,749
Percent of discharges in each age/sex group								
Hypertension	9.3	11.2	32.8	33.5	46.7	40.7	46.9	35.9
Fluid and electrolyte disorders	8.7	8.5	11.5	10.6	16.3	13.6	23.1	19.9
Cardiac arrhythmias (irregular heartbeat)				4.4	11.1	13.1	19.3	22.3
Congestive heart failure					10.0	9.7	17.5	17.0
Chronic lung disease	7.7	5.3	13.8	12.9	19.2	22.5	16.0	23.0
Diabetes without complications	5.0	4.9	16.3	16.2	21.0	20.6	15.0	15.7
Deficiency anemias	6.2	4.1	7.9	6.5	10.8	9.2	14.3	13.6
Hypothyroidism			8.2		12.2		13.6	
Solid tumor without metastasis			5.2		8.2	10.5	8.2	13.4
Valvular disease							5.7	
Peripheral vascular disease (hardening of the arteries)						7.6		7.6
Renal failure			4.1	4.6		5.5		6.2
Affective disorders (depression)	6.0	3.9	6.8		5.5			
Obesity	5.4	3.4	7.6	4.8				
Drug abuse	5.2	8.7						
Alcohol abuse	3.8	9.6		7.4				
Psychoses	3.6	3.5						
Diabetes with chronic complications				4.0				

How do women and men differ in potentially avoidable hospitalizations?

- Ambulatory care sensitive (ACS) conditions are hospital stays that can potentially be avoided through good outpatient care.
- Congestive heart failure, bacterial pneumonia, and chronic obstructive pulmonary disease are the top three ACS conditions for both nonobstetric female and male patients.
- Over twice as many hospital stays for urinary tract infection occur for women as for men – 269,000 vs. 112,000. Women are nearly three times as likely to be hospitalized for asthma – 176,000 stays for women vs. 63,000 for men.
- The number of hospital stays for diabetes-related lower extremity amputation is 50 percent higher for men than for women – 56,000 vs. 37,000.

HOSPITALIZATION FOR AMBULATORY CARE SENSITIVE CONDITIONS, BY SEX

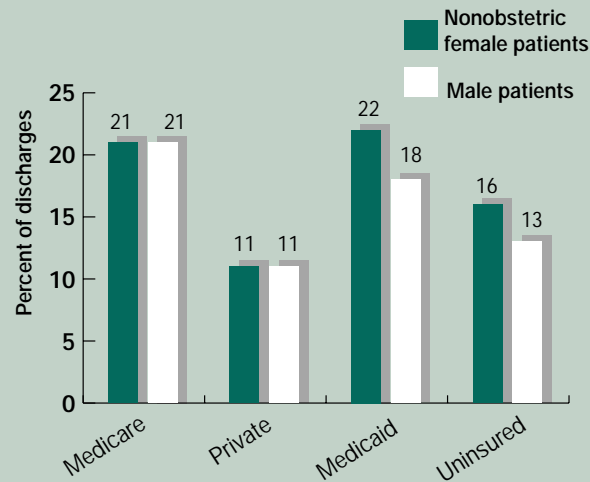


- Among nonobstetric patients, about 18 percent of women’s stays and 16 percent of men’s stays are for ACS conditions (data not shown).
- Patients with private insurance have the lowest percentage of hospital stays attributed to ACS conditions.
- Among those who are covered by Medicaid or who are uninsured, the percentage of hospital stays for ACS conditions is higher for nonobstetric female patients than that for male patients.

How do potentially avoidable hospitalizations vary by payer?



TOTAL HOSPITALIZATIONS ATTRIBUTED TO AMBULATORY CARE SENSITIVE CONDITIONS, BY PAYER AND SEX



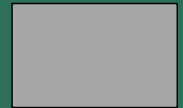
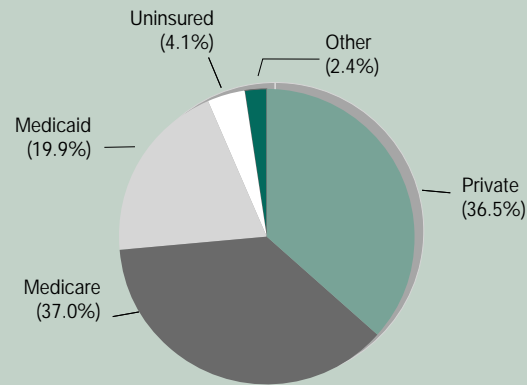
- Private insurance is billed for slightly over one-third of hospital stays for all female patients.
- Almost two-thirds of nonobstetric stays for women is billed to public programs – Medicare and Medicaid.
- Excluding obstetric patients, Medicare is billed for 48.6 percent of all hospitalizations for women and 46.3 percent of those for men.



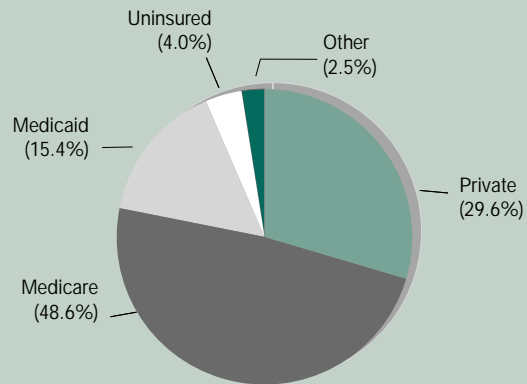
How do sources of payment differ for men and women?

- Nearly 1 in 5 hospitalizations for nonobstetric female patients and male patients is covered by Medicaid or uninsured. Among nonelderly adults who have no private insurance, women are more likely to be covered by Medicaid, while men are more likely to be uninsured.

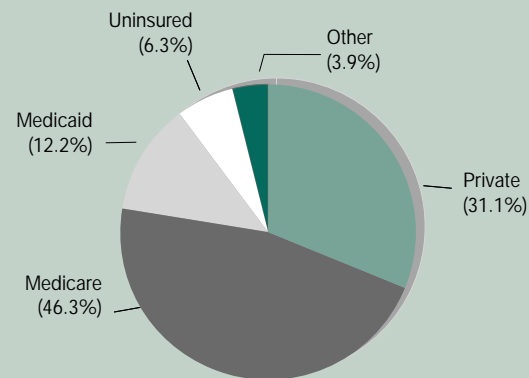
ALL FEMALE PATIENTS



NONOBSTETRIC FEMALE PATIENTS



MALE PATIENTS



- Regardless of who is billed for the hospital stay, pneumonia and hardening of the arteries of the heart are among the top 10 conditions for nonobstetric female patients.



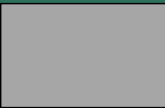
What are the most common reasons for hospitalization of nonobstetric female patients, by payer?

- Five of the top 10 conditions billed to Medicare are related to the circulatory system.
- Three ACS conditions – diabetes with complications, asthma, and urinary tract infection – are among the top 10 conditions for Medicaid patients and the uninsured.
- Chest pain and depression are among the top 10 conditions for non-Medicare patients only .

COMMON PRINCIPAL DIAGNOSES FOR NONOBSTETRIC FEMALE PATIENTS BY PAYER

Principal diagnosis	Medicare	Private	Medicaid	Uninsured
	Number of discharges in thousands (percent of all discharges)			
Congestive heart failure	394 (5.8)		95 (4.4)	10 (1.9)
Pneumonia	353 (5.2)	99 (2.4)	103 (4.8)	17 (3.0)
Coronary atherosclerosis (hardening of the arteries of the heart)	315 (4.6)	137 (3.3)	69 (3.2)	16 (2.9)
Cardiac dysrhythmia (irregular heartbeat)	228 (3.3)			
Acute cerebrovascular disease (stroke)	219 (3.2)			
Chronic obstructive lung disease	210 (3.1)		67 (3.1)	
Acute myocardial infarction (heart attack)	204 (3.0)			
Rehabilitation	196 (2.9)			
Hip fracture	186 (2.7)			
Osteoarthritis	173 (2.5)	75 (1.8)		
Benign neoplasm of uterus		212 (5.1)		
Chest pain		165 (4.0)	65 (3.0)	24 (4.4)
Spondylosis, intervertebral disc disorders, other back problems		138 (3.3)		
Biliary tract disorders (gallbladder disease)		137 (3.3)		21 (3.7)
Affective disorders (depression)		128 (3.1)	101 (4.7)	26 (4.7)
Prolapse of female genital organs		79 (1.9)		
Complication of procedures or medical care		78 (1.9)		
Schizophrenia and other related disorders			60 (2.8)	
Diabetes mellitus with complications			57 (2.6)	13 (2.4)
Urinary tract infection			53 (2.5)	13 (2.4)
Asthma			48 (2.2)	13 (2.4)
Skin and subcutaneous tissue infections				10 (1.8)

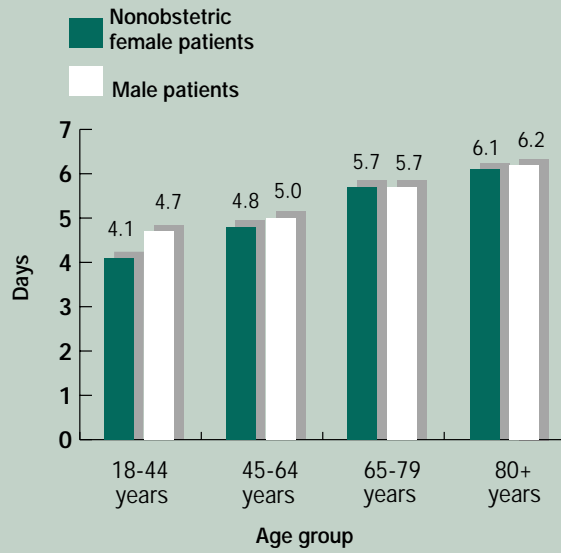
- The average length of hospital stay increases with age. On average, patients age 65 or older spend 6 days in the hospital compared with fewer than 5 days for those age 18 to 64.



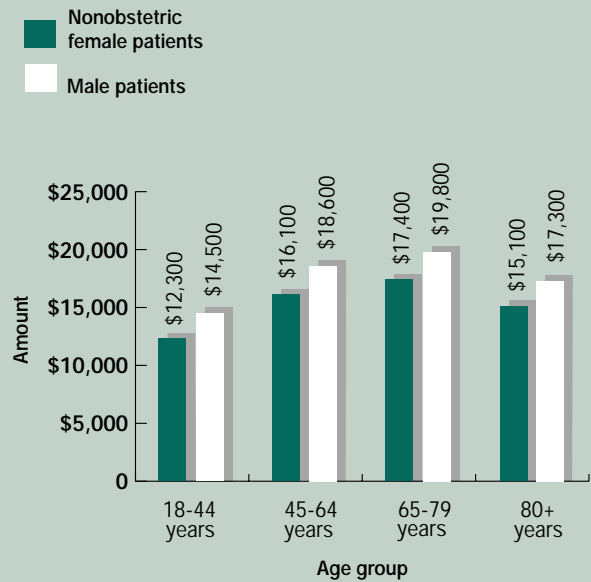
How do length of stay and total charges differ for male and nonobstetric female patients, by age group?

- Although average length of hospital stay is highest among patients age 80+, the highest average hospital charges are in the 65-79 age group. This may be an indication of higher intensity of service in the younger age group.
- For each age group, male patients have higher total hospital charges than nonobstetric female patients.

AVERAGE LENGTH OF STAY



AVERAGE TOTAL HOSPITAL CHARGES



- HIV disease is among the top 10 conditions with the highest in-hospital mortality for nonobstetric female patients age 18-44.
- Among patients age 45 and older, women have a higher in-hospital mortality rate than men for cardiac arrest and ventricular fibrillation; men have a higher in-hospital mortality rate than women for respiratory failure.



What conditions have the highest in-hospital mortality, by age group?

- For men and women age 45-79, half of the top 10 conditions with the highest in-hospital mortality are related to cancers.
- Stroke is among the top 10 conditions with the highest in-hospital mortality for both male and nonobstetric female patients in the youngest age group (18-44).

TOP 10 CONDITIONS WITH THE HIGHEST IN-HOSPITAL MORTALITY

Principal diagnosis	18-44 years		45-64 years		65-79 years		80+ years	
	Non-obstetric females	Males	Non-obstetric females	Males	Non-obstetric females	Males	Non-obstetric females	Males
	In-hospital mortality (percent)							
Cardiac arrest and ventricular fibrillation			60.0	42.6	62.9	48.7	71.3	69.8
Shock							65.5	
Respiratory failure, insufficiency, arrest	11.4	14.9	14.7	16.9	21.7	25.3	34.6	37.3
Peritonitis and intestinal abscess							28.4	
Aortic, peripheral, and visceral artery aneurysms							25.6	
Leukemias	13.4	12.5	17.6	17.8	23.9	25.8	25.2	25.4
Septicemia (except in labor)		8.4	13.1	13.8	17.4	17.5	22.7	23.1
Aspiration pneumonitis, food/vomitus	7.4		14.8		18.8	19.6	22.0	23.3
Cancer of liver and intrahepatic bile duct			17.3	22.6	17.2	20.0	19.1	
Cancer of bronchus, lung	13.6	15.6	14.6	15.7	14.8	17.5	17.8	21.0
Cancer of pancreas			14.0	16.7	15.8	17.0		23.8
Non-Hodgkins lymphoma	9.0	8.7						20.5
Intracranial injury		9.0						19.2
Chronic renal failure								18.9
Malignant neoplasm without specification of site			21.6	21.8	27.8	29.0		
Coma, stupor, and brain damage	9.3	12.8	15.8	18.3	14.9	20.1		
Cancer of esophagus				13.0				
Acute cerebrovascular disease (stroke)	10.6	11.4						
Secondary malignancies	9.9	9.4						
Liver disease, alcohol-related	7.3	8.0						
HIV infection	7.1							

* Note: Because mortality rates may fluctuate over years for those conditions with a relatively small number of discharges, for each sex-age cohort only conditions with more than 1,000 weighted discharges were included in the analysis.

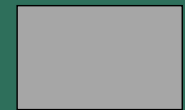


PART 2

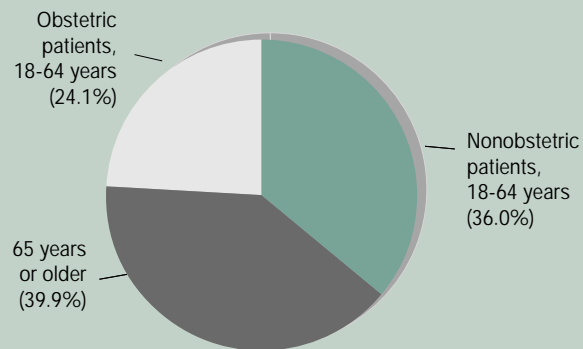
Hospital Stays for Obstetric Patients

- Obstetric patients account for about 1 in 4 hospital stays for women overall.
- Over half of adult obstetric hospitalizations occur in the 25-34 age group.
- Nearly 1 in 7 obstetric hospital stays is for women age 35 years or older.

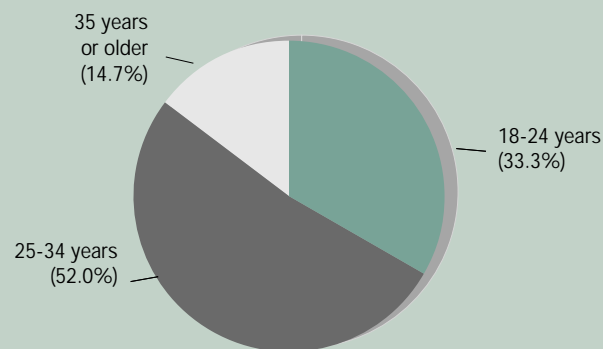
What is the age composition of obstetric patients?



ALL STAYS FOR WOMEN

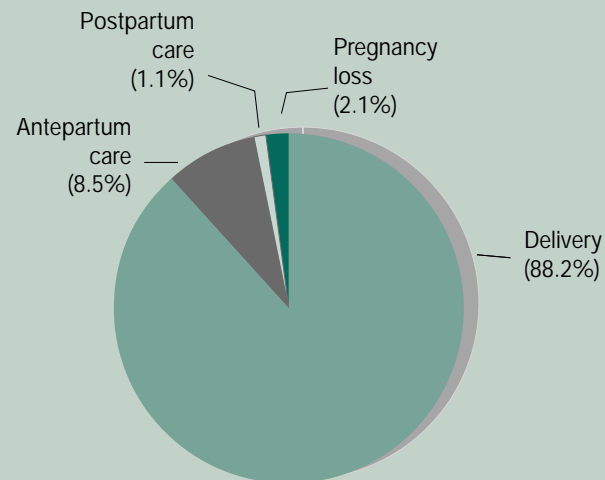


STAYS FOR OBSTETRIC PATIENTS



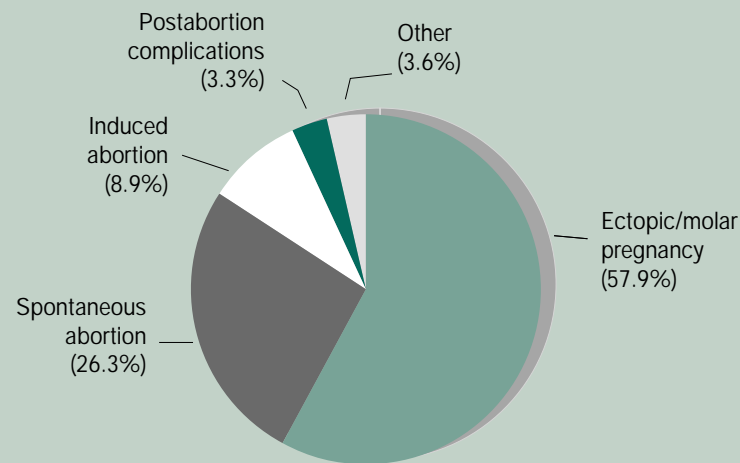
- Most obstetric hospital stays (88 percent) are for delivery of a child.
- Nearly 1 in 10 obstetric hospitalizations is for antepartum or postpartum care.
- Only 1 in 50 obstetric hospitalizations is due to pregnancy loss.

What are the most common reasons associated with obstetric hospital stays?



- Over half of hospitalizations involving pregnancy loss are due to ectopic/molar pregnancy.
- Spontaneous abortion accounts for more than one-fourth of all hospital stays related to pregnancy loss while induced abortion is associated with about 1 in 10 such hospital stays.

What are the most common reasons for hospital stays related to pregnancy loss?

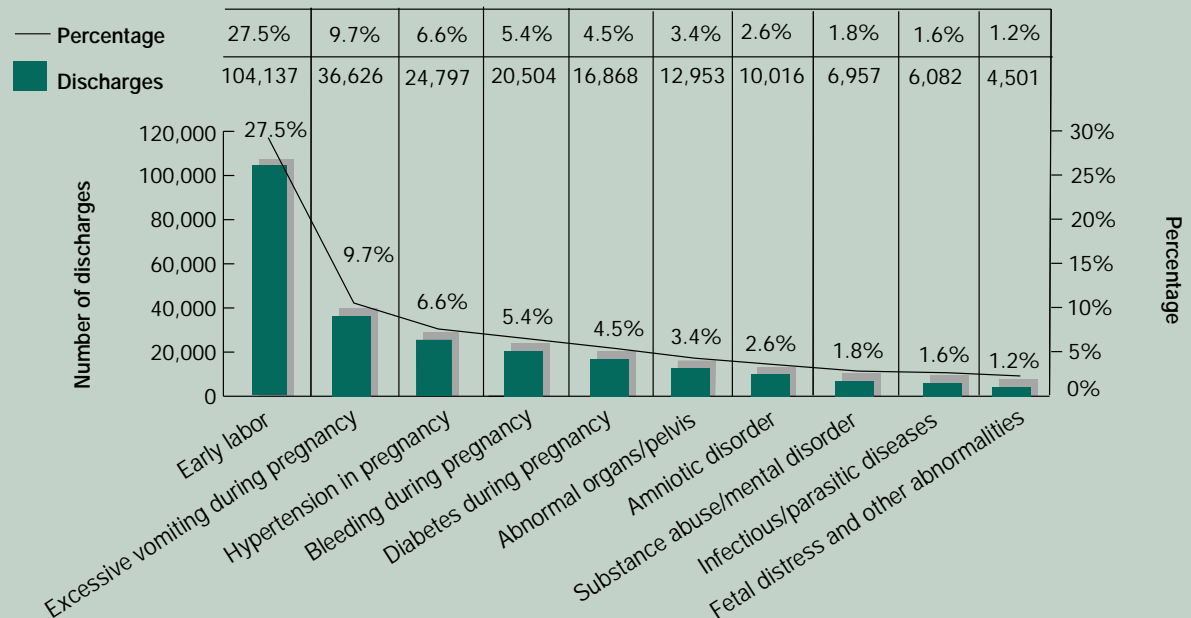


NOTE: Pregnancy loss can occur in outpatient settings without hospitalization. The data presented here are limited to only those patients treated in hospitals.

- Antepartum hospital stays involve care for pregnant women who do not deliver their babies during that stay. Early labor accounts for more than 1 in 4 of these antepartum stays.
- Excessive vomiting during pregnancy is the second most common reason for antepartum hospitalizations, accounting for 1 in 10 antepartum stays.
- One in 6 hospital stays for antepartum care is due to hypertension, bleeding, and diabetes during pregnancy.

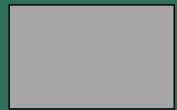
What are the most common conditions associated with hospitalizations for antepartum care?

TOP TEN REASONS FOR ANTEPARTUM HOSPITAL STAYS

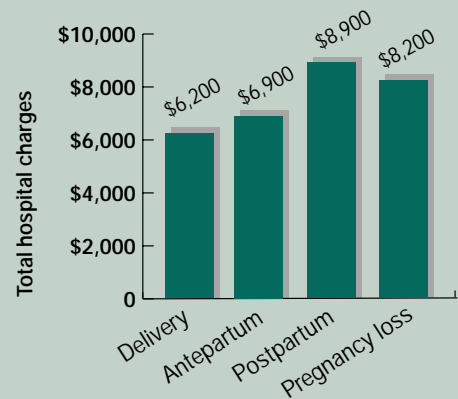
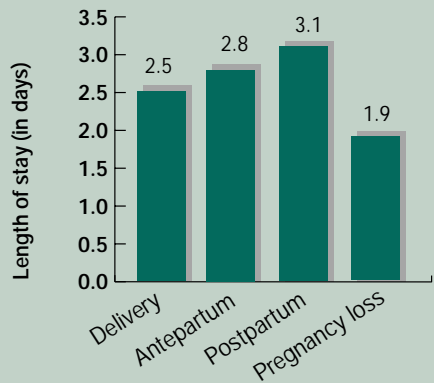


- Obstetric patients admitted for antepartum or postpartum care have longer lengths of stay than those admitted for delivery.
- Hospitalizations for postpartum care incur the highest average total charges – \$8,900.
- Women hospitalized due to pregnancy loss have shorter lengths of stay but much higher total charges than women admitted for delivery or antepartum care.

What are average length of stay and total charges for obstetric hospitalizations?

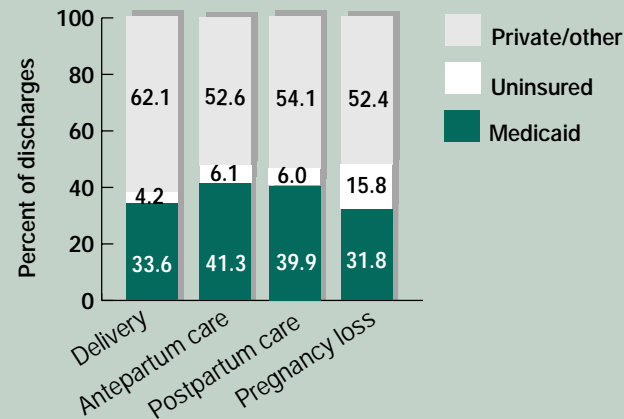


LENGTH OF STAY AND CHARGES, BY REASON FOR HOSPITAL STAY



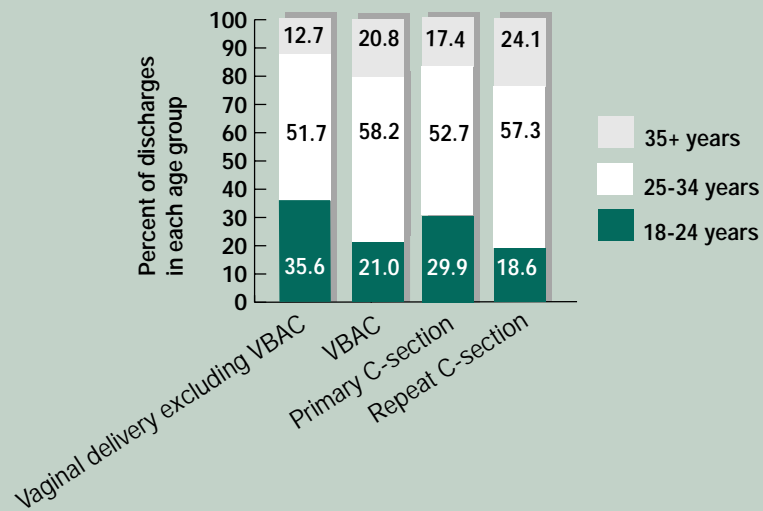
- Women with Medicaid coverage or who are uninsured account for about 2 in 5 obstetric hospital stays.
- Women hospitalized for antepartum or postpartum care are more likely to be uninsured or covered by Medicaid than women admitted for delivery.
- Women admitted to hospitals due to pregnancy loss are more than twice as likely to be uninsured than any other type of obstetric patients.

Who is billed for hospital stays for obstetric care?



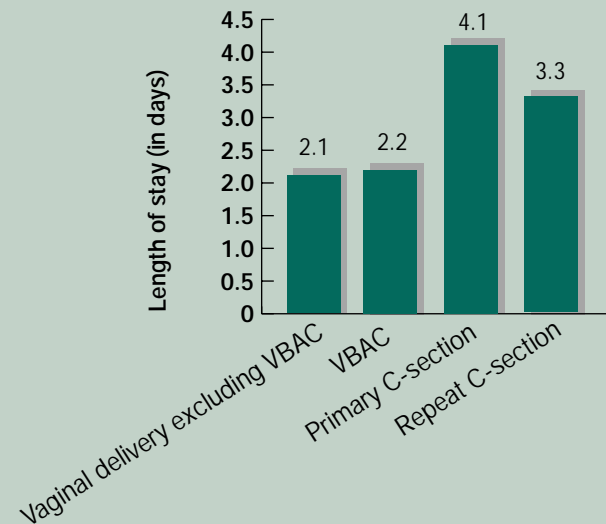
- About 1 in 3 women with a primary cesarean section is age 18 to 24 and only 1 in 6 is age 35 or older.
- Among women with prior cesarean sections, those having repeat cesarean sections are more likely to be age 35 or older than those having vaginal delivery (about 1 in 4 vs. 1 in 5).

How old are obstetric patients, by type of delivery?



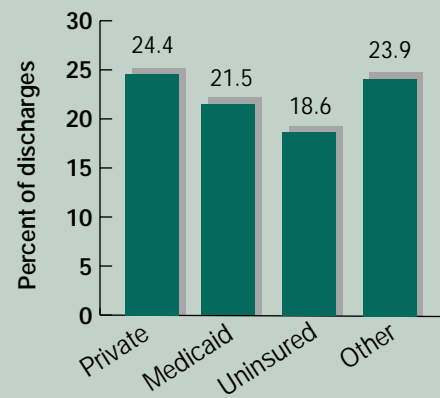
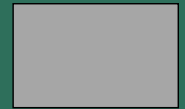
- Average length of hospital stay and total charges are over 40 percent higher for women who have repeat cesarean sections than for women who have vaginal birth after C-section. (Among women who have repeat cesarean sections, some may have attempted a trial of labor first, which led to a longer length of stay.)
- Women who have primary cesarean sections incur the longest length of stay – 4.1 days – and the highest total charges – \$10,200. (This group of women includes those who were unsuccessful with a trial of labor, which may be reflected in the longer length of stay.)

How does resource use differ for women who have cesarean sections and women who have vaginal delivery?



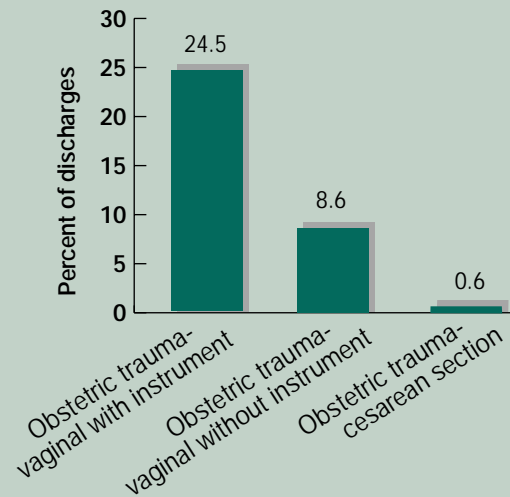
- Women with private insurance have the highest cesarean section rate (24.4 percent). In contrast, women without insurance are least likely to have cesarean sections (18.6 percent).
- Among women covered by Medicaid, about 1 in 5 undergoes cesarean section.

How does cesarean section rate differ by payment source?



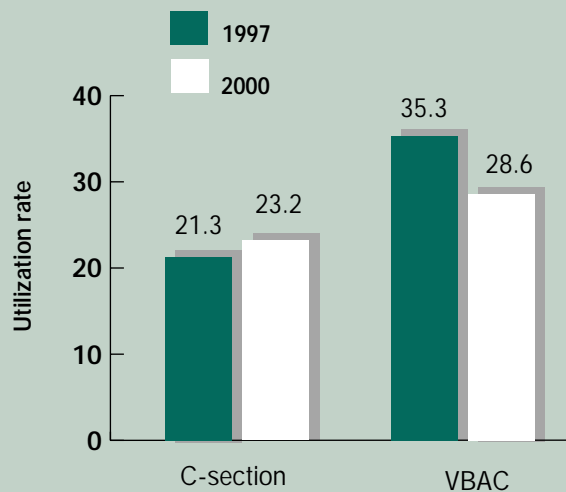
- About 1 in 12 women who have a vaginal delivery without instrumentation experiences perineal or cervical laceration or other obstetric trauma. This compares with nearly 1 in 4 women who have a vaginal delivery that involves use of instruments, such as forceps or vaccum extraction.
- Only 6 in 1,000 women undergoing cesarean sections experience obstetrical trauma.

How is obstetric trauma associated with type of delivery?



- The cesarean section rate increased slightly from 21.3 percent in 1997 to 23.2 percent in 2000.
- The rate for VBAC decreased from 35.3 percent to 28.6 percent from 1997 to 2000. Fewer than one-third of women with a previous cesarean section had vaginal births in 2000. This trend is consistent with other published trends (Gregory et al., 2001; Martin et al., 2002)*.

How have cesarean section rates and vaginal birth after cesarean section rates changed over time?



* Gregory K, Korst L, Platt L. Variation in elective primary cesarean rates by hospital organizational factors. *American Journal of Obstetrics and Gynecology* 2001; 184:1521-34.
 Martin JA, Hamilton BE, Ventura SJ, et al. *Births: Final Data for 2000*. National Vital Statistics Reports; vol. 50 No. 5. Hyattsville, MD: National Center for Health Statistics. 2002.



Source of Data for This Report

The data presented in this report are drawn from the Healthcare Cost and Utilization Project (HCUP), a Federal-State partnership to build a multi-State health care data system. This partnership is sponsored by the Agency for Healthcare Research and Quality (AHRQ) and is managed by staff in AHRQ's Center for Organization and Delivery Studies. HCUP is based on health care administrative data (such as hospital claims and discharge abstracts) collected by individual States and forwarded to AHRQ by the States. HCUP would not be possible without State data collection projects and their partnership with AHRQ.

For 2000, 28 State data organizations contributed their data to AHRQ, where all data are edited and transformed into a uniform format. The uniform data in HCUP databases make possible comparative studies of health care services and the use and cost of hospital care, including:

- The effects of market forces on hospitals and the care they provide,
- Variations in medical practice,
- The effectiveness of medical technology and treatments, and
- Use of services by special populations.

HCUP includes short-term, non-Federal, community hospitals (e.g., general and specialty hospitals such as pediatric, obstetrics-gynecology, and oncology hospitals are included; but long-term care, rehabilitation, and psychiatric hospitals are excluded).

HCUP includes two sets of databases for health services research. The State Inpatient Databases (SID) for 2000 covers inpatient care in community hospitals in 28 States and represent about 80 percent of all hospital discharges in the U.S. The Nationwide Inpatient Sample includes all discharges from 994 hospitals drawn from the SID, adjusted to approximate a national 20-percent sample of U.S. short-term, non-Federal, community hospitals, as defined by the American Hospital Association (AHA). Community hospitals are defined as general and specialty hospitals, including academic medical centers, but excluding long-term care and psychiatric hospitals.

This report is based on data from the NIS. The NIS for 2000 includes information from about 7 million discharges which were weighted to obtain estimates that represent the total number of inpatient hospital discharges in the United States (36.4 million).

The Clinical Classifications Software (CCS), developed by AHRQ, has been used throughout this Fact Book to aggregate diagnosis codes into a limited number of categories. Diagnoses recorded on hospital discharge records are coded using the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*, Fifth Edition. Although ICD-9-CM may be used to provide descriptive statistics, aggregating similar diagnoses or procedures into clinically meaningful categories, such as the CCS, can be more helpful. More information on CCS can be downloaded from AHRQ's Web site (www.ahrq.gov/data/hcup).

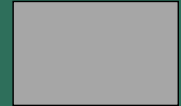
Frequencies and rankings of diagnoses are based on principal, or first-listed diagnosis. Frequencies and rankings of procedures are based on all-listed procedures; that is, all procedures listed on the discharge record. The unit of analysis is the inpatient stay rather than the patient. All discharges have been weighted to produce national estimates.

Total charges in HCUP data are the amount the hospital charged or billed for the entire hospital stay and do not necessarily reflect reimbursements or costs. Charges do not include professional (physician) fees. Charge data were present for 98 percent of all discharges. Charges are generally higher than costs.

Because the NIS is limited to inpatient hospital data, conditions treated or procedures performed in outpatient settings are not reflected here.

Terms relating to differences such as “higher than,” “lower than,” “more than,” “more likely” or “less likely” indicate that the difference is statistically significant at the 0.05 level of significance. The testing of statistical significance is based on the two-tailed test of Z-score with standard errors calculated in SUDAAN that takes into account the stratified probability sample design in NIS.

Methods



More information on HCUP data and the CCS can be obtained at www.ahrq.gov/data/hcup. Additional descriptive statistics can be viewed through HCUPnet (<http://hcup.ahrq.gov/HCUPNet.asp>), a Web-based tool providing easy access to information on hospital stays, available at the same Web site.

Currently, NIS data can be purchased for data years 1988-2000. NIS 2000 may be purchased for \$200 in a set of two CD-ROMs with accompanying documentation from the AHRQ-designated HCUP Central Distributor, Social and Scientific Systems, Inc., telephone: 866-556-4287 (toll-free), fax: 301-628-3201, or e-mail: hcup@s-3.com.



For More Information

The HCUP Central Distributor can also provide information on how to purchase NIS CD-ROM data sets for earlier years (beginning 1988). Prices vary by data year and, as of August 2002, range from \$160 to \$322. All prices may be higher for customers outside the United States, Canada, and Mexico. Additional information is available on the AHRQ Web site.

Previously published HCUP Fact Books in this series are available from the AHRQ Publications Clearinghouse by calling 800-358-9295 (toll free). Order by title and publication number.

- *Hospitalization in the United States, 1997* (HCUP Fact Book No. 1, AHRQ Pub No. 00-0031)
- *Procedures in U.S. Hospitals, 1997* (HCUP Fact Book No. 2, AHRQ Pub No. 01-0016)

Other HCUP Fact Books currently in development include hospitalization for mental disorders, inpatient care for children and adolescents, and hospital care of the uninsured. Information on future availability will be posted on the AHRQ Web site.

Healthcare Cost and Utilization Project (HCUP)
Agency for Healthcare Research and Quality
Phone: 301-594-3075
Fax: 301-594-2166
E-mail: hcup@ahrq.gov



AHRQ Publication No. 02-0044
September 2002

ISBN 1-58763-124-5