

## SECTION 3 INPATIENT HOSPITAL STAYS BY PROCEDURE

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### HIGHLIGHTS

- During almost two out of every three hospital stays in 2007, at least one procedure was performed.
- Six of the top procedures in 2007 were associated with giving birth or newborns.
  - C-section was the most frequent major operating room procedure—performed on 1.5 million women in 2007. Growth in C-sections, up 85 percent between 1997 and 2007, outpaced increases in most other frequently performed maternal procedures and was among the fastest growing procedures for women 18-44 years old.
  - The use of artificial rupture of membrane to assist delivery increased by 56 percent.
  - Episiotomies declined at a faster rate (56 percent from 1997 to 2007) than any of the most frequent procedures.
- Blood transfusions occurred in one out of every 10 hospital stays that included a procedure. There were 1.1 million stays with this procedure in 1997 and 2.6 million in 2007, for a cumulative growth of 140 percent.
  - Blood transfusion was one of the fastest growing top five procedures across many age groups: 72-percent increase for 1-17 year olds, 187-percent increase for 45-64 year olds, 127-percent increase for 65-84 year olds, and 156-percent increase for patients 85 years and older.
- Discharges for respiratory intubation rose steadily, increasing 48 percent over the 1997-2007 period.
  - Respiratory intubation almost doubled in the 45-64 age group and was up 24 percent for infants, 31 percent for 65-84 year olds, and 66 percent for persons 85 and older.
- From 1997 to 2007, arthroplasty of the knee increased by 86 percent.
- Hemodialysis procedures for renal failure grew by 66 percent.
- The use of tube feeding during infant hospitalizations increased 219 percent, compared with a 16-percent growth in all infant discharges.
- Diagnostic cardiac catheterization was performed on 890,000 males and 581,000 females in 2007 and ranked as the 2nd most frequent procedure in men and the 4th most frequent procedure in women.
- PTCA's were performed on 477,000 males and 244,000 females and ranked as the 5th most common procedure for men and the 16th most common for women.
- Males also received more respiratory intubation and mechanical ventilation procedures—727,000 for men compared with 631,000 for women. The procedure ranked 3rd for both genders.
- For alcohol and drug rehabilitation/detoxification, there were more discharges for males (261,000 procedures) than for females (118,000 procedures). Alcohol and drug rehabilitation/detoxification ranked 9th for males and 35th for females.
- Females received blood transfusions, upper gastrointestinal endoscopy, colonoscopy and biopsy, and arthroplasty of the knee more often than males.
- Hysterectomy (removal of the uterus) and oophorectomy (removal of an ovary or ovaries) were the 5th and 6th most common procedures for females.

## EXHIBIT 3.1 Most Frequent All-listed Procedures

**Number, Percent Distribution, Rank, and Growth of Discharges for the Most Frequent All-listed Inpatient Hospital Procedures, 1997 and 2007**

ALL-LISTED CCS PROCEDURES	NUMBER OF STAYS WITH THE PROCEDURE IN THOUSANDS		PERCENT OF DISCHARGES WITH THE PROCEDURE		RANK		CUMULATIVE GROWTH
	1997	2007	1997	2007	1997	2007	1997-2007
All discharges (with and without procedures)	34,679	39,542					14%
All discharges with any procedure	21,257	25,286	100.0%	100.0%			19
Percent of all discharges with a procedure	61%	64%					
Maternal and newborn procedures	8,233	9,760	38.7	38.6			19
Prophylactic vaccinations and inoculations	567	1,638	3.0	6.5	14	2	189
Cesarean section (C-section)	800	1,482	4.0	5.9	9	3	85
Repair of obstetric laceration	1,137	1,448	5.0	5.7	3	5	27
Circumcision	1,164	1,302‡	5.0	5.2	2	7	12
Fetal monitoring	1,002	1,257‡	5.0	5.0	6	8	25
Artificial rupture of membranes to assist delivery	747	1,169	4.0	4.6	10	10	56
Episiotomy (surgical incision into the perineum and vagina to prevent traumatic tearing during delivery)	866	380	4.0	1.5	8	26	-56
All other procedures	13,024	15,525	61.3	61.4			19
Blood transfusion	1,097	2,629	5.0	10.4	5	1	140
Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)	1,461	1,471‡	7.0	5.8	1	4	1
Respiratory intubation and mechanical ventilation	919	1,359	4.0	5.4	7	6	48
Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)	1,105	1,191	5.0	4.7	4	9	8
Hemodialysis (dialysis, cleaning the blood by means of a machine or filter to compensate for poor kidney function)	473	786	2.2	3.1	17	11	66
Echocardiogram (diagnostic ultrasound of heart)	632	739‡	3.0	2.9	11	12	17
PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)	581	722	2.7	2.9	13	13	24
Arthroplasty knee	329	611	1.5	2.4	32	14	86
Colonoscopy and biopsy	531	582	2.5	2.3	16	15	10

‡ 2007 discharges are not statistically different from 1997 discharges at p<0.05.

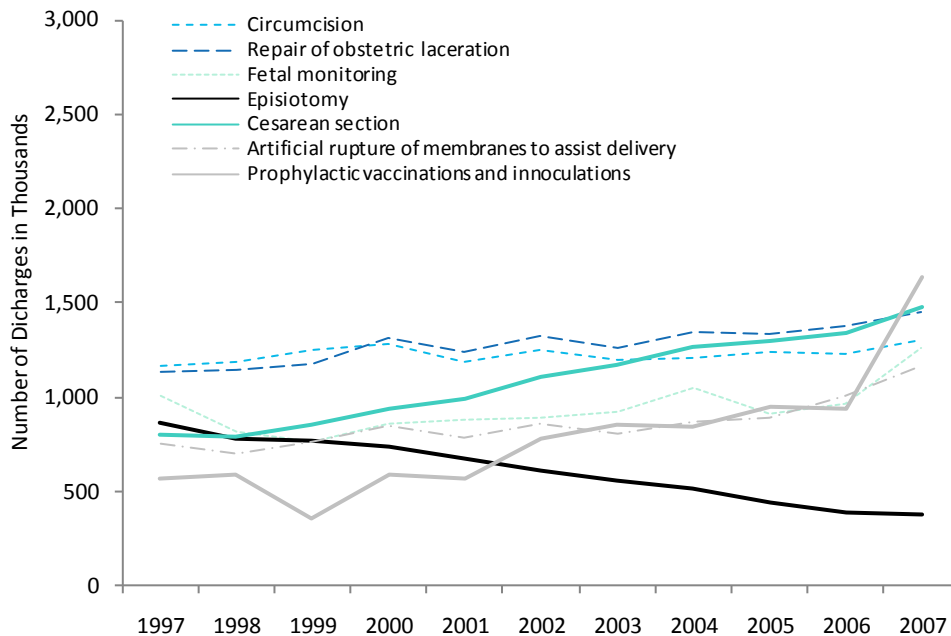
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2007.

During almost two out of every three hospital stays in 2007, at least one procedure was performed, and this proportion increased slightly since 1997. The number of discharges with procedures increased from 21.3 million in 1997 to 25.3 million in 2007, a 19-percent increase.

- The top all-listed procedures performed in 2007 were performed in 2 to 10 percent of all stays. In many stays, more than one procedure was performed.
  - Blood transfusions occurred in one out of every 10 hospital stays that included a procedure and were the most frequently performed procedures in 2007.

- While many of the top 15 most frequent procedures in 2007 were also on the list in 1997, there were some notable exceptions:
  - Vaccinations were added to the list of top procedures, rising in rank from 14th in 1997 to 2nd in 2007. These vaccinations were overwhelmingly hepatitis B immunizations for newborns.
  - Episiotomy fell from the list of top procedures, dropping in rank from 8th in 1997 to 26th in 2007.
  - Discharges with arthroplasty of the knee procedures have steadily risen from 0.3 million in 1997 to 0.6 million in 2007, rising in rank from the 32nd to the 14th most common procedure.
  - Hemodialysis and colonoscopy and biopsy have risen over the 1997-2007 period and are now ranked in the top 15 procedures performed in hospitals.
- C-section was the most frequent major operating room procedure—performed on 1.5 million women in 2007.

**Number of Stays with the Most Frequent All-listed CCS Maternal and Newborn Procedures, 1997-2007**



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2007.

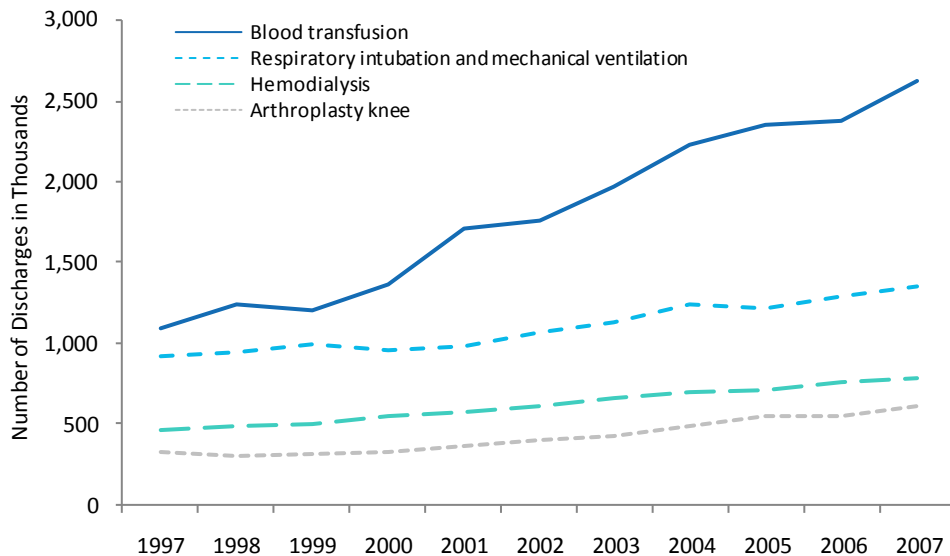
Six of the top procedures in 2007 were associated with giving birth or newborns.

- Maternal stays:
  - Growth in C-sections, up 85 percent between 1997 and 2007, outpaced increases in most other frequently performed maternal procedures.
  - Hospital stays with artificial rupture of membrane to assist delivery increased by 56 percent.
  - Exhibiting the opposite trend, hospital stays in which episiotomies were performed declined at a faster rate than any of the most frequent procedures—by 56 percent from 1997 to 2007. Episiotomies are performed to assist or speed delivery and/or prevent trauma to the mother. They

were performed fairly routinely, but lack of clinical evidence of benefits and some indication of increased injury from the procedure has led to decline in the use of the procedure.<sup>6</sup>

- Possibly as a result of the decrease in episiotomies, repair of current obstetric laceration increased by 27 percent, occurring in 310,000 more discharges in 2007 than in 1997. This compares with a decline of 486,000 discharges in which episiotomies were performed over the same period.
- Newborn stays:
  - Vaccinations were the second most frequent procedure for all discharge types as well as the fastest growing of the most common procedures performed during a newborn hospital stay. This procedure was performed during 1.6 million stays in 2007 and increased 189 percent between 1997 and 2007.
  - There has been little change in the number of discharges for circumcision or fetal monitoring since 1997.

**Number of Stays with the Most Frequent and Rapidly Growing All-listed CCS Procedures (Excluding Maternal and Newborn Stays), 1997-2007**



Note: Graph includes only those most frequent procedures (excluding maternal and newborn stays) with significant increases in discharges.

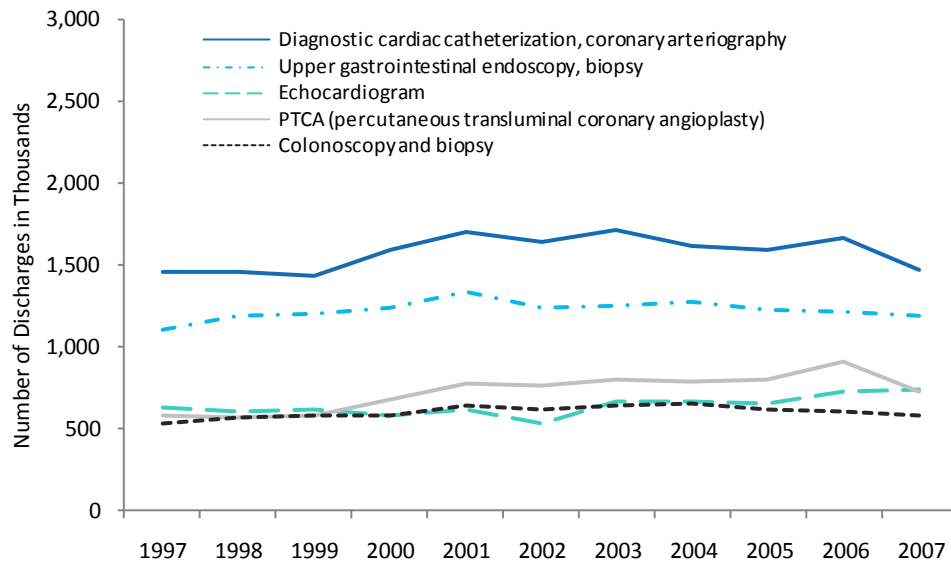
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2007.

Other frequent procedures that were not related to giving birth or being born also grew rapidly.

- Discharges with blood transfusions more than doubled between 1997 and 2007. There were 1.1 million stays with this procedure in 1997 and 2.6 million in 2007, for a cumulative growth of 140 percent.
- Discharges for respiratory intubation rose steadily, increasing 48 percent over the 1997-2007 period.
- From 1997 to 2007, arthroplasty of the knee increased by 86 percent and hemodialysis procedures by 66 percent.

<sup>6</sup> Hartmann K, Viswanathan M, Palmieri R, Gartlehner G, Thorp J, Lohr K. Outcomes of Routine Episiotomy: A Systematic Review. *JAMA* 293:2141-2148, 2005.

**Number of Stays with the Most Frequent and Stable All-listed CCS Procedures (Excluding Maternal and Newborn Stays), 1997-2007**



Note: Graph includes only those most frequent procedures (excluding maternal and newborn stays) with relatively slow growth in discharges.  
 Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997-2007.

Some of the most frequent non-maternal, non-newborn procedures increased more slowly between 1997 and 2007.

- Three of the five frequent inpatient procedures with slower growth between 1997 and 2007 were cardiac procedures.
  - Procedures for PTCA (percutaneous transluminal coronary angioplasty—a procedure involving the use of a balloon-tipped catheter to enlarge a narrowed artery) grew 56 percent from 1997-2006. Between 2006 and 2007, however, there was a 20-percent decline in discharges with this procedure.
  - After growing 17 percent from 1997-2003, inpatient discharges with diagnostic catheterization and coronary arteriography declined 14 percent from 2003-2007, resulting in almost no change (1 percent) from 1997 to 2007.
  - The use of inpatient echocardiograms changed little between 1997 and 2007.
- Inpatient upper gastrointestinal endoscopy and biopsy procedures increased 8 percent between 1997 and 2007. This overall growth masks a 20-percent increase in the use of this procedure between 1997 and 2001, followed by a decrease between 2001 and 2007 of 11 percent.
- Inpatient colonoscopy and biopsy grew slowly—only 10 percent over the period.

## EXHIBIT 3.2 Most Frequent All-listed Procedures by Age

Number of Discharges, Percent Distribution, and Growth for the Most Frequent All-listed Inpatient Hospital Procedures by Age Group, 1997 and 2007

AGE GROUP AND ALL-LISTED CCS PROCEDURES	NUMBER OF DISCHARGES IN THOUSANDS		PERCENT OF AGE-SPECIFIC TOTAL DISCHARGES		CUMULATIVE GROWTH
	1997	2007	1997	2007	1997-2007
All ages, total discharges <sup>†</sup>	34,679	39,542			14%
<b>&lt; 1 year, total discharges</b>	<b>4,426</b>	<b>5,125</b>	<b>100.0%</b>	<b>100.0%</b>	<b>16</b>
Prophylactic vaccinations and inoculations	549	1,461	12.4	28.5	166
Circumcision	1,159	1,299‡	26.2	25.3	12
Ophthalmologic and otologic diagnosis and treatment (vision and hearing diagnosis and treatment)	*	532	*	10.4	*
Respiratory intubation and mechanical ventilation	163	202	3.7	3.9	24
Enteral and parenteral nutrition	39	124	0.9	2.4	219
<b>1-17 years, total discharges</b>	<b>1,821</b>	<b>1,658‡</b>	<b>100.0</b>	<b>100.0</b>	<b>-9</b>
Appendectomy (removal of appendix)	74	82‡	4.1	4.9	10
Repair of obstetric laceration	58	60‡	3.2	3.6	3
Blood transfusion	26	45	1.4	2.7	72
Cancer chemotherapy	43	44‡	2.4	2.7	3
Artificial rupture of membranes to assist delivery	40	44‡	2.2	2.7	10
<b>18-44 years, total discharges</b>	<b>9,444</b>	<b>10,354</b>	<b>100.0</b>	<b>100.0</b>	<b>10</b>
Cesarean section (C-section)	773	1,443	8.2	13.9	87
Repair of obstetric laceration	1,079	1,386	11.4	13.4	28
Fetal monitoring	952	1,211‡	10.1	11.7	27
Artificial rupture of membranes to assist delivery	706	1,123	7.5	10.9	59
Episiotomy (surgical incision into the perineum and vagina to prevent traumatic tearing during delivery)	813	358	8.6	3.5	-56

(continued on next page)

**Number of Discharges, Percent Distribution, and Growth for the Most Frequent All-listed Inpatient Hospital Procedures by Age Group, 1997 and 2007--continued**

AGE GROUP AND ALL-LISTED CCS PROCEDURES	NUMBER OF DISCHARGES IN THOUSANDS		PERCENT OF AGE-SPECIFIC TOTAL DISCHARGES		CUMULATIVE GROWTH
	1997	2007	1997	2007	1997-2007
<b>45-64 years, total discharges</b>	<b>6,496</b>	<b>9,135</b>	<b>100.0%</b>	<b>100.0%</b>	<b>41%</b>
Blood transfusion	247	708	3.8	7.8	187
Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)	578	641†	8.9	7.0	11
Respiratory intubation and mechanical ventilation	186	370	2.9	4.1	99
Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)	275	369	4.2	4.0	34
PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)	247	320	3.8	3.5	30
<b>65-84 years, total discharges</b>	<b>10,121</b>	<b>10,277‡</b>	<b>100.0</b>	<b>100.0</b>	<b>2</b>
Blood transfusion	514	1,166	5.1	11.3	127
Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)	738	656†	7.3	6.4	-11
Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)	530	491	5.2	4.8	-7
Respiratory intubation and mechanical ventilation	366	479	3.6	4.7	31
PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)	286	332‡	2.8	3.2	16
<b>85+ years, total discharges</b>	<b>2,362</b>	<b>2,953</b>	<b>100.0</b>	<b>100.0</b>	<b>25</b>
Blood transfusion	138	354	5.8	12.0	156
Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)	122	134	5.2	4.5	10
Respiratory intubation and mechanical ventilation	65	108	2.8	3.7	66
Treatment, fracture or dislocation of hip and femur	87	84‡	3.7	2.8	-3
Echocardiogram (diagnostic ultrasound of heart)	65	79‡	2.7	2.7	23

† Includes a small number of discharges (less than 41,000 or 0.1 percent) with missing age.

‡ 2007 discharges are not statistically different from 1997 discharges at p<0.05.

\* Statistics based on estimates with a relative standard error (standard error/weighted estimate) greater than 0.30 or with standard error equal to 0 in the nationwide statistics are not reliable.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2007.

While some of the most frequent procedures tended to vary by age group, some were common in several age groups.

- Blood transfusion was a top five procedure in all age groups except infants less than 1 year and individuals 18-44 years old. It was the third most common procedure for 1-17 year olds and the first for adults 45-64, 65-84, and 85 years and older.

- Blood transfusion was one of the fastest growing procedures from 1997 to 2007: 72-percent increase for 1-17 year olds, 187-percent increase for 45-64 year olds, 127-percent increase for 65-84 year olds, and 156-percent increase for patients 85 years and older.
- Procedures for respiratory intubation/mechanical ventilation were common among four of the age groups (infants, adults 45-64 and 65-84 years old, and seniors 85 years and older) and represented 4 to 5 percent of discharges in each age group.
  - Respiratory intubation grew rapidly from 1997 to 2007. It almost doubled in the 45-64 age group and was up 24 percent for infants, 31 percent for 65-84 year olds, and 66 percent for 85 and older.
- Upper GI endoscopy was common among 45-64 year olds and both senior age groups (65-84 and 85 years and older). From 1997 to 2007, the number of discharges grew for 45-64 year olds (34 percent) and patients 85 years and older (10 percent). For 65-84 year olds, however, the number of discharges decreased by 7 percent.
- Diagnostic cardiac catheterization and coronary arteriography were common for 45-64 year olds (641,000 procedures) and 65-84 year olds (656,000 procedures). Growth in these procedures was insignificant, consistent with the negligible growth (1 percent) in this procedure for all ages (Exhibit 3.1).
- The fifth most frequent procedure for patients 45-64 and 65-84 was PTCA, a procedure that uses a balloon-tipped catheter to enlarge a narrowed artery. This procedure was performed during 320,000 stays for 45-64 year olds and 332,000 stays for 65-84 year olds in 2007.

For infants:

- The most common procedures performed on infants were routine procedures, such as circumcision (performed in 25.3 percent of infant stays), vaccinations (performed in 28.5 percent of infant stays), and vision and hearing diagnosis and treatment (performed in 10.4 percent of infant stays).
  - In 2007, 1.3 million circumcisions were completed in the hospital.
  - Procedures on infants also included those done for complex conditions affecting severely ill babies, such as enteral/parenteral nutrition, or tube feeding (performed during 124,000 infant stays in 2007).
  - The use of tube feeding during infant hospitalizations increased 219 percent, compared with a 16-percent growth in all infant discharges.

For children 1-17:

- Overall, hospitalizations for children declined 9 percent between 1997 and 2007.
- Appendectomy was the most common procedure for children 1-17 years old, accounting for 4.9 percent of hospitalizations in this age group.
- Other top procedures common in stays for children included repair of obstetric laceration in teen deliveries, cancer chemotherapy, and artificial rupture of membranes to assist in teen delivery.

For adults 18-44:

- All five of the most common procedures were related to pregnancy and childbirth for adults 18-44 years old.
  - C-sections and repair of obstetric laceration were the most frequently performed procedures. These procedures each occurred in over 13 percent of all discharges for this age group, up from 8.2 percent for C-sections and 11.4 percent for obstetric lacerations in 1997.
  - C-sections increased by 87 percent from 1997 to 2007, among the fastest-growing of the top five procedures for young adults.
  - Episiotomy, a surgical incision to prevent traumatic tearing during vaginal delivery, was the fifth most frequently occurring procedure in this age group. However, the number of these procedures performed has decreased by 56 percent between 1997 and 2007.
  - Other common procedures experienced growth between 1997 and 2007, including artificial rupture of membranes to assist delivery (up 59 percent) and fetal monitoring (up 27 percent).



For adults 45-64 and 65-84:

- In 2007, the five most frequently performed procedures were the same for individuals 45-64 and 65-84 years old. These procedures were blood transfusions, diagnostic cardiac catheterization and coronary arteriography, respiratory intubation and mechanical ventilation, upper GI endoscopy, and PTCA discussed earlier in this section.
  - Blood transfusion was the leading procedure for 45-64 year olds and 65-84 year olds. Discharges with this procedure have more than doubled for each age group between 1997 and 2007.
  - Diagnostic cardiac catheterization and coronary arteriography was the second most common procedure performed and accounted for 7.0 and 6.4 percent of the hospital stays in each of these age groups.

For adults 85 years and older:

- For patients 85 years and older, treatment of a fracture or dislocation of the hip and femur and echocardiograms were among the top procedures performed during a hospital stay that appeared only in this age group.
  - Discharges for treatment of a hip fracture or dislocation changed very little (-3 percent) from 1997 to 2007.
  - Similarly, the number of echocardiograms performed in 2007 (79,000) was not very different from the number performed in 1997 (65,000).
- Twelve percent of all hospital stays for this age group involved blood transfusions, the largest share for any age group.

## EXHIBIT 3.3 Most Frequent All-listed Procedures by Gender

**Number of Discharges, Percent Distribution, and Rank of the Most Frequent All-listed Procedures for Inpatient Hospital Stays Excluding Pregnancy and Childbirth, by Gender, 2007**

ALL-LISTED CCS PROCEDURES	NUMBER OF DISCHARGES IN THOUSANDS		PERCENT OF DISCHARGES WITH A PROCEDURE		RANK	
	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES
Discharges with a procedure <sup>†</sup>	9,233	8,413	100.0%	100.0%		
Blood transfusion	1,136	1,491	12.3	17.7	1	1
Diagnostic cardiac catheterization, coronary arteriography (diagnostic procedure to explore the functioning of the heart)	890	581	9.6	6.9	2	4
Respiratory intubation and mechanical ventilation	727	631	7.9	7.5	3	3
Upper gastrointestinal endoscopy (procedure to view and biopsy the esophagus, stomach and first portion of intestine through a lighted tube)	543	647	5.9	7.7	4	2
PTCA (percutaneous transluminal coronary angioplasty, procedure involving use of a balloon-tipped catheter to enlarge a narrowed artery)	477	244	5.2	2.9	5	16
Hemodialysis (dialysis, cleaning the blood by means of a machine or filter to compensate for poor kidney function)	407	378 <sup>‡</sup>	4.4	4.5	6	8
Echocardiogram (diagnostic ultrasound of heart)	385	355 <sup>‡</sup>	4.2	4.2	7	9
Enteral and parenteral nutrition	282	280 <sup>‡</sup>	3.1	3.3	8	14
Alcohol and drug rehabilitation/detoxification	261	118	2.8	1.4	9	35
Colonoscopy and biopsy	243	338	2.6	4.0	10	11
Arthroplasty knee	226	384	2.4	4.6	13	7
Hysterectomy (removal of the uterus)	–	538	–	6.4	–	5
Oophorectomy, unilateral and bilateral (removal of an ovary or ovaries)	–	390	–	4.6	–	6

<sup>†</sup>Excludes procedures related to pregnancy and childbirth and a small number of discharges (less than 108,000 or 0.3 percent) with missing gender.

<sup>‡</sup>Female discharges are not statistically different from male discharges at  $p < 0.05$ .

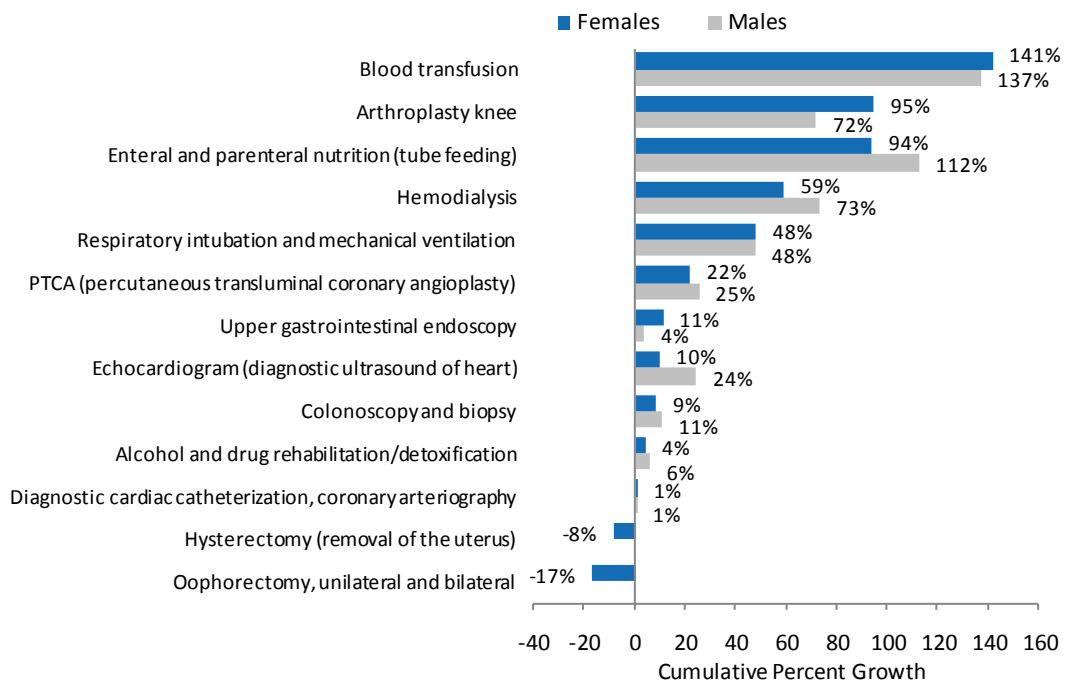
Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2007.

When procedures related to childbirth and newborns are excluded, males and females receive similar procedures.

- Blood transfusions were the most common procedure for both genders when childbirth and newborn procedures are excluded. Transfusions occurred in 12.3 percent of all procedure-related stays for males and 17.7 percent of stays for females.
- For procedures common to both males and females, some procedures occurred more frequently in one gender:
  - Two heart-related procedures—diagnostic cardiac catheterization and PTCAs—were performed more often on males than females. Diagnostic cardiac catheterization was performed on 0.9 million males and 0.6 million females in 2007 and ranked as the 2nd most frequent procedure in men and the 4th most frequent procedure in women.
  - PTCAs were performed on 0.5 million males and 0.2 million females and ranked as the 5th most common procedure for men and the 16th most common for women.
  - Males also received more respiratory intubation and mechanical ventilation procedures—727,000 for men compared with 631,000 for women. The procedure ranked 3rd for both genders.

- For alcohol and drug rehabilitation/detoxification, there were more discharges for males (261,000 procedures) than for females (118,000 procedures). Alcohol and drug rehabilitation/detoxification ranked 9th for males and 35th for females.
- Females received blood transfusions, upper gastrointestinal endoscopy, colonoscopy and biopsy, and arthroplasty of the knee more often than males.
- For all other top ranking procedures (hemodialysis, echocardiograms, and enteral and parenteral nutrition), there was little difference between males and females in the volume of procedures performed.
- Hysterectomy (removal of the uterus) and oophorectomy (removal of an ovary or ovaries) were the 5th and 6th most common procedures for females.

### Growth of the Most Frequent All-listed Procedures for Females and Males, 1997-2007



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1997 and 2007.

From 1997 to 2007, growth varied widely among common procedures, but less so between females and males within a given procedure.

- The number of discharges for blood transfusion, the most frequent procedure for both genders, was among the fastest growing common procedures since 1997, increasing at 141 percent for females and 137 percent for males.
- Other rapidly growing procedures for both females and males were arthroplasty of the knee (95 percent increase for females, 72 percent increase for males), tube feeding (94 percent increase for females, 112 percent increase for males), hemodialysis (59 percent increase for females, 73 percent for males) and respiratory intubation and mechanical ventilation (48 percent increase for both females and males).

- Other procedures, including colonoscopy and alcohol and drug rehabilitation/detoxification increased more slowly—by 11 percent or less for both females and males.
- Although hysterectomies and oophorectomies increased during the 6-year period from 1997-2002, these female-specific procedures declined in subsequent years. Over the 1997 to 2007 period, hysterectomies decreased by 8 percent and oophorectomies by 17 percent.