

II. RESOURCE ASSESSMENT

A. HOSPITAL RESOURCES

1. WHAT HOSPITAL RESOURCES DO DELAWARE RESIDENTS USE?

Community residents rely on the eight hospital systems within the state of Delaware to serve the majority of their inpatient care. Some residents seek services from providers located outside of Delaware, particularly Wicomico County, MD and Philadelphia County, PA.

- **Acute care beds** comprise nearly 80 percent of the 2,013 total staffed beds in the state.
- **Intensive care unit beds** represent roughly eight percent of staffed bed capacity and tend to be concentrated in the Christiana Care Health System, which provided 46 percent of staffed intensive care beds.
- Between 1996 and 1997, the number of **total staffed acute care beds** in Delaware increased by 10 percent. Much of this increase occurred in maternity beds.
- Christiana Care Health System hospitals provide 39 percent of staffed **medical/surgical beds**, 53 percent of **maternity beds**, 14 percent of **psychiatric/substance abuse care beds**, 47 percent of **rehabilitation beds**, and 34 percent of **hospital long-term care beds**.
- Of all **hospital-based services**, Delaware has only one open heart surgery unit, which is located in the Christiana Care Health System.
- Delaware hospitals most frequently offer inpatient and outpatient physical rehabilitation as well as inpatient and outpatient psychiatric services, each of which is provided at seven of the nine hospitals in Delaware.
- Delaware residents **leave the state** most often for surgical services, with 16 percent of admissions and days occurring out of the state.
 - Delaware residents most often go to Wicomico County, MD for circulatory system disorders and to Philadelphia County, PA for nervous system and musculoskeletal disorders.
- For Delaware residents who receive care within the state, most services are provided in New Castle County.

2. DO DELAWARE HOSPITALS SERVE AS AN INPATIENT RESOURCE FOR RESIDENTS OF OTHER COMMUNITIES?

Overall, more patients migrate into Delaware for inpatient services than migrate out of the state. This migration has little effect on the overall service volume of Delaware hospitals.

- The **net effect of patient migration** results in a 0.6 percent “increase” in service volume for hospitals in Delaware.
 - The impact of migration varies by service type. Maternity volume increases the most (5.7 percent), while surgical volume is the only service type with a net decrease (2.1 percent).
- As the above analysis shows, the number of non-Delawareans that obtain care in Delaware is similar to the number of residents of the state who obtain care from facilities located outside of the state. Failing to account for the changes in service volume caused by patient migration could lead to inaccurate assessments of hospital capacity levels relative to actual need.

3. ARE DELAWARE’S INPATIENT HOSPITAL RESOURCES APPROPRIATE, GIVEN THE NEED FOR SUCH SERVICES?

Delaware has an adequate supply of staffed hospital beds under current utilization rates and would have excess acute care hospital beds under most alternative utilization scenarios.

- Delaware has roughly **2.7 beds per 1,000 persons**, less than in the U.S. and comparison communities (except for Maryland and Seattle).
- The “excess beds” analysis examines the adequacy of the staffed hospital beds in Delaware to meet the demand for care in these hospitals. Demand for care is based on the utilization of beds by Delaware residents and then adjusted for migration into and out of the state. The number of bed days available to meet this demand is determined by the number of days of care that could be used if each staffed bed were occupied at the optimal rate¹ over a one-year period. Assuming beds are occupied at this standard rate, any staffed bed days in excess of the current demand for care are considered excess. For the analysis of bed capacity, we supplemented secondary source data with data from a Lewin Group survey of area hospitals to ensure that the analysis reflected the most accurate bed count available.
- In this analysis, we also present how many beds would be excess in Delaware if state residents used inpatient days at the same rate as residents of benchmark communities. These numbers do not reflect the number of excess beds that exist in a particular

¹ Standard occupancy levels are defined as 80 percent for medical/surgical beds, 70 percent for maternity beds and 95 percent for psychiatric/substance abuse beds.

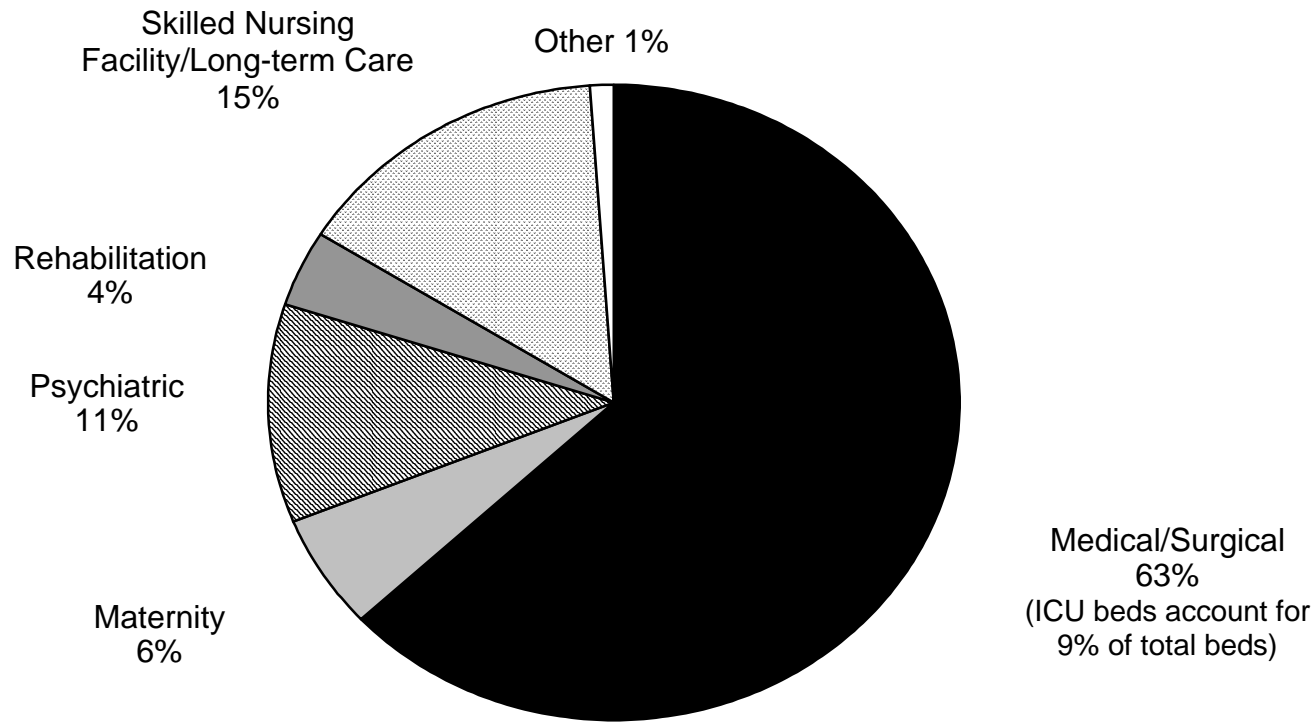
benchmark, but rather the number of excess beds that would exist in Delaware if the demand for care in the state were that of the benchmarks.

- Delaware has an **adequate capacity** for current utilization (83 staffed beds more than needed or four percent of current staffed capacity), after adjusting current use rates for migration effects.
 - Because use rates are higher in Delaware than in benchmarks, there would be an oversupply of beds in the state if the state utilized inpatient days at the same rate as most benchmark communities. Indeed, if the state had the same demand for inpatient care as most other benchmarks, hospitals in Delaware would have between 294 and 693 excess beds.
- **Excess bed capacity** in Delaware varies **by hospital service type**. Medical/surgical and maternity beds appear to match capacity needs, while private psychiatric/substance abuse beds in private hospitals are in excess of demand.
 - Delaware is in need of approximately 23 additional **medical/surgical beds** under current utilization scenarios. This under-supply of beds decreases under most alternate utilization scenarios. Between 137 and 501 staffed medical/surgical beds in Delaware hospitals would not be needed if Delaware had the same utilization rates as benchmarks.
 - Eighteen **maternity beds** (14 percent) are excess in Delaware hospitals, and the level of oversupply does not change significantly under most alternate utilization scenarios (16 to 41 excess beds).
 - Delaware’s private hospitals have a surplus of 88 **psychiatric/substance abuse beds** (40 percent)².
 - Under **moderate utilization guidelines** commonly used by the managed care industry, 39 percent of medical/surgical beds, 28 percent of maternity beds, and 71 percent of psychiatric/substance abuse beds could be considered excess capacity.

² Data for this analysis is based on hospital-identified psychiatric/substance abuse beds in acute care private psychiatric hospitals. This analysis does not include either the supply or utilization of psychiatric/substance abuse beds in Delaware’s public inpatient psychiatric facility.

Exhibit II-A-1: There were 2,013 staffed beds in Delaware hospitals. Approximately 63 percent were medical/surgical beds.

Total Staffed Beds by Bed Type 1997



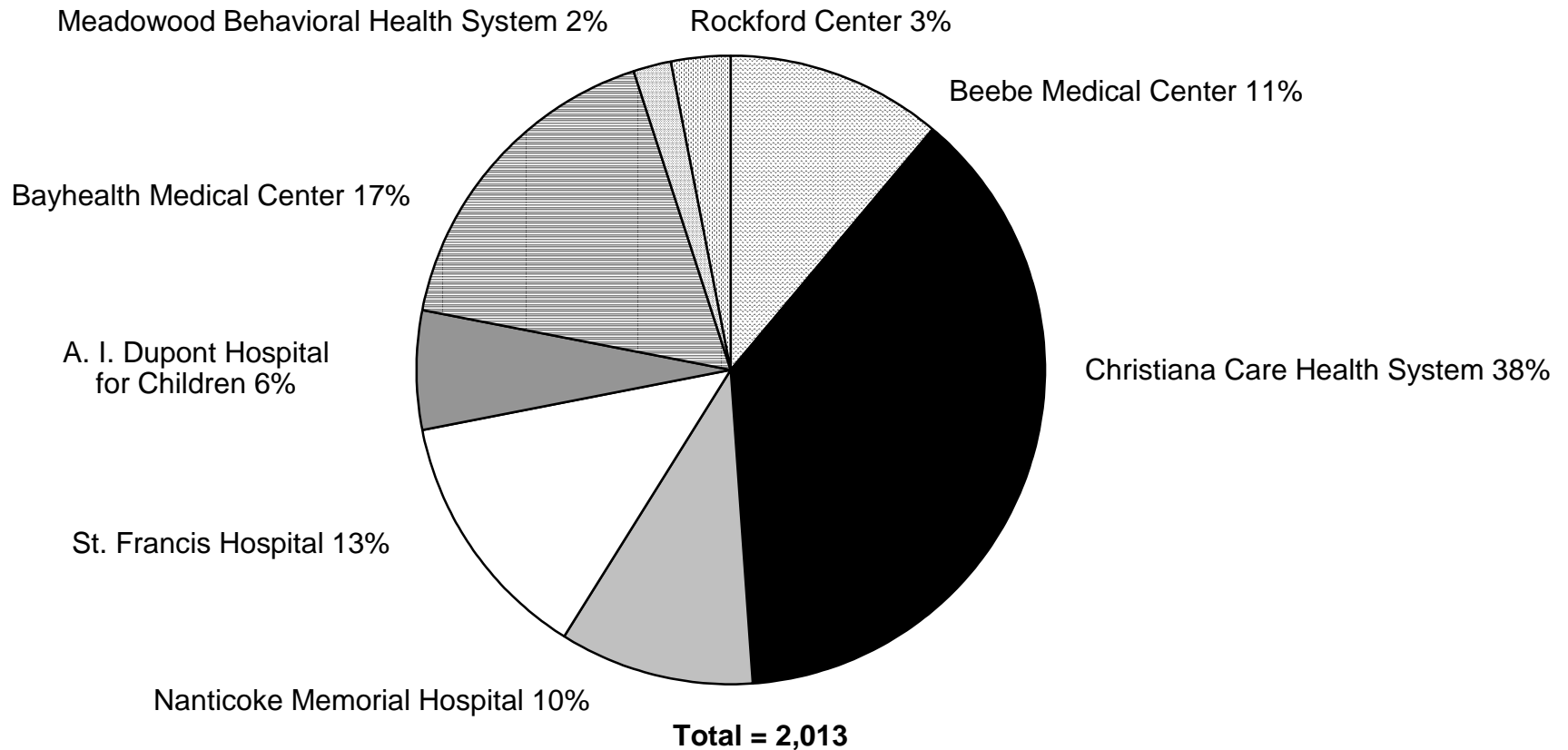
Total = 2,013

Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.
 Note: (a) Staffed beds do not include bassinets.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-2: Eight hospital systems served Delaware residents^(a). Inpatient capacity ranged from 50 staffed beds at Meadowood Behavioral Health System to 737 staffed beds at Christiana Care Health System.

Total Staffed Beds by Hospital 1997



Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

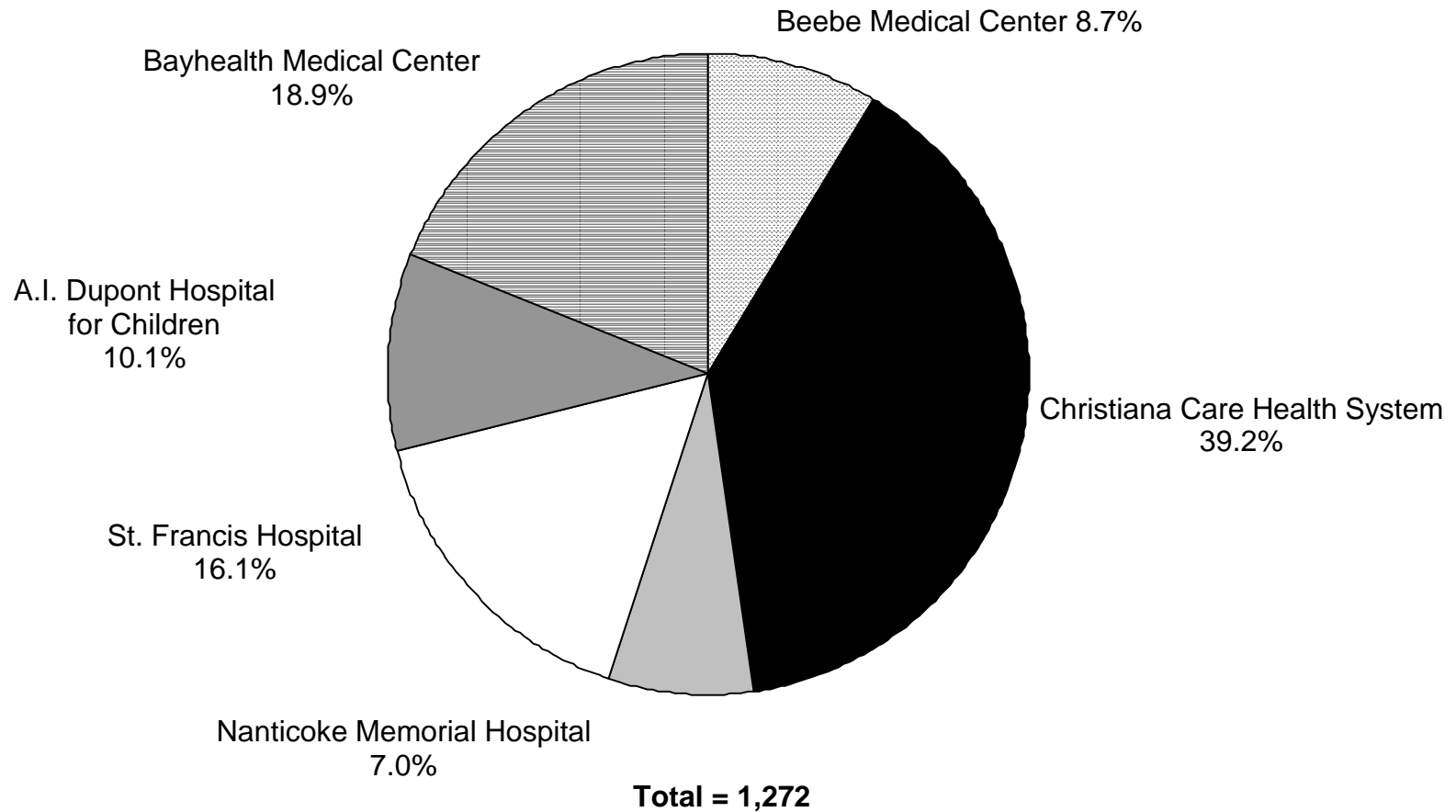
Note: (a) Staffed beds do not include bassinets.

(b) Beds in Delaware state psychiatric hospitals are not included in this analysis (334 beds - Delaware Psychiatric Center).

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-3: There were 1,272 medical/surgical beds in Delaware, 39.2 percent of which were located in Christiana Care Health System.

Total Staffed Acute Care Beds by Hospital Medical/Surgical 1997

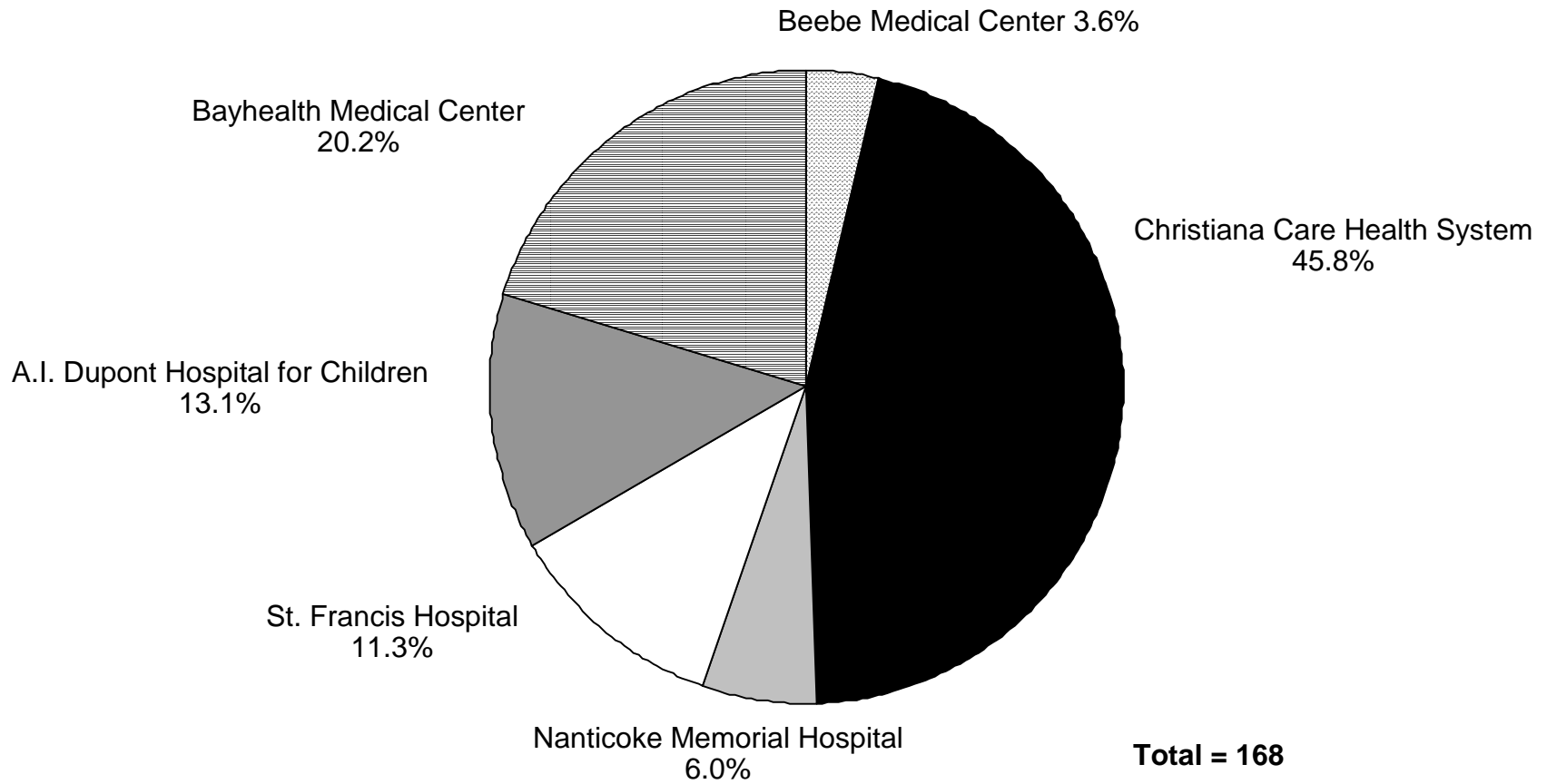


Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-4: Of the 1,272 medical/surgical beds, 168 were classified as staffed intensive care beds.

Total Staffed Intensive Care Beds by Hospital 1997

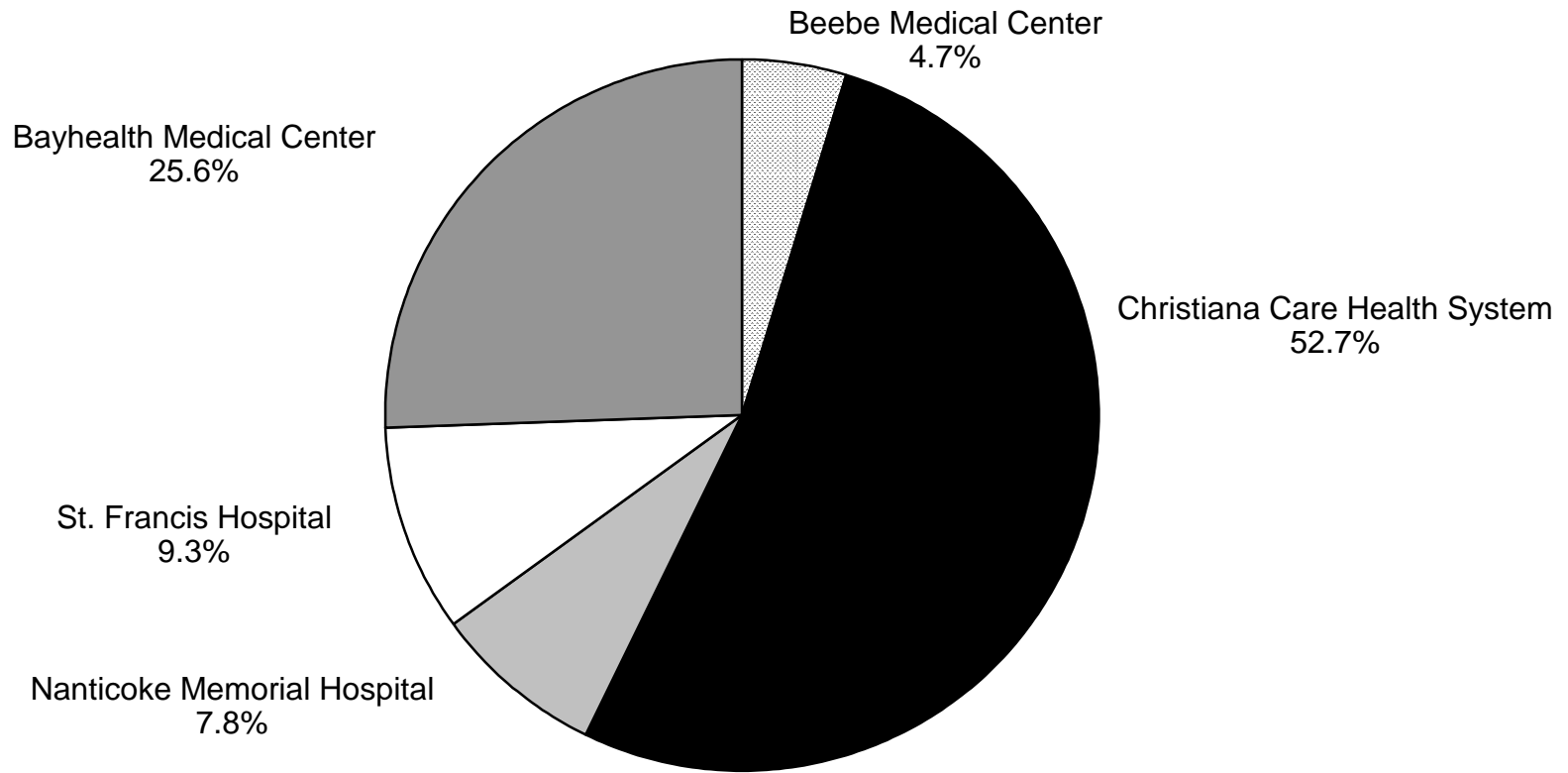


Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-5: Christiana Care Health System provided more than half of the 129 staffed maternity beds in Delaware.

Total Staffed Acute Care Beds by Hospital Maternity 1997



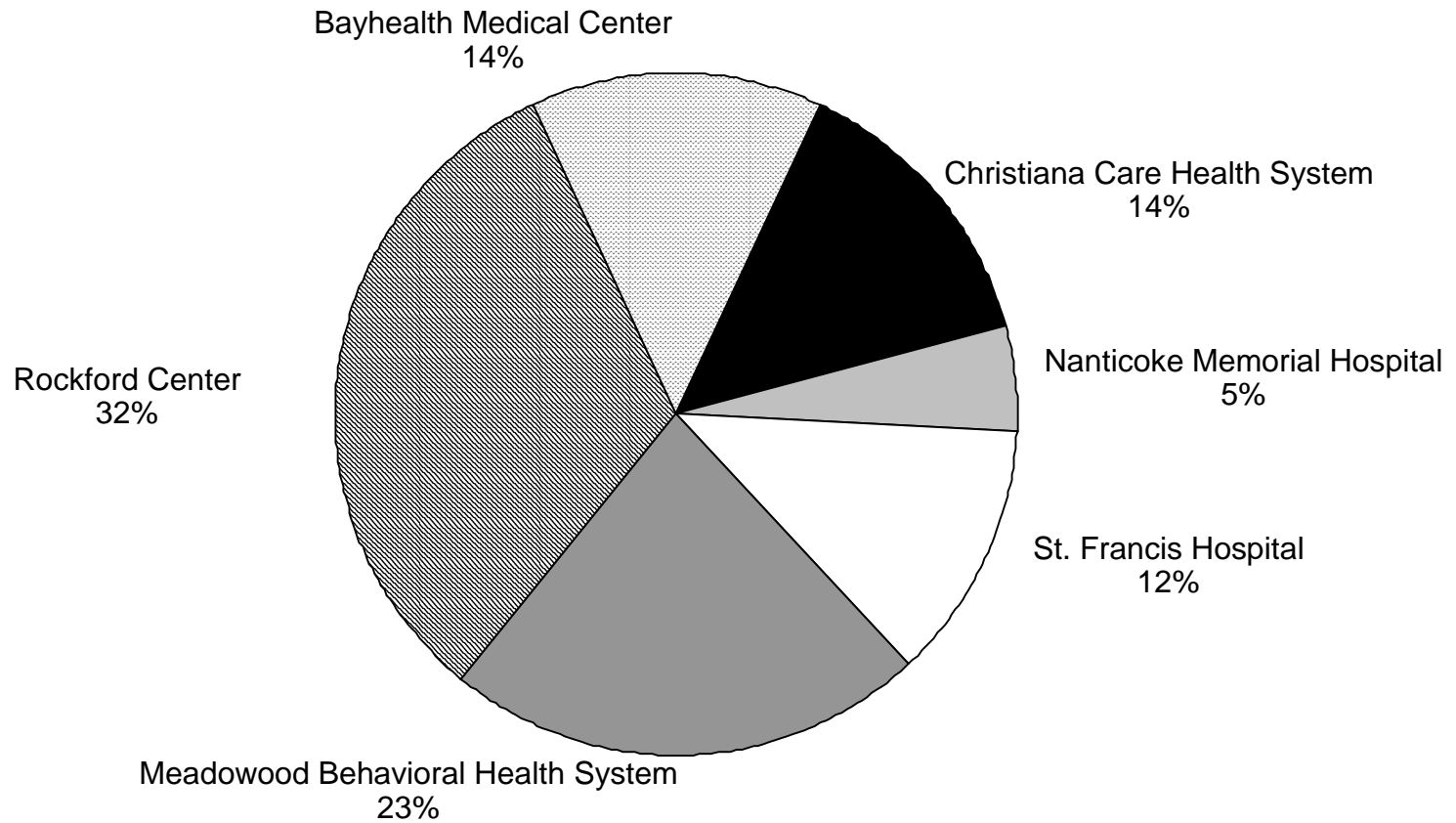
Total = 129

Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-6: There were 220 staffed psychiatric beds in Delaware^(a), representing 11 percent of total staffed beds.

Total Staffed Acute Care Beds by Hospital Psychiatric 1997



Total = 220

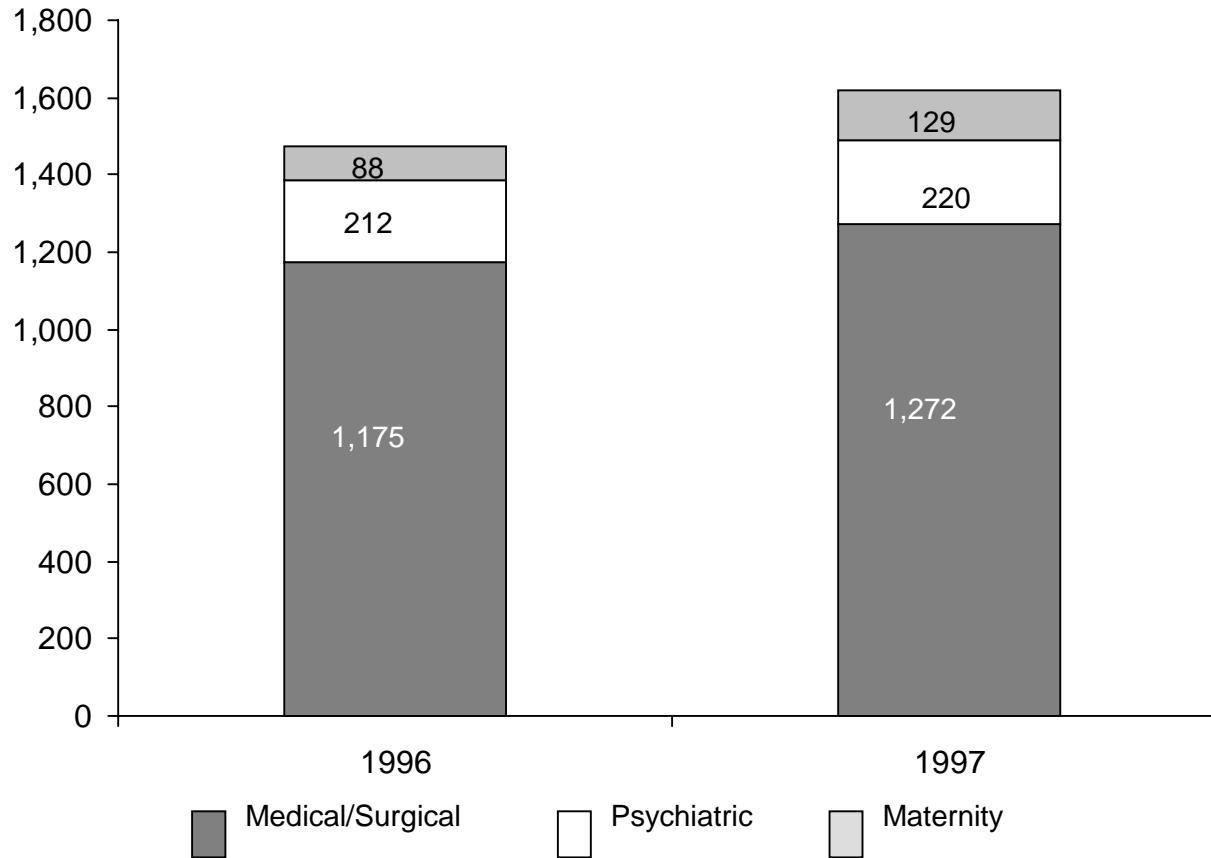
Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

Note: (a) Beds in Delaware's state psychiatric hospitals are not included in this analysis (334 beds - Delaware Psychiatric Center).

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-7: Staffed acute care beds increased by 10 percent (146 beds) from 1996 to 1997. Much of this increase was in maternity beds.

Total Staffed Acute Beds by Year 1996 - 1997

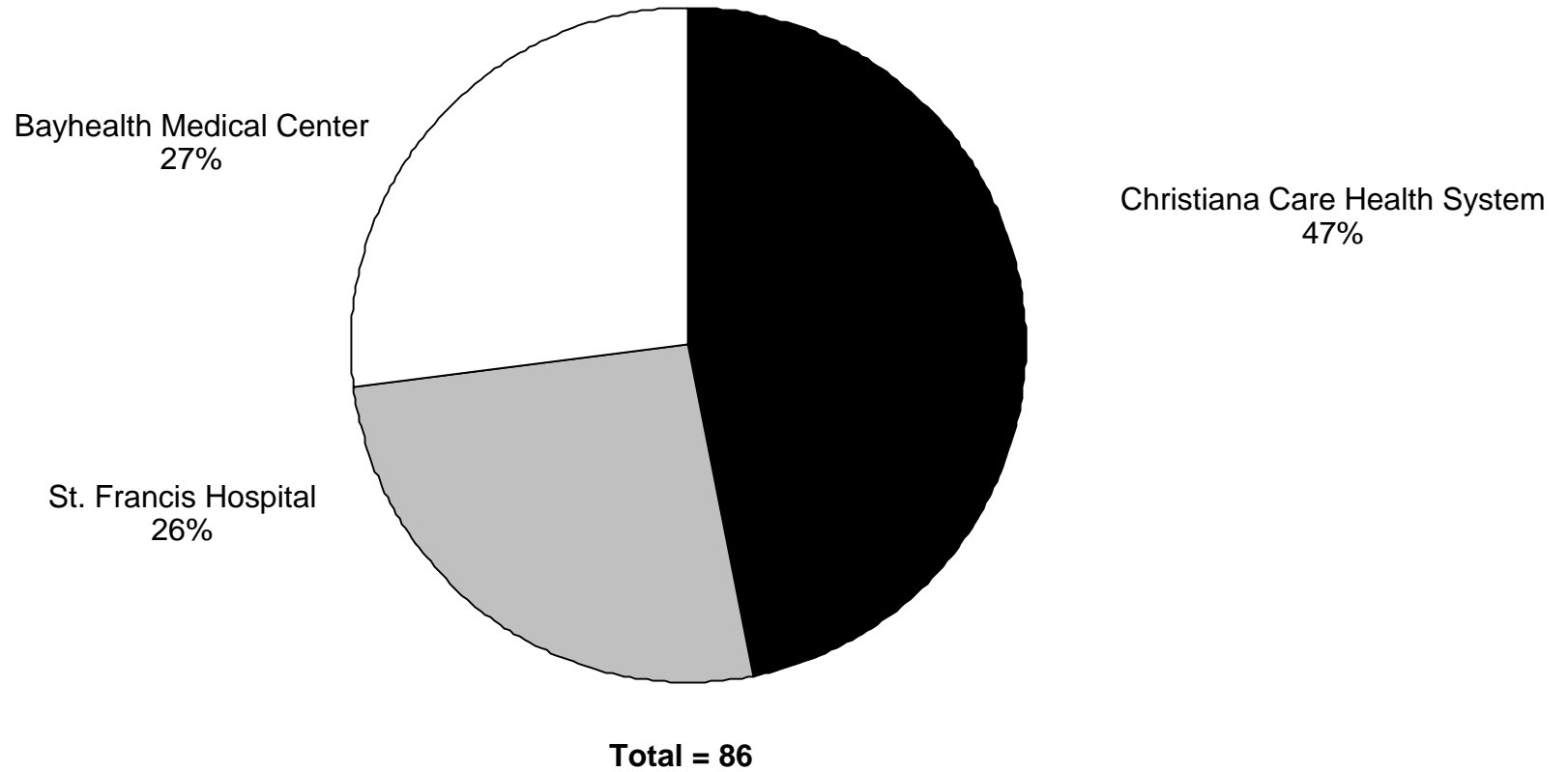


Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-8: Christiana Care Health System, Bayhealth Medical Center and St. Francis Hospital provided 86 staffed rehabilitation beds in Delaware.

Total Staffed Post-acute Beds by Hospital Rehabilitation 1997

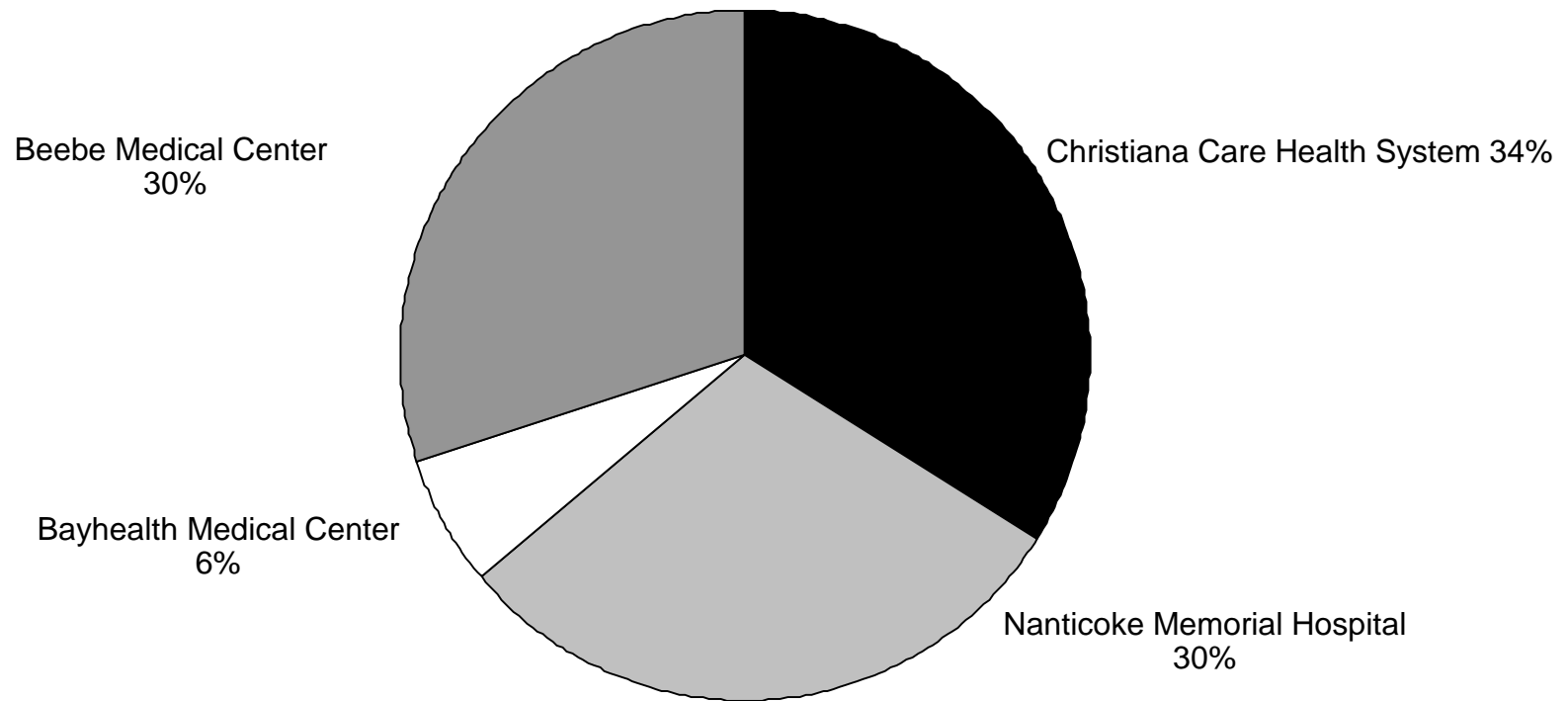


Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-9: Four Delaware hospitals^(a) provided 296 staffed beds for skilled nursing facility/long-term care, representing approximately 15 percent of total statewide staffed beds.

Total Staffed Post-acute Care Beds by Hospital Skilled Nursing Facility/Long-term Care 1997



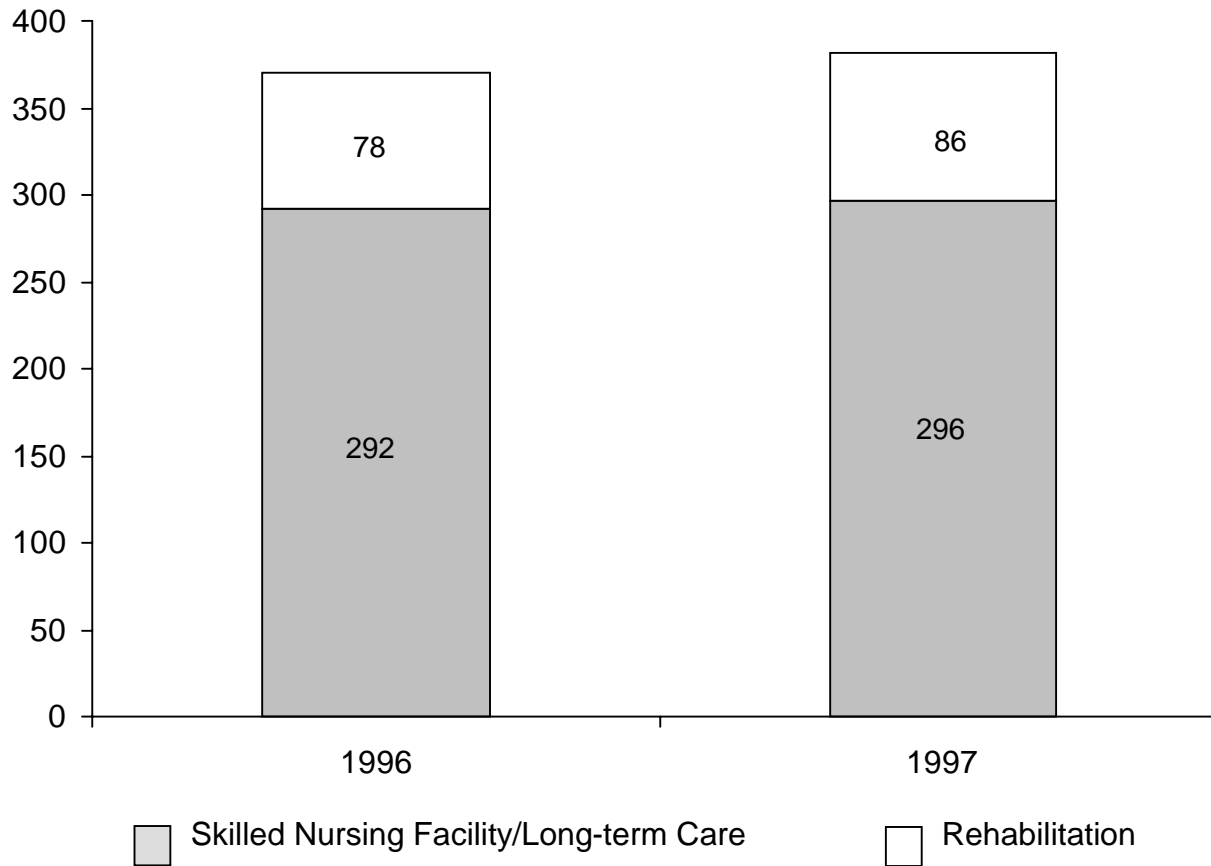
Total = 296

Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.
 Note: (a) Beds in Delaware state long term care institutions are not included in this analysis.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-10: The number of staffed rehabilitation beds in Delaware hospitals increased by 10 percent from 1996 to 1997.

Total Staffed Post-acute Beds by Year 1996 - 1997

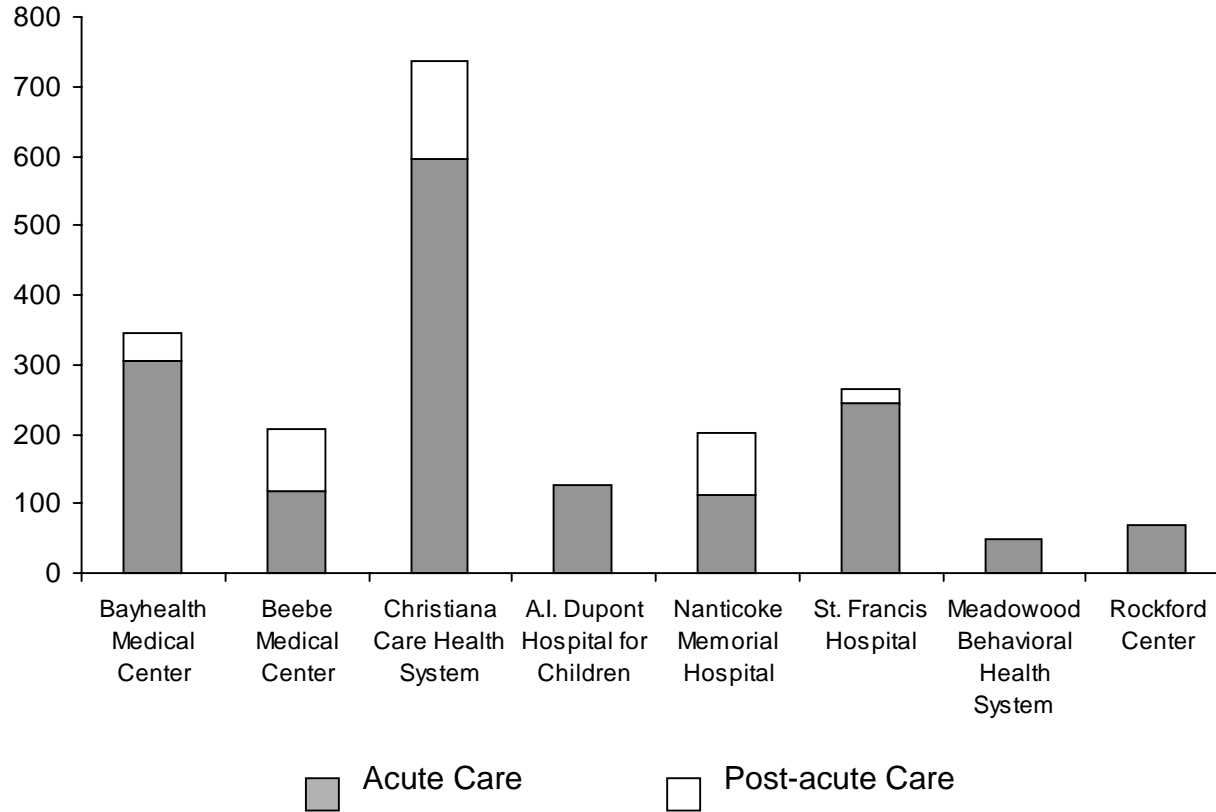


Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-11: Christiana Care Health System had the greatest acute care inpatient capacity, as well as post-acute care inpatient capacity, of all Delaware hospitals.

Staffed Acute and Post-acute Care Beds by Hospital 1997



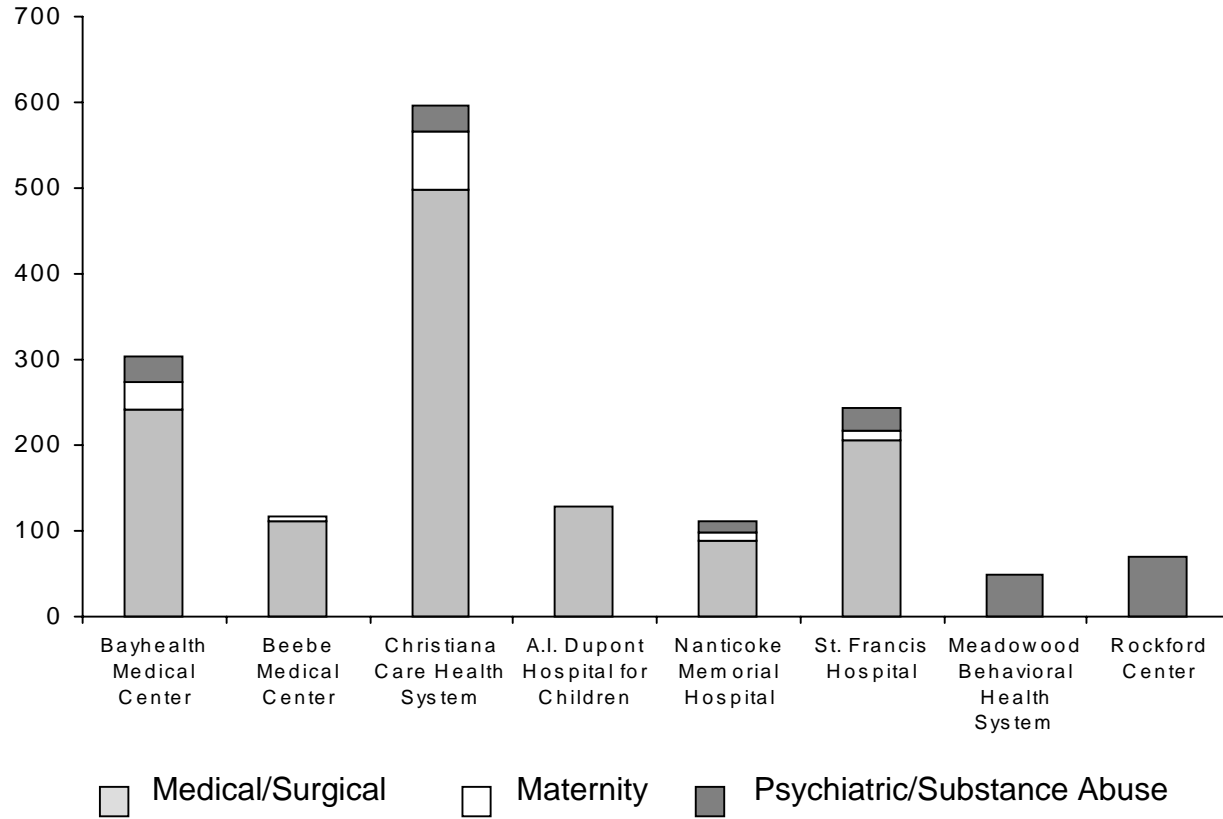
Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

Note: (a) Staffed beds do not include bassinets.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-12: Four of the eight Delaware hospital systems offered all three acute care inpatient bed types.

Staffed Acute Care Beds by Hospital 1997

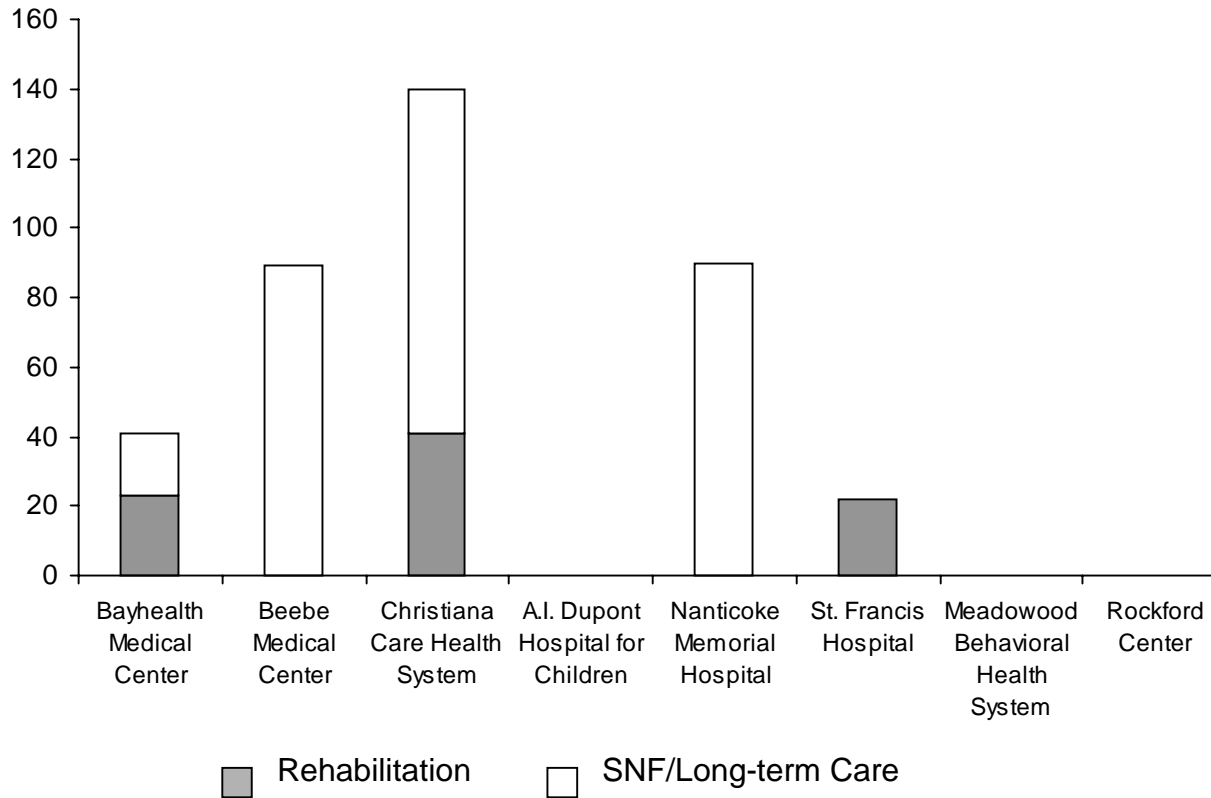


Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-13: Three of the eight Delaware hospital systems offered staffed rehabilitation beds, and four of the eight offered staffed skilled nursing facility/long-term care beds.

Staffed Post-acute Care Beds by Hospital 1997

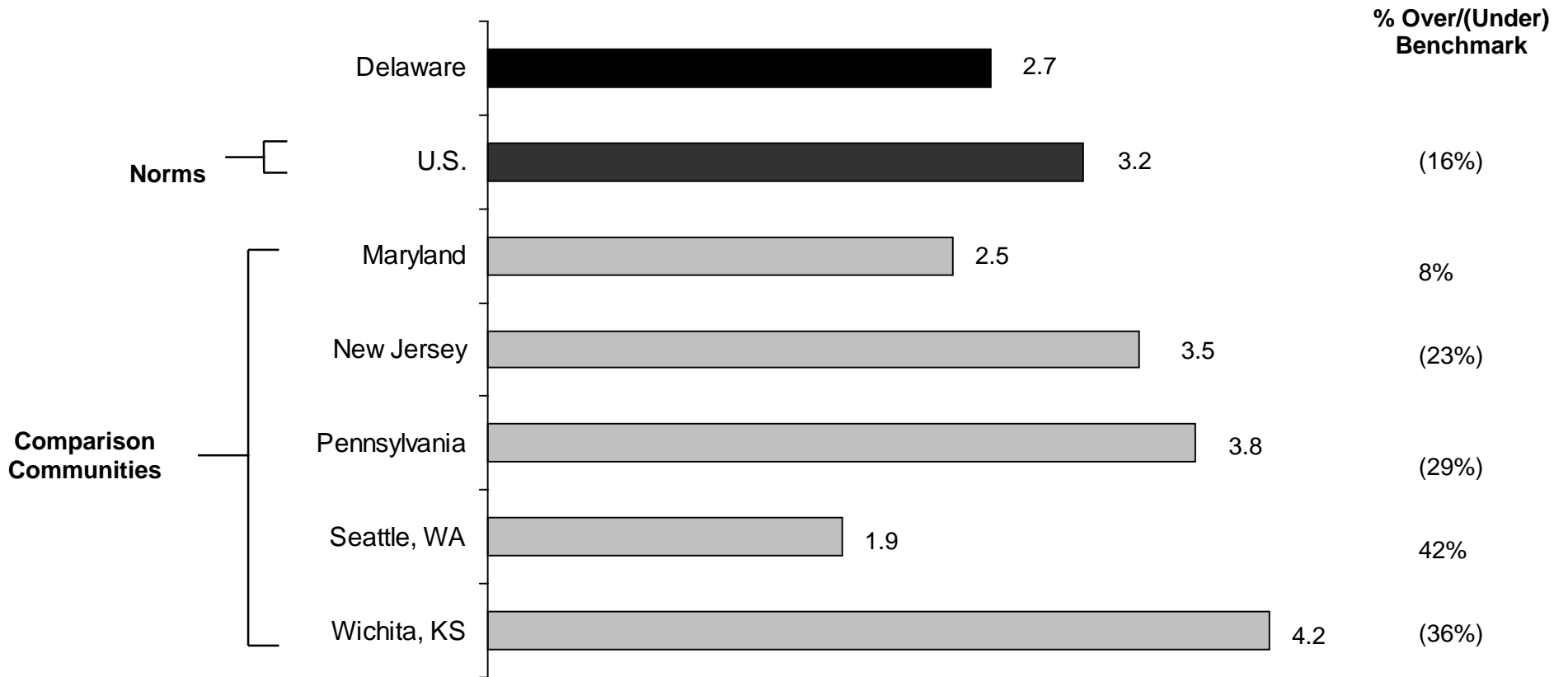


Source: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-14: Delaware had a lower staffed bed-to-population ratio than the U.S. and most comparison states.

Total Staffed Beds per 1,000 Persons 1997

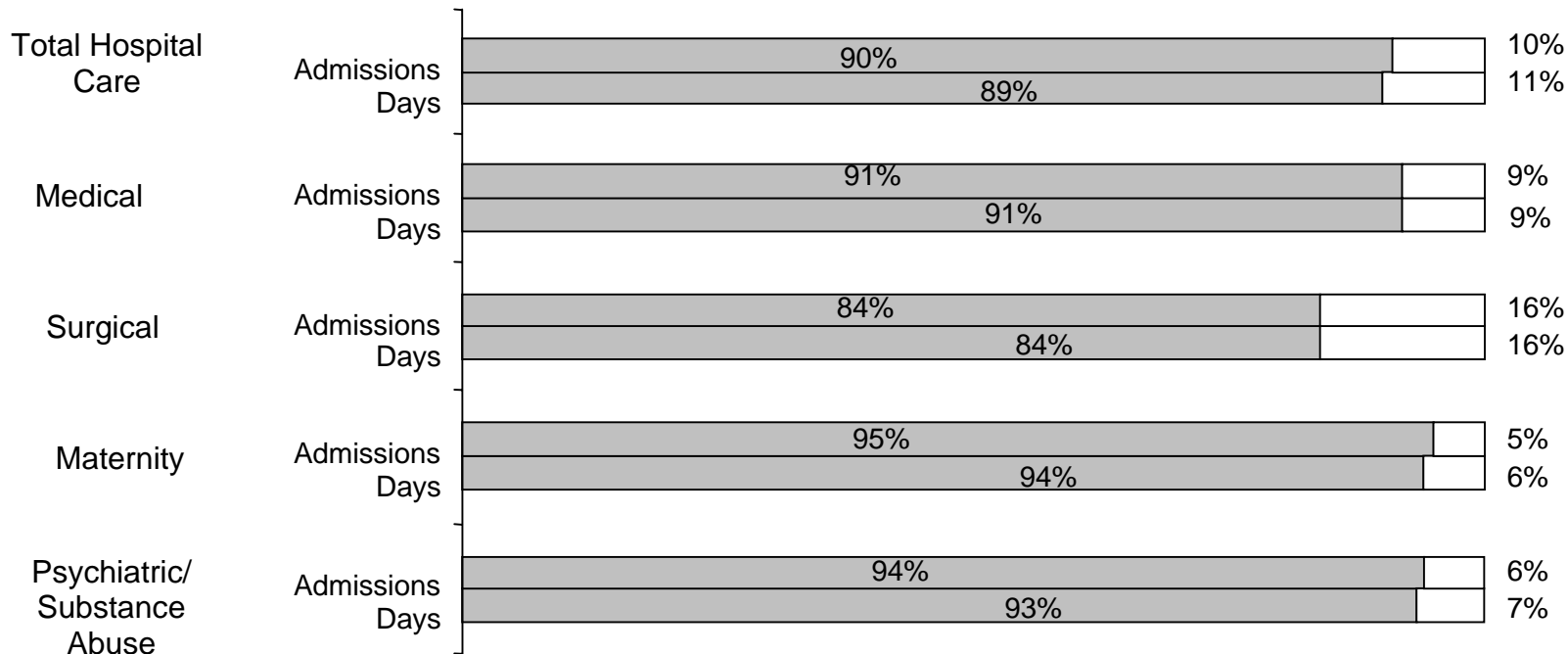
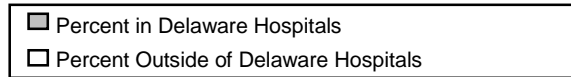


Sources: 1) 1997 data, The Lewin Group 1999 Hospital Survey and conversations with hospital representatives; based on 1997 data from the AHA Annual Hospital Survey; 2-6) AHA *Hospital Statistics* 1999.
 Note: (a) Delaware population = 735,143.
 (b) Data for all comparisons and norms includes beds from short-term, general and non-federal community hospitals. Does not include VA, federal and state mental health facilities.
 (c) Delaware data includes acute care beds from all area hospitals. Does not include: SNF, long-term care, rehabilitation and bassinets.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-15: Ninety percent of admissions and 89 percent of hospital days received by Delaware residents were provided by Delaware hospitals. Delaware residents received the most out-of-area inpatient services for surgical care.

Delaware Area Residents' Inpatient Migration, Admissions and Days



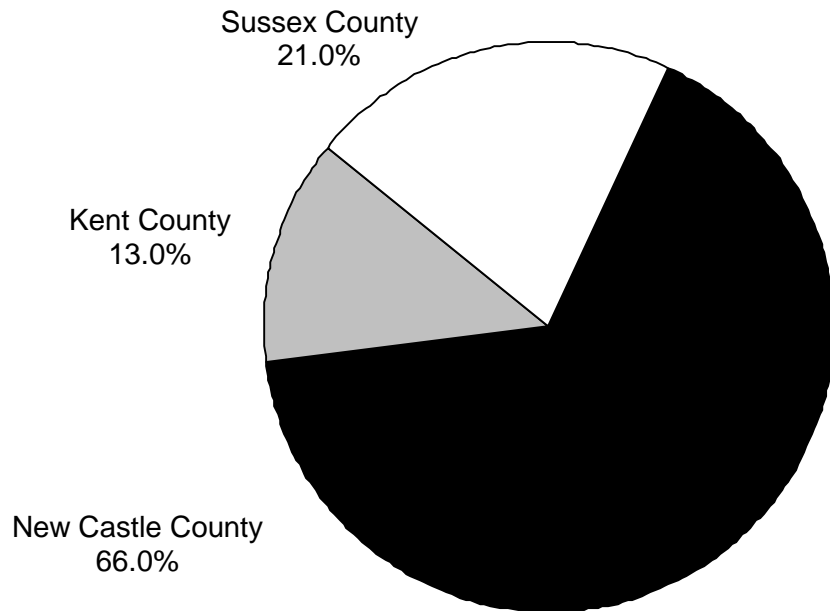
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-16: Approximately 90 percent of Delaware residents remained in the state for inpatient care, with two-thirds of residents receiving in-area care from New Castle County hospitals. Fifty-five percent of out-migration went to Maryland, with Wicomico County, MD providing the most inpatient care to Delaware residents.

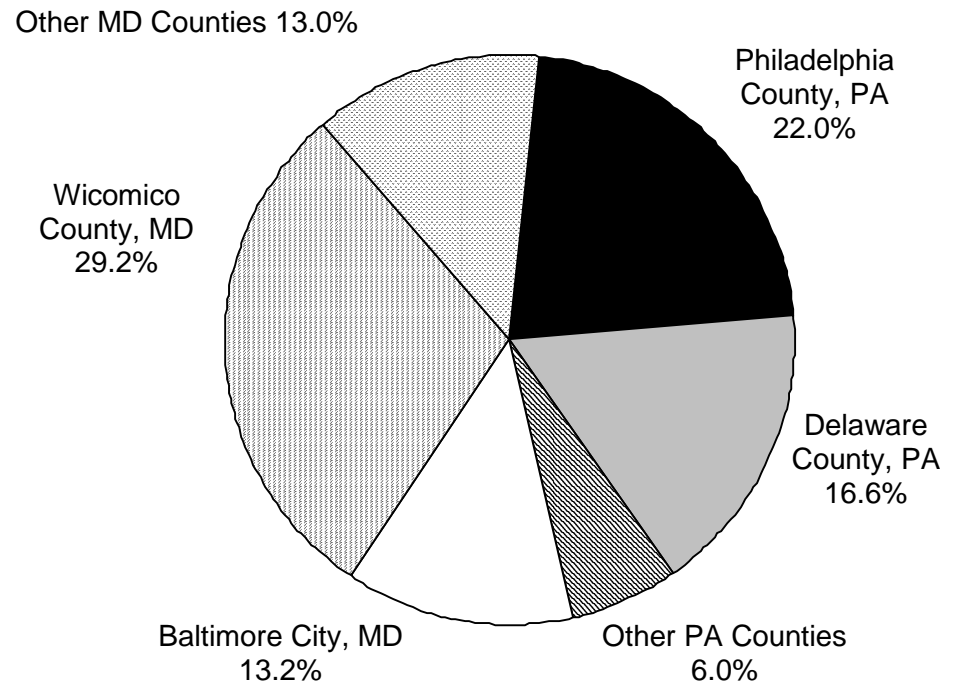
Percent of Admissions to Selected Counties Total Admissions 1997

In-area Admissions



Total = 81,898
90% of Total Admissions

Out-of-area Admissions



Total = 8,906
10% of Total Admissions

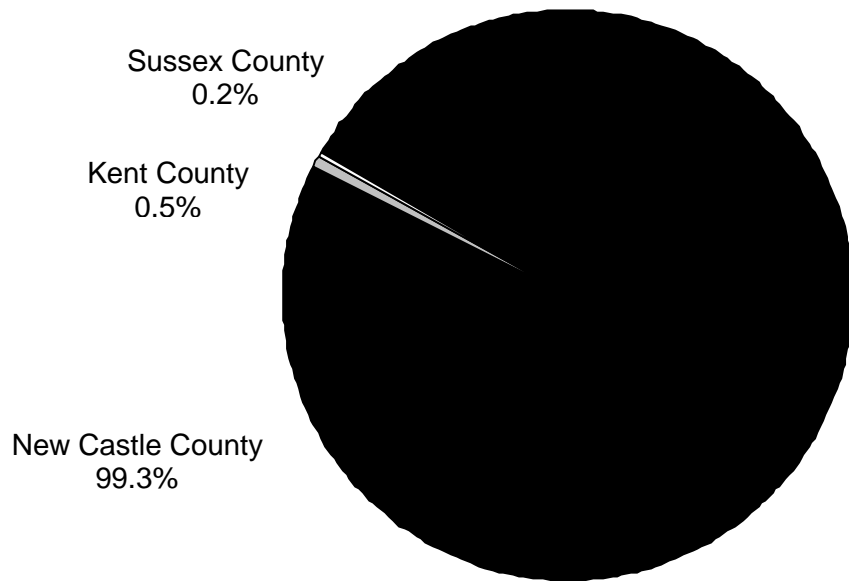
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-17: Most New Castle County residents stayed in Delaware for inpatient care, 99 percent of which was delivered in New Castle County hospitals. Of New Castle County residents leaving the state for inpatient services, almost 69 percent received care in Philadelphia or Delaware County, PA.

Percent of Admissions to Selected Counties New Castle County^(a) 1997

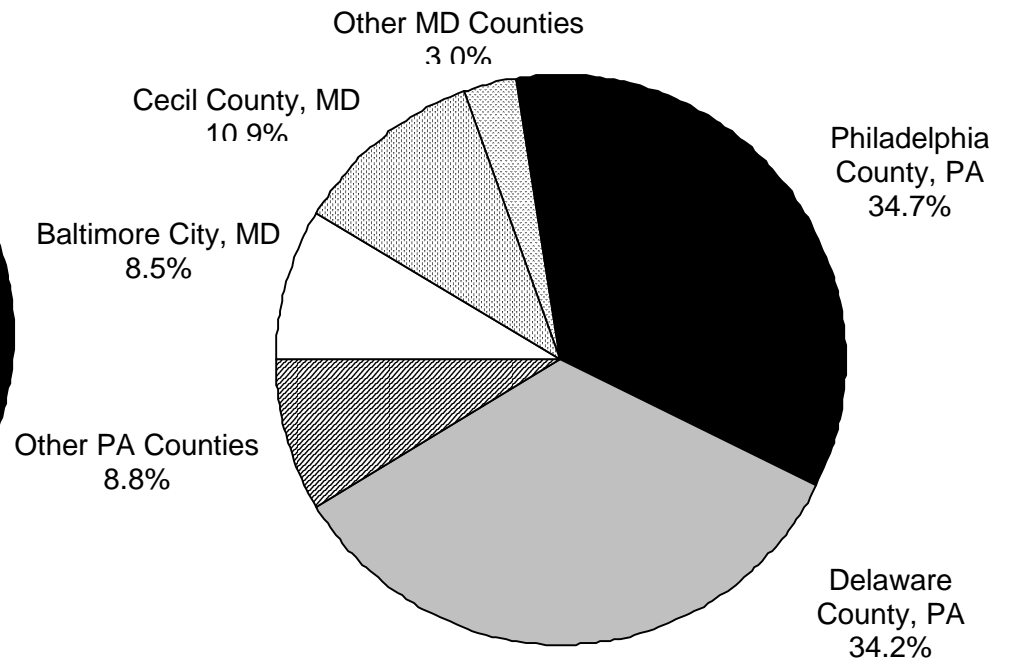
In-area Admissions



Total = 51,870

93% of New Castle County Residents' Admissions

Out-of-area Admissions



Total = 3,689

7% of New Castle County Residents' Admissions

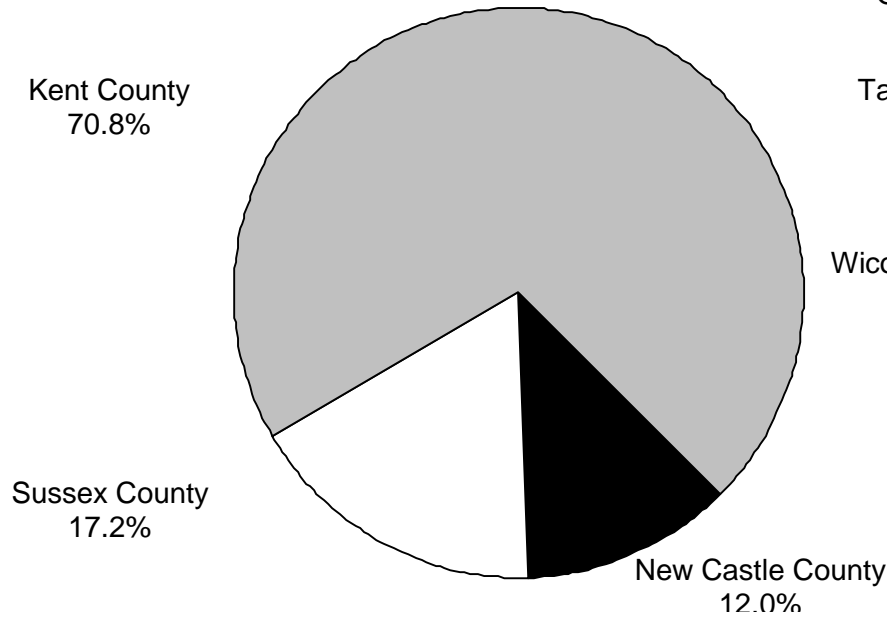
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.
 Note: (a) The total number of admissions of New Castle County residents to out-of-area hospitals is an underestimate, as it does not include the total number of admissions to Pennsylvania hospitals. Confidentiality concerns limit the data released by Pennsylvania for some admissions to labeling by state, and not county, of the patient's residence. Hence, while these admissions are included, they are not included on the migration by county exhibits.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-18: Ninety-five percent of Kent County residents in need of inpatient services received them from Delaware hospitals, with a majority of Kent County residents staying in the county for care. Of the five percent of residents receiving care outside of the state, most went to Philadelphia County, PA (30.7 percent) or Baltimore City, MD (30.4 percent).

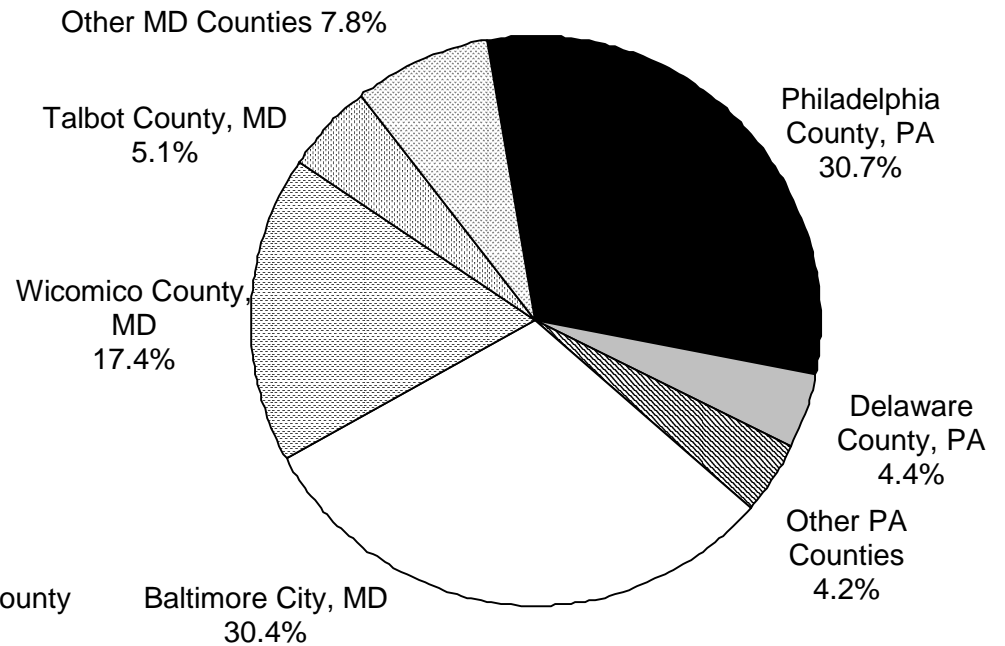
Percent of Admissions to Selected Counties Kent County^(a) 1997

In-area Admissions



Total = 13,654
95% of Kent County Residents' Admissions

Out-of-area Admissions



Total = 707
5% of Kent County Residents' Admissions

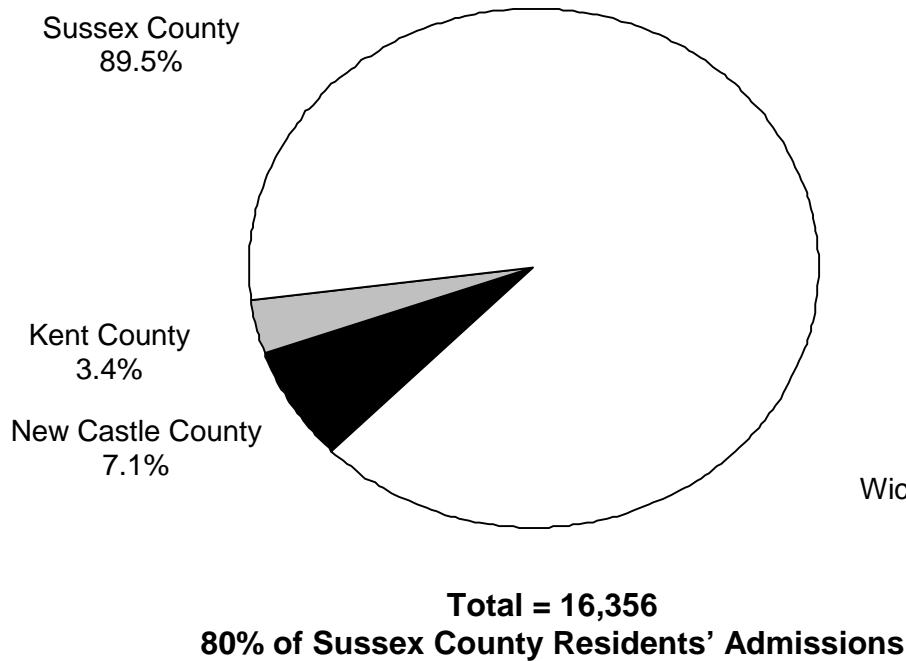
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.
 Note: (a) The total number of admissions of Kent County residents to out-of-area hospitals is an underestimate, as it does not include the total number of admissions to Pennsylvania hospitals. Confidentiality concerns limit the data released by Pennsylvania for some admissions to labeling by state, and not county, of the patient's residence. Hence, while these admissions are included, they are not included on the migration by county exhibits.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

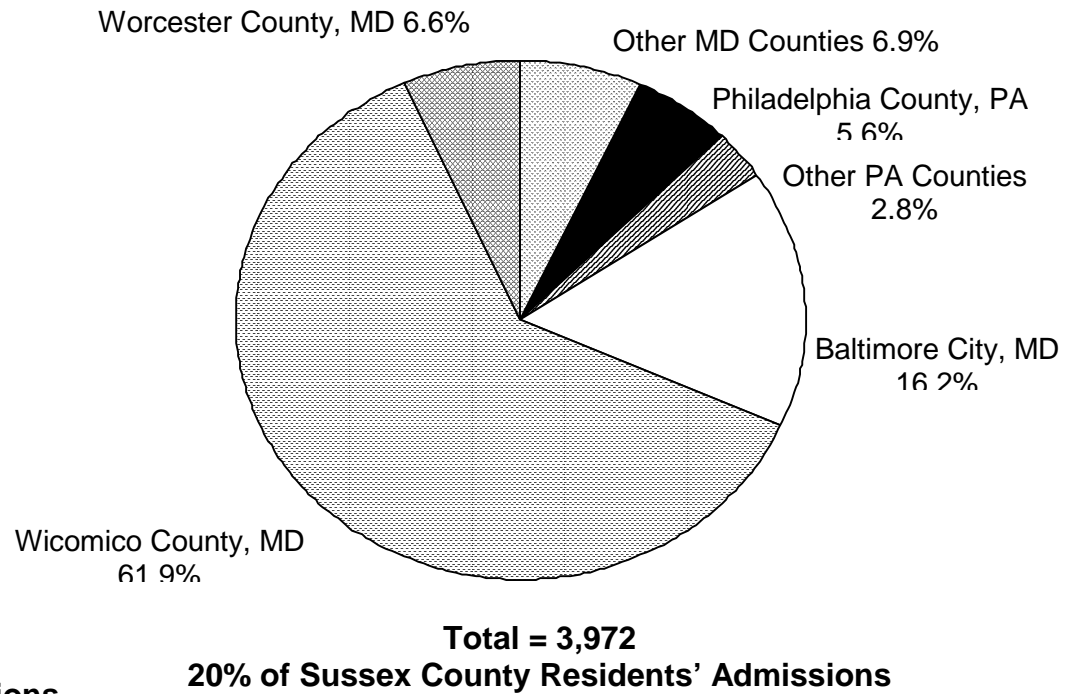
Exhibit II-A-19: Approximately 80 percent of inpatient services received by Sussex County residents was provided in Delaware hospitals, the smallest proportion of all three counties. Of the services provided in out-of-area hospitals, over 91 percent were provided by Maryland hospitals, almost 62 percent in Wicomico County, MD alone.

Percent of Admissions to Selected Counties Sussex County^(a) 1997

In-area Admissions



Out-of-area Admissions



Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.
 Note: (a) The total number of admissions of Sussex County residents to out-of-area hospitals is an underestimate, as it does not include the total number of admissions to Pennsylvania hospitals. Confidentiality concerns limit the data released by Pennsylvania for some admissions to labeling by state, and not county, of the patient's residence. Hence, while these admissions are included, they are not included on the migration by county exhibits.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-20: Delaware hospitals provided most of the inpatient services received by Delaware residents. Delaware residents left the state most often for surgical and medical services.

Inpatient Migration for Case Types 1997

Case Type	Resident Admissions (% of Total Admissions)	Percent Resident Admissions In Area	Percent Resident Admissions Out of Area
Medical	47,076 (55.6%)	91.1%	8.9%
Surgical	22,001 (26.0%)	83.4%	16.4%
Maternity	10,676 (12.7%)	94.9%	5.1%
Psychiatric/Substance Abuse	4,859 (5.7%)	94.4%	5.6%
Total Inpatient Care	84,612 (100.0%)	89.8%	10.2%

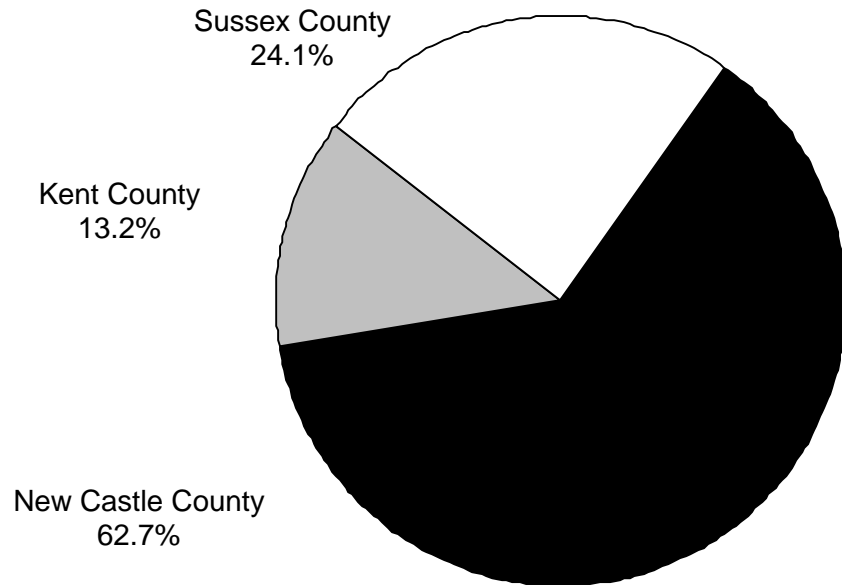
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-21: Delaware residents most often sought inpatient care for medical services in Delaware hospitals. Individual counties receiving the most out-migration included Wicomico County, MD and Philadelphia County, PA.

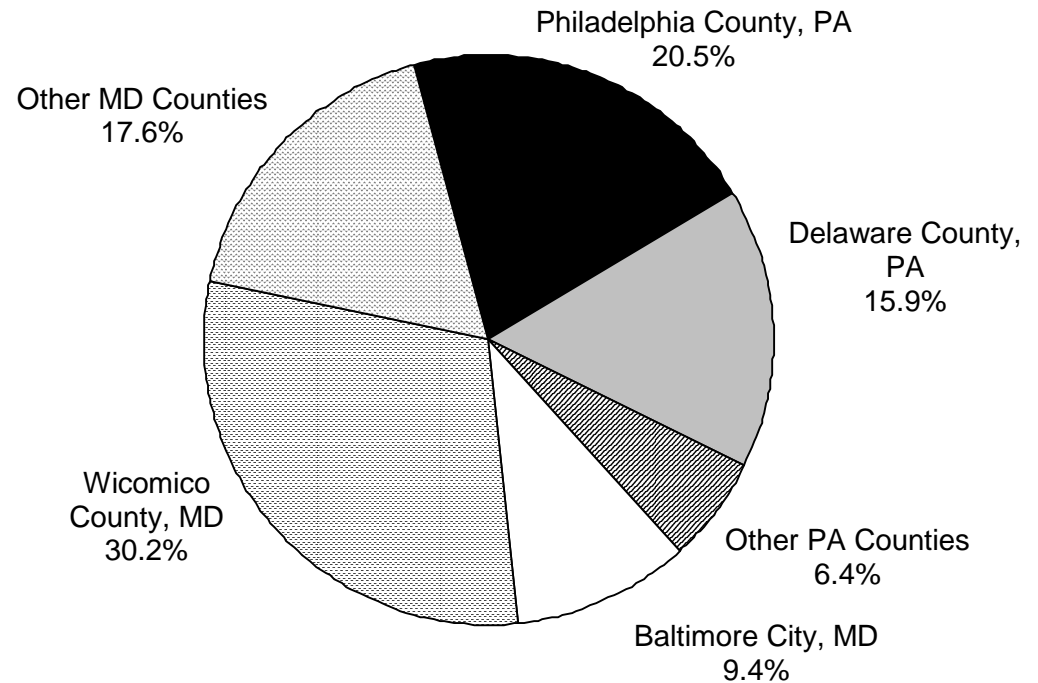
Percent of Admissions to Selected Counties Medical 1997

In-area Admissions



Total = 42,887
91% of All Medical

Out-of-area Admissions



Total = 4,189
9% of All Medical

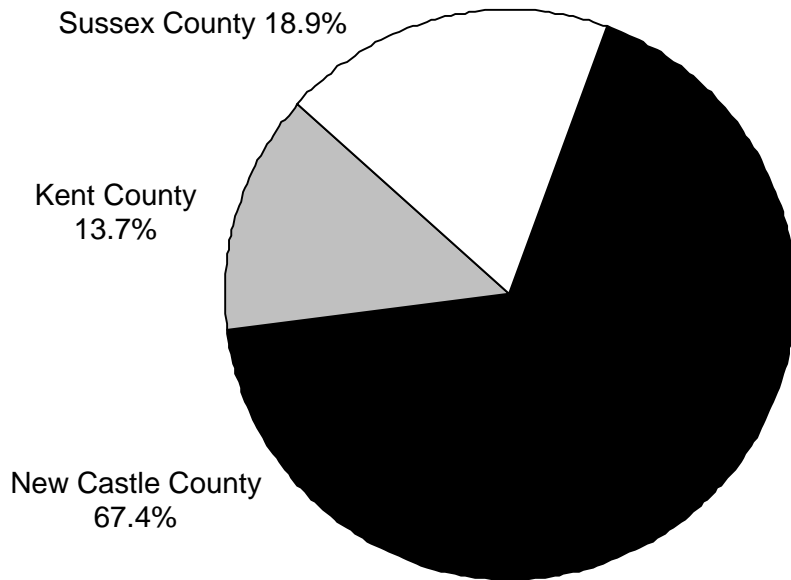
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-22: Delaware residents received inpatient care for surgical services in out-of-state hospitals more often than for any other case type. Fifty-eight percent of residents seeking out-of-state care went to Maryland, with Baltimore City receiving over 20 percent and Wicomico County almost 30 percent.

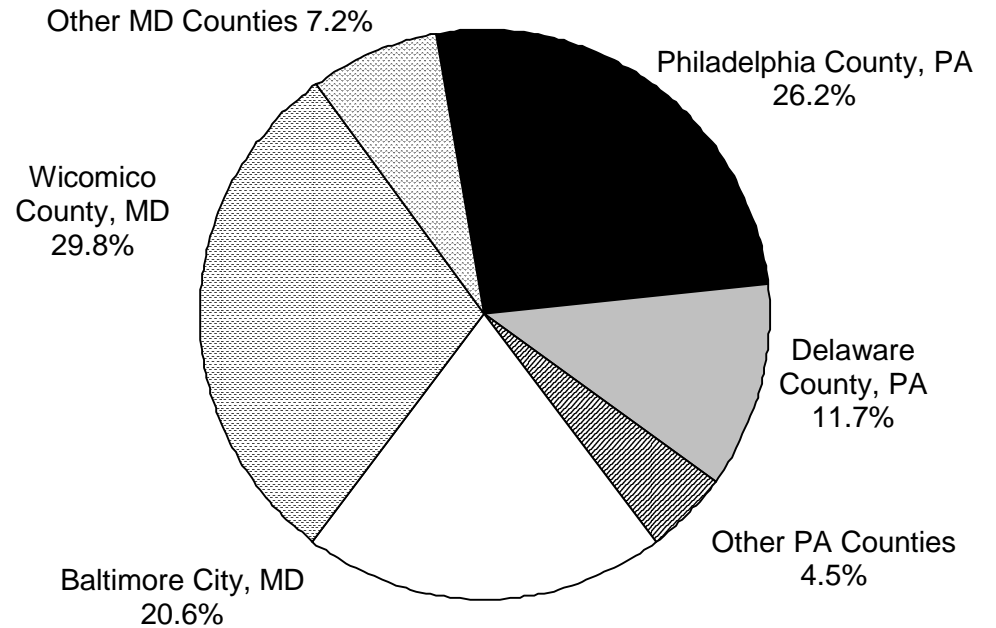
Percent of Admissions to Selected Counties Surgical 1997

In-area Admissions



**Total = 18,394
84% of All Surgical**

Out-of-area Admissions



**Total = 3,607
16% of All Surgical**

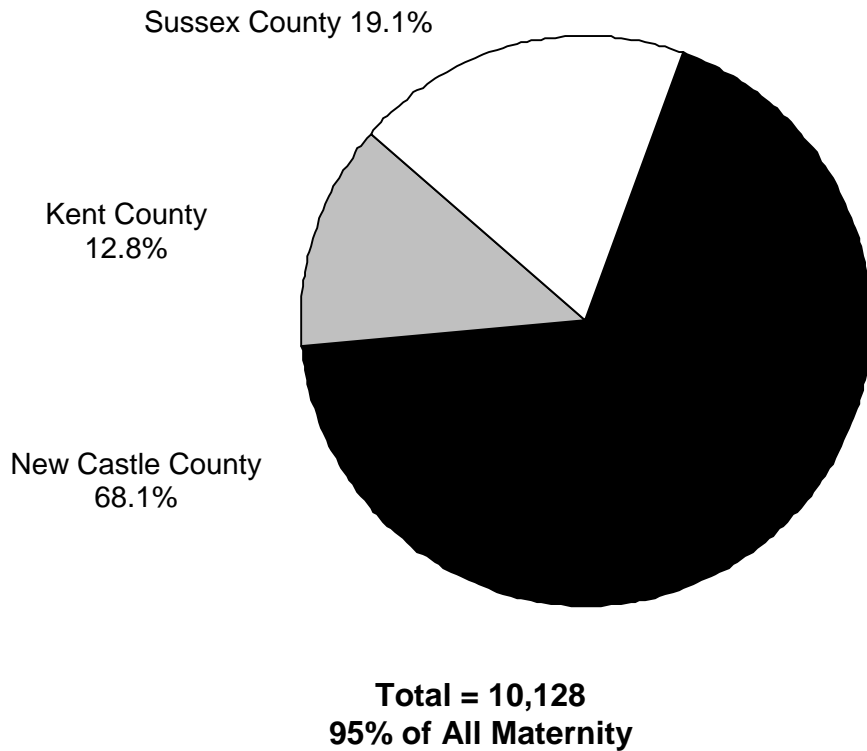
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

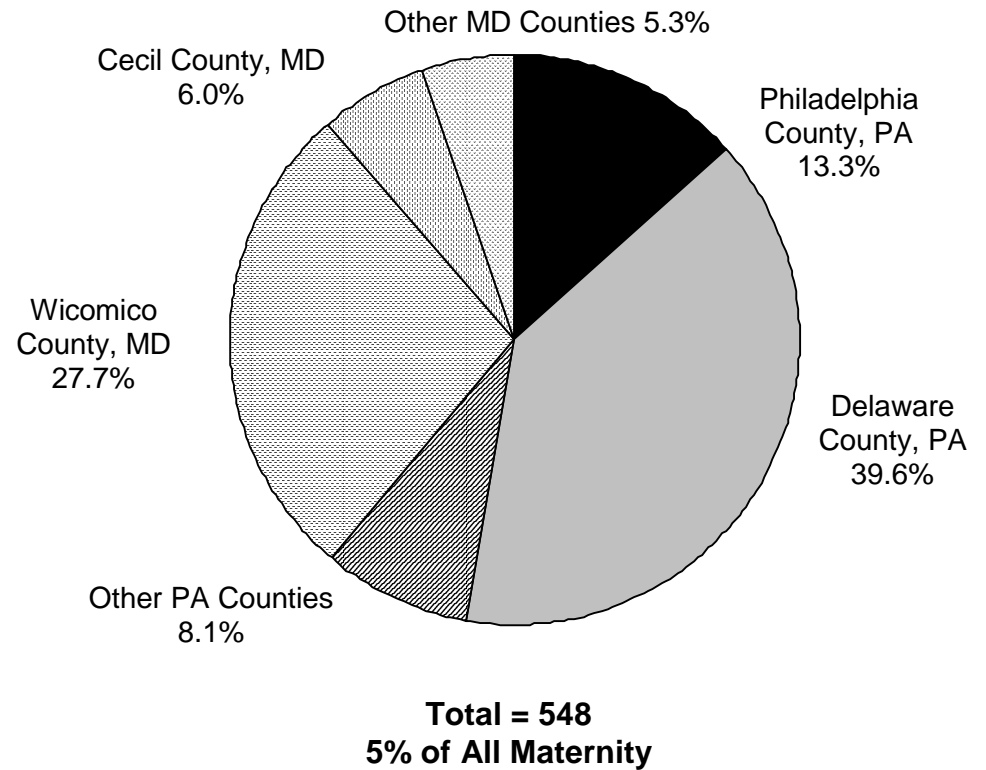
Exhibit II-A-23: Delaware residents received 95 percent of inpatient maternity-related services in Delaware hospitals, with New Castle County hospitals providing the majority of this care.

Percent of Admissions to Selected Counties Maternity 1997

In-area Admissions



Out-of-area Admissions



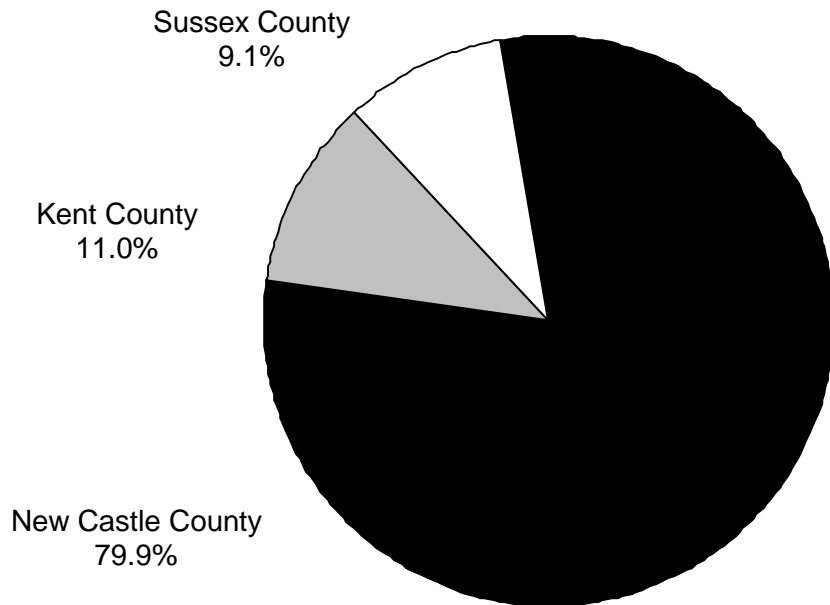
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-24: Delaware residents received approximately 94 percent of psychiatric/substance abuse services from Delaware hospitals, of which New Castle County provided almost 80 percent. Over 23 percent of out-of-area care was received in Philadelphia County, PA hospitals.

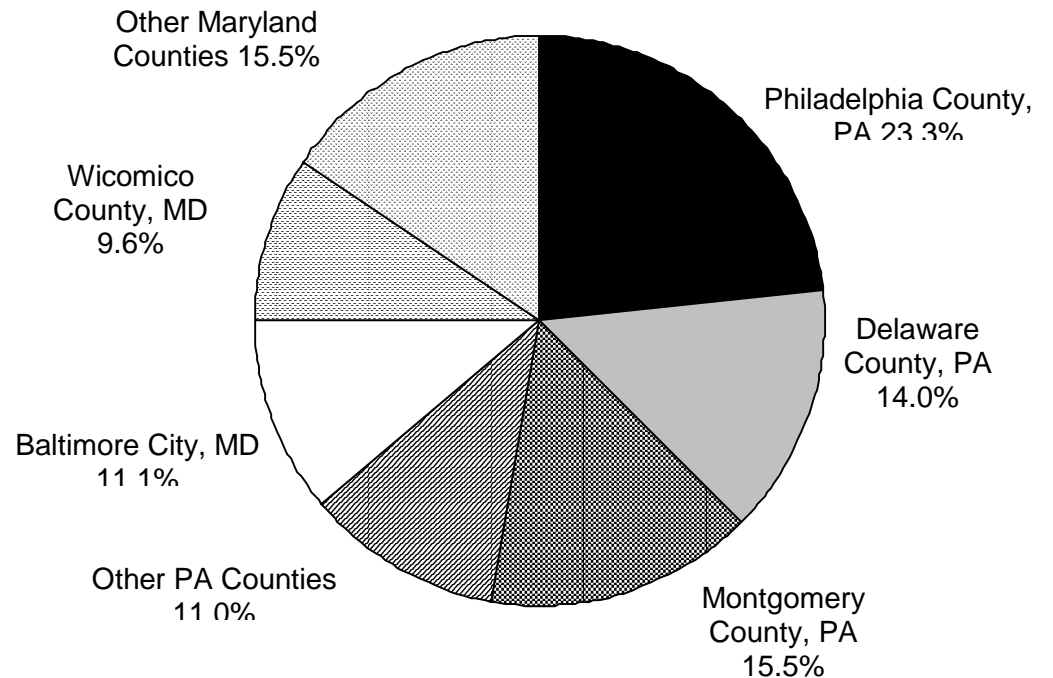
Percent of Admissions to Selected Counties Psychiatric/Substance Abuse 1997

In-area Admissions



Total = 4,588
94% of All Psychiatric/Substance Abuse

Out-of-area Admissions



Total = 271
6% of All Psychiatric/Substance Abuse

Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-25: Delaware hospitals provided most of the inpatient services received by Delaware residents for the eight high-volume MDCs. Delaware residents left the state the most for services related to the circulatory, nervous and musculoskeletal systems.

Inpatient Migration for Major Diagnostic Categories 1997

Major Diagnostic Category	Resident Admissions (% of Total Admissions)	Percent Resident Admissions In Area	Percent Resident Admissions Out of Area
Circulatory System	15,707 (17.3%)	85.8%	14.2%
Pregnancy and Childbirth	10,676 (11.8%)	94.9%	5.1%
Newborns and Neonates	9,128 (10.0%)	94.7%	5.3%
Respiratory System	8,536 (9.4%)	92.8%	7.2%
Digestive System	7,285 (8.0%)	92.8%	7.2%
Musculoskeletal System	6,786 (7.5%)	86.6%	13.4%
Nervous System	5,156 (5.8%)	86.5%	13.5%
Mental Diseases and Disorders	4,797 (5.3%)	95.8%	4.2%
All Other MDCs	22,733 (25.0%)	87.2%	12.8%
Total Inpatient Care	90,804 (100.0%)	90.2%	9.8%

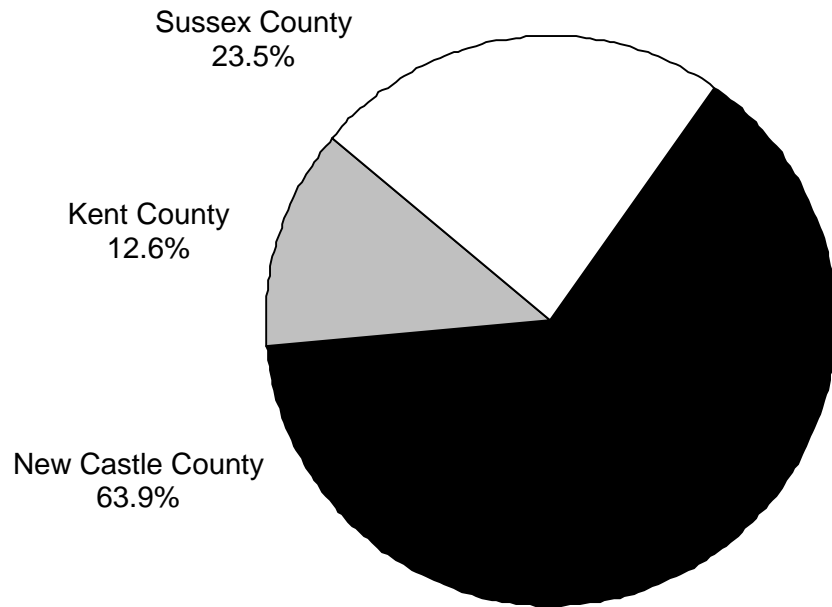
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-26: More than 14 percent of services provided to Delaware residents for circulatory system disorders were provided in out-of-state hospitals, the most for any other high-volume MDC. More than half of out-migration went to Wicomico County, MD.

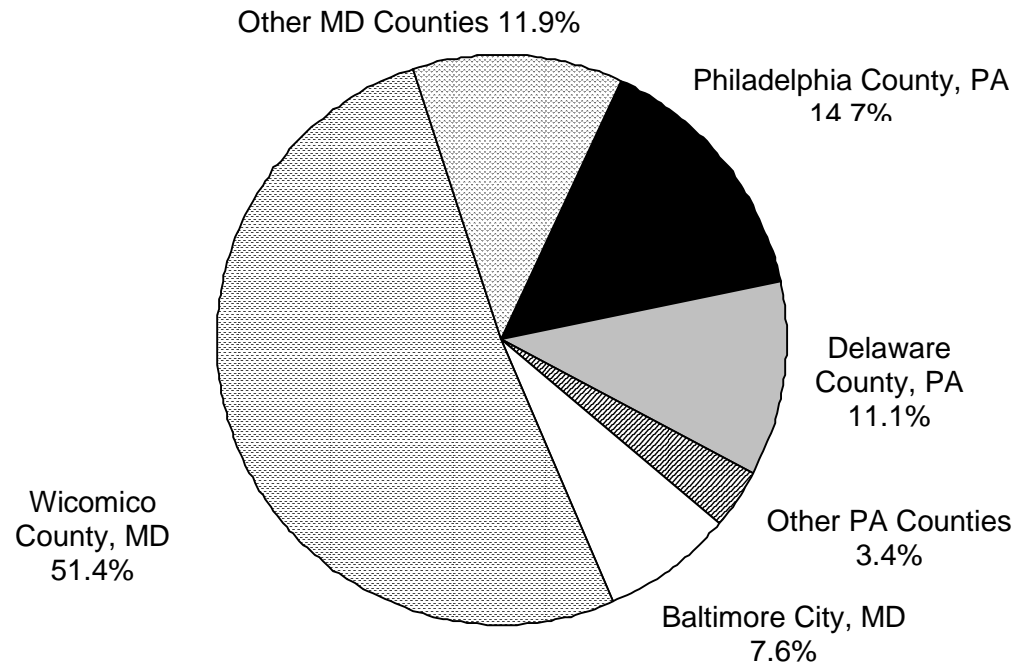
Percent of Admissions to Selected Counties Circulatory System Disorders 1997

In-area Admissions



Total = 13,475
86% of All Circulatory System Disorders

Out-of-area Admissions



Total = 2,232
14% of All Circulatory System Disorders

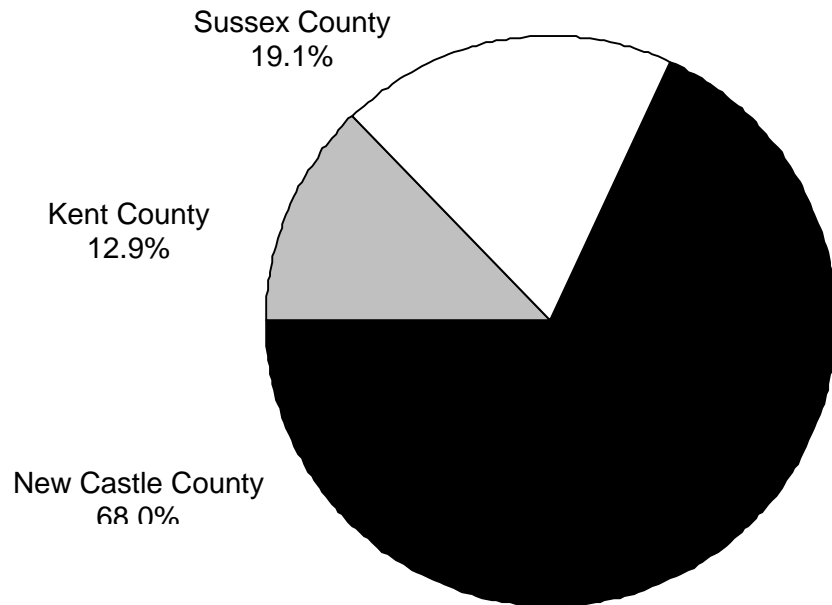
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-27: Almost 95 percent of all pregnancy and childbirth services provided to Delaware residents were received in Delaware hospitals. Out-migration went most often to Delaware County, PA.

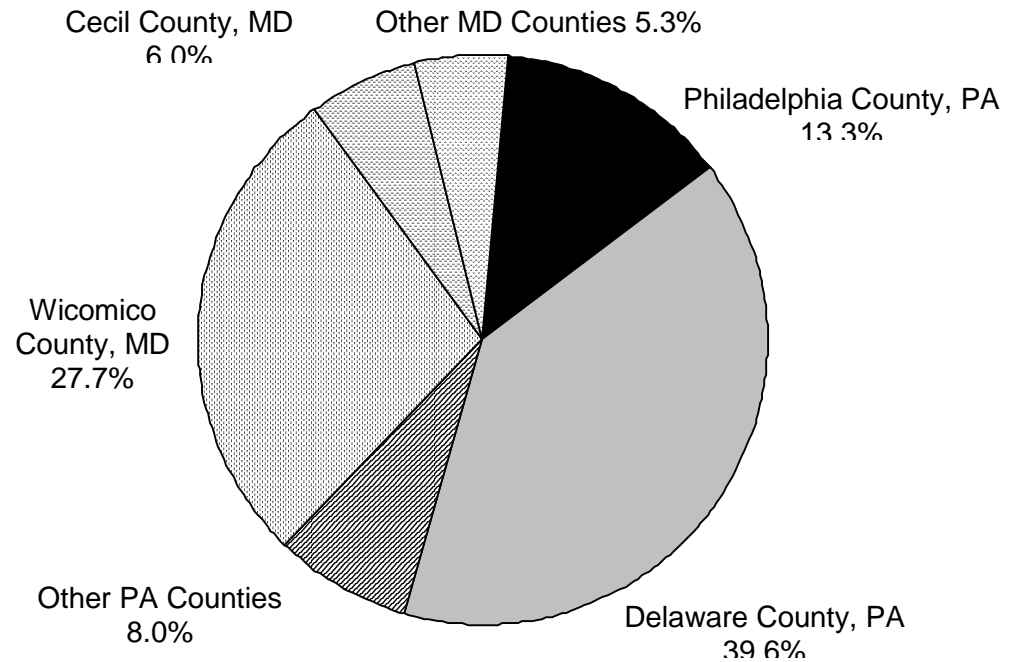
Percent of Admissions to Selected Counties Pregnancy and Childbirth 1997

In-area Admissions



Total = 10,128
95% of All Pregnancy and Childbirth

Out-of-area Admissions



Total = 548
5% of All Pregnancy and Childbirth

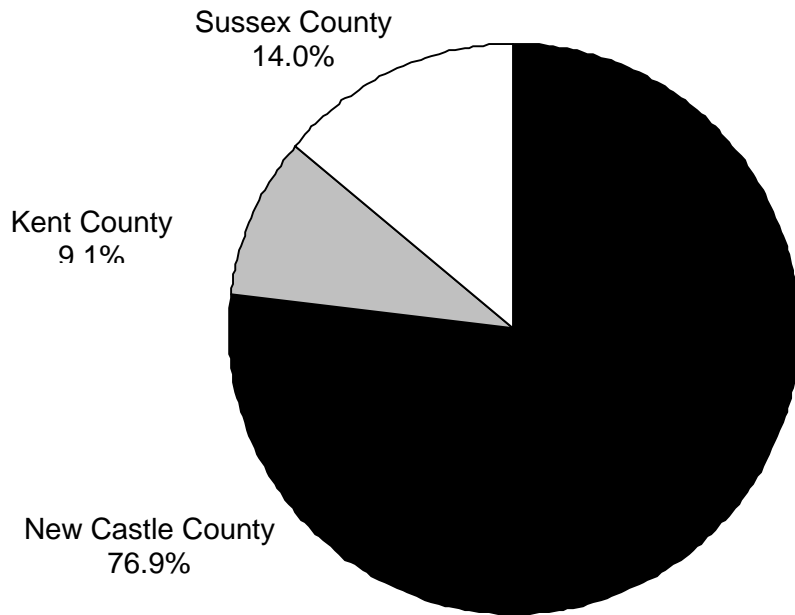
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-28: Similar to pregnancy and childbirth services, a large majority of newborn and neonate services were provided in Delaware hospitals. Over 40 percent of out-migration went to Delaware County, PA.

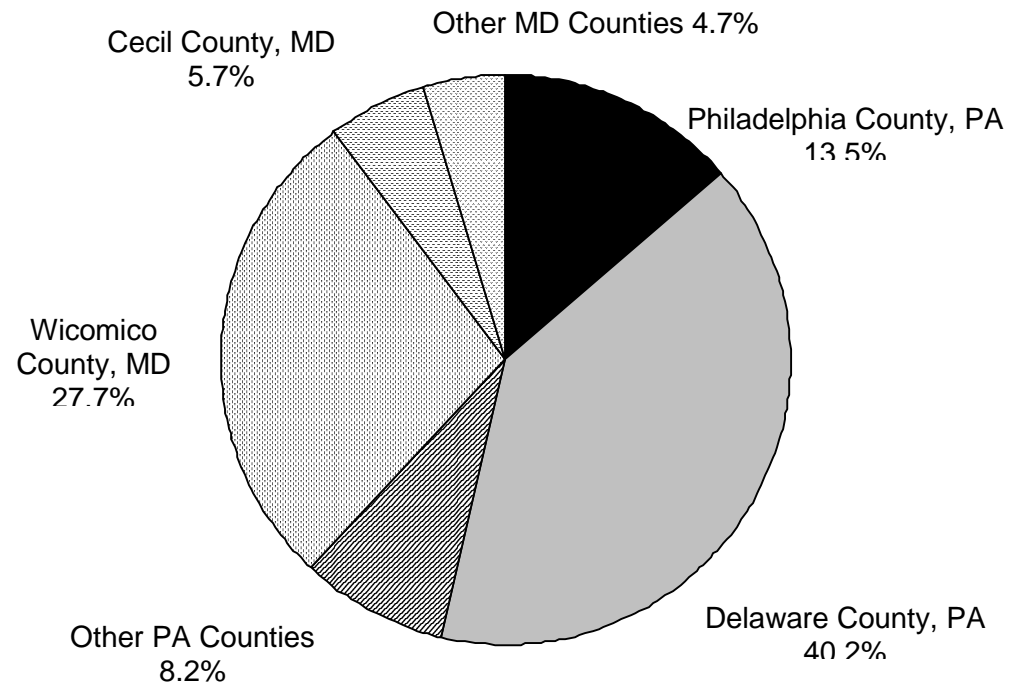
Percent of Admissions to Selected Counties Newborns and Neonates 1997

In-area Admissions



Total = 8,640
95% of All Newborns and Neonates

Out-of-area Admissions



Total = 488
5% of All Newborns and Neonates

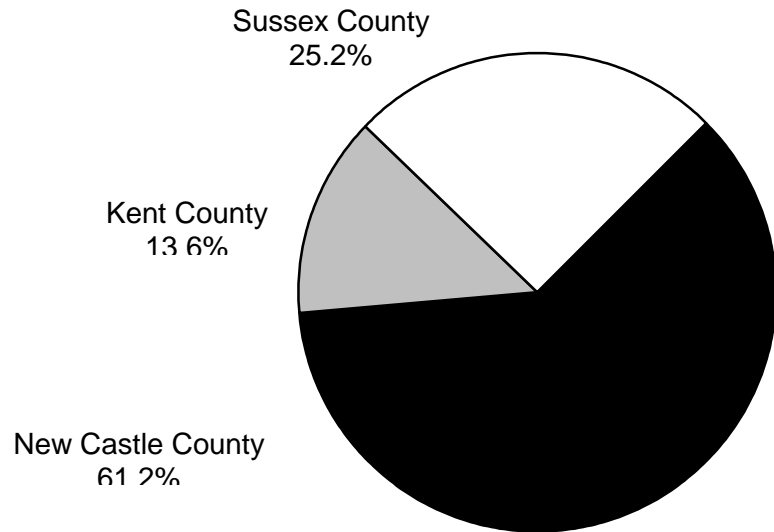
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-29: While most inpatient care for respiratory disorders remained in Delaware, almost one-third of out-migration went to Wicomico County, MD.

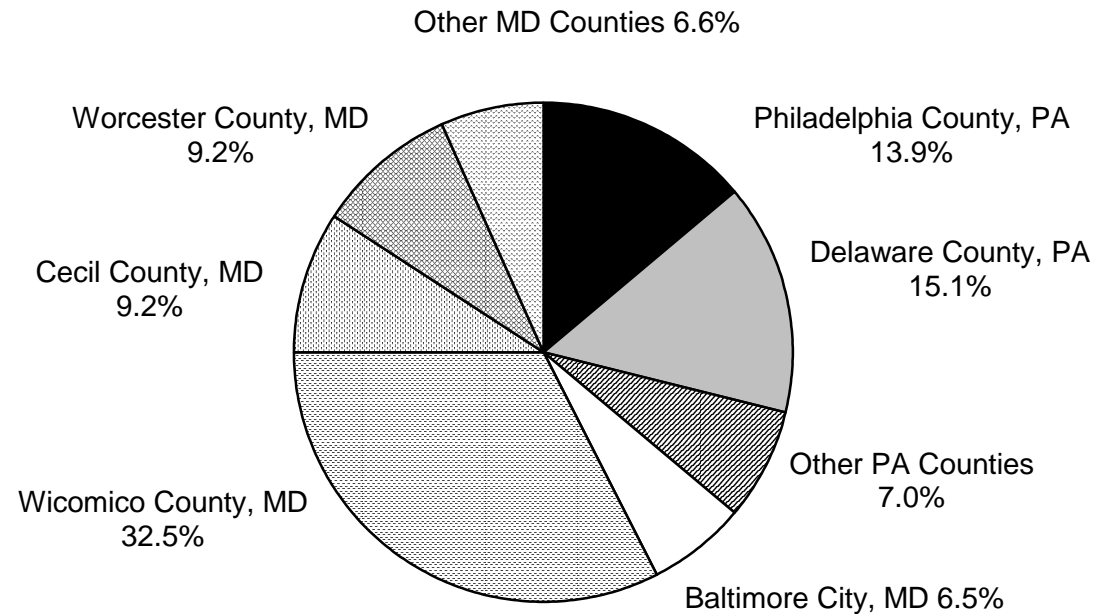
Percent of Admissions to Selected Counties Respiratory System Disorders 1997

In-area Admissions



Total = 7,926
93% of All Respiratory System Disorders

Out-of-area Admissions



Total = 610
7% of All Respiratory System Disorders

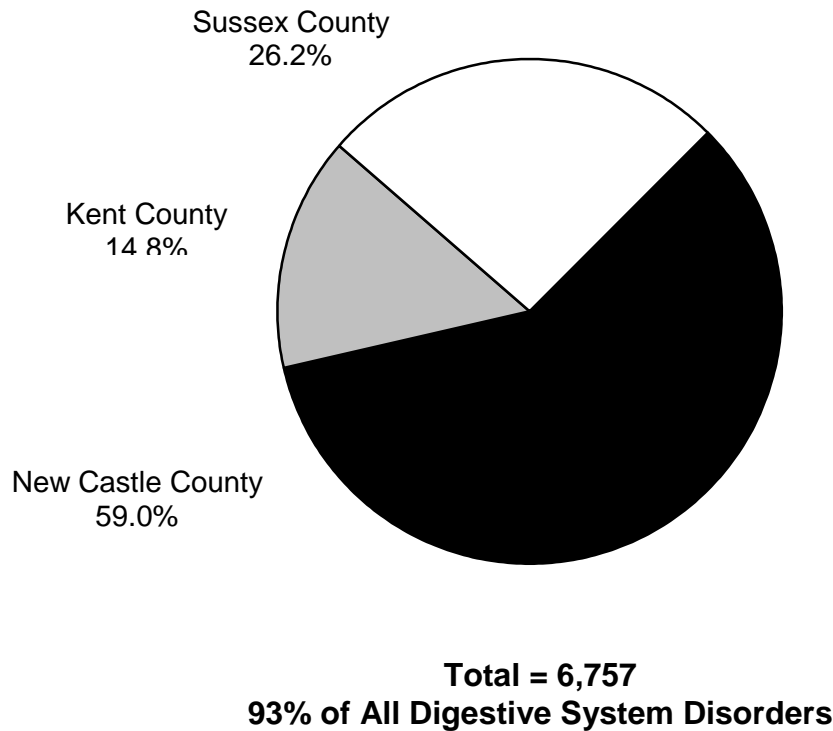
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

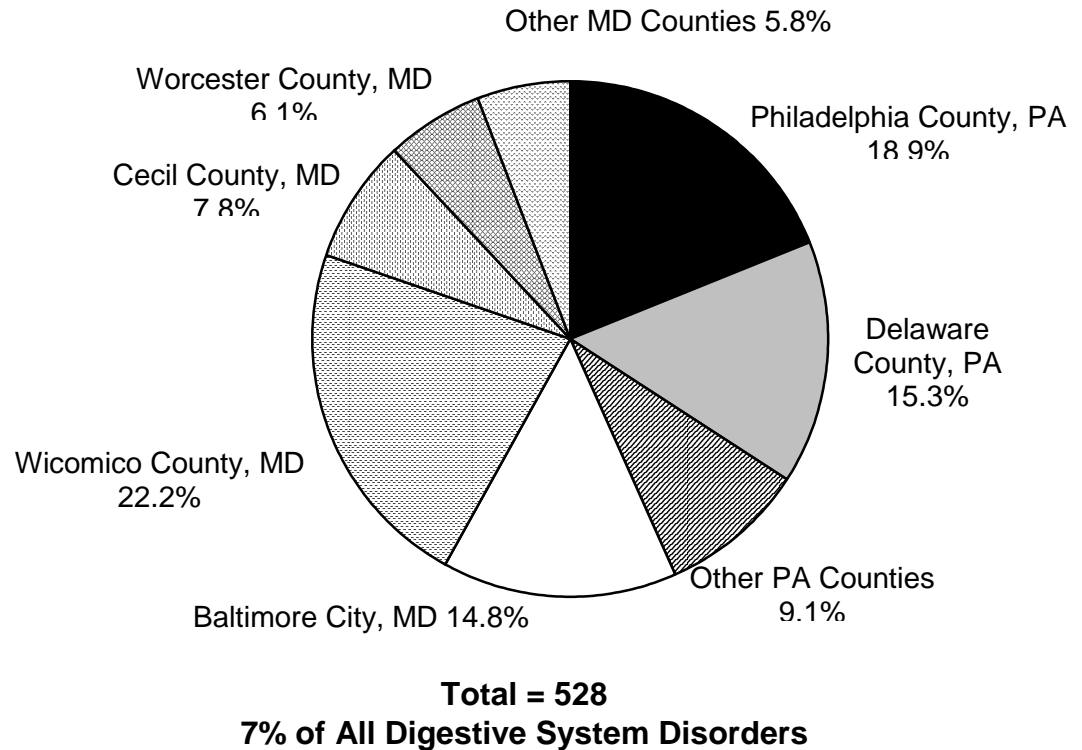
Exhibit II-A-30: Almost 93 percent of inpatient services for digestive disorders remained in Delaware hospitals. When Delaware residents left the state for care, the areas to which they most often migrated were Wicomico County, MD and Philadelphia County, PA.

Percent of Admissions to Selected Counties Digestive System Disorders 1997

In-area Admissions



Out-of-area Admissions



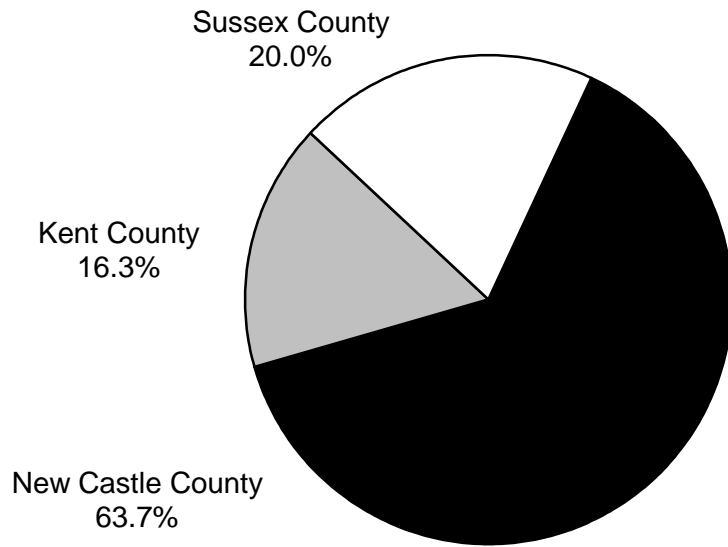
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-31: Eighty-seven percent of Delaware residents' inpatient services for musculoskeletal disorders was received in Delaware hospitals, with almost two-thirds of this care provided in New Castle County hospitals. Philadelphia County, PA provided over one-quarter of out-of-area musculoskeletal services.

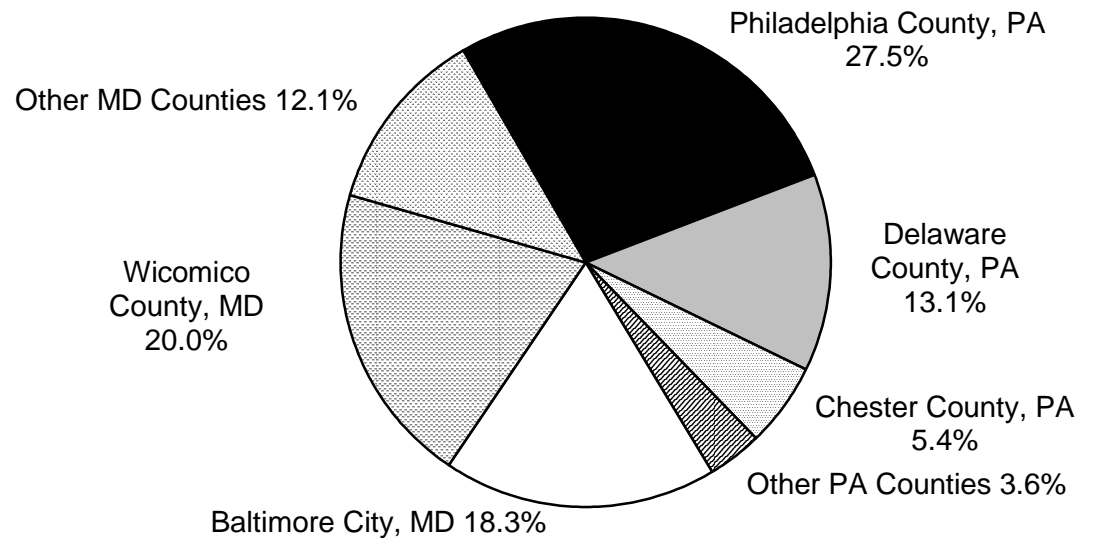
Percent of Admissions to Selected Counties Musculoskeletal System Disorders 1997

In-area Admissions



Total = 5,875
87% of All Musculoskeletal System Disorders

Out-of-area Admissions



Total = 911
13% of All Musculoskeletal System Disorders

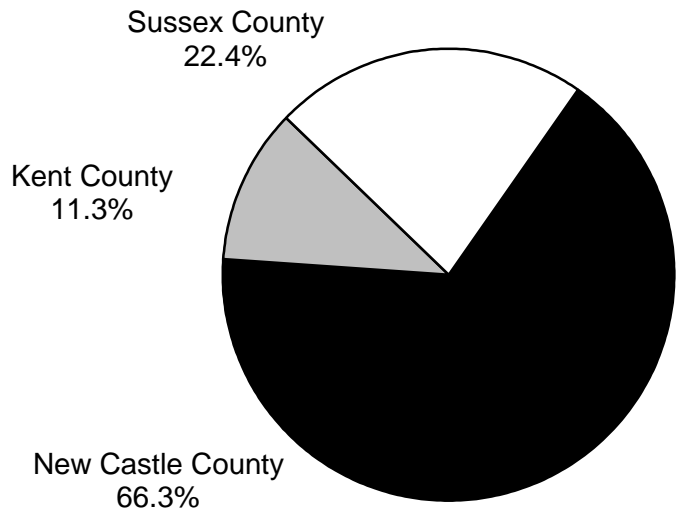
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-32: Fourteen percent of inpatient care for nervous system disorders was provided in non-Delaware hospitals, the second highest rate of out-migration among the eight high-volume MDCs. One-third of out-migration went to Philadelphia County, PA.

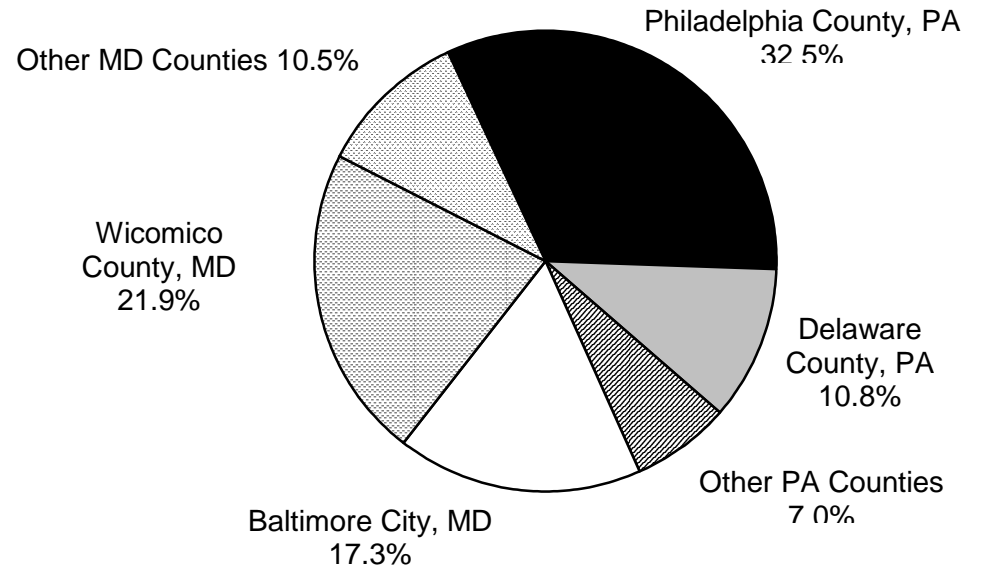
Percent of Admissions to Selected Counties Nervous System Disorders 1997

In-area Admissions



Total = 4,458
86% of All Nervous System Disorders

Out-of-area Admissions



Total = 698
14% of All Nervous System Disorders

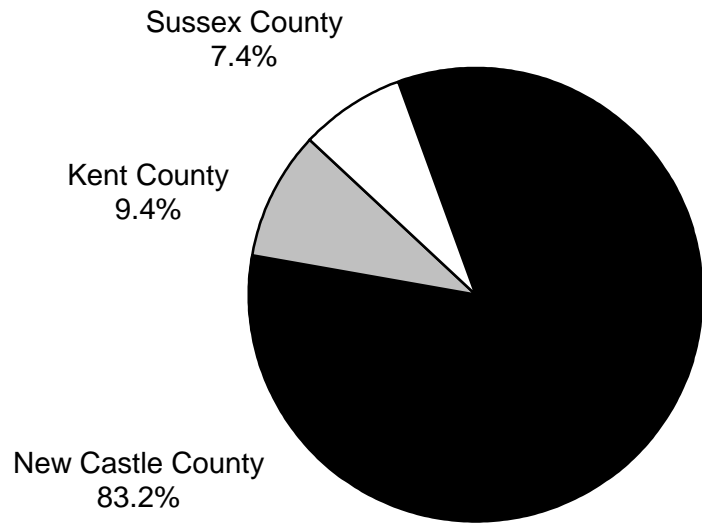
Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-33: Ninety-six percent of inpatient services for mental diseases and disorders were provided by Delaware hospitals, with New Castle County hospitals responsible for the majority of this care. Philadelphia County, PA provided over one-quarter of the out-of-area care.

Percent of Admissions to Selected Counties Mental Diseases and Disorders 1997

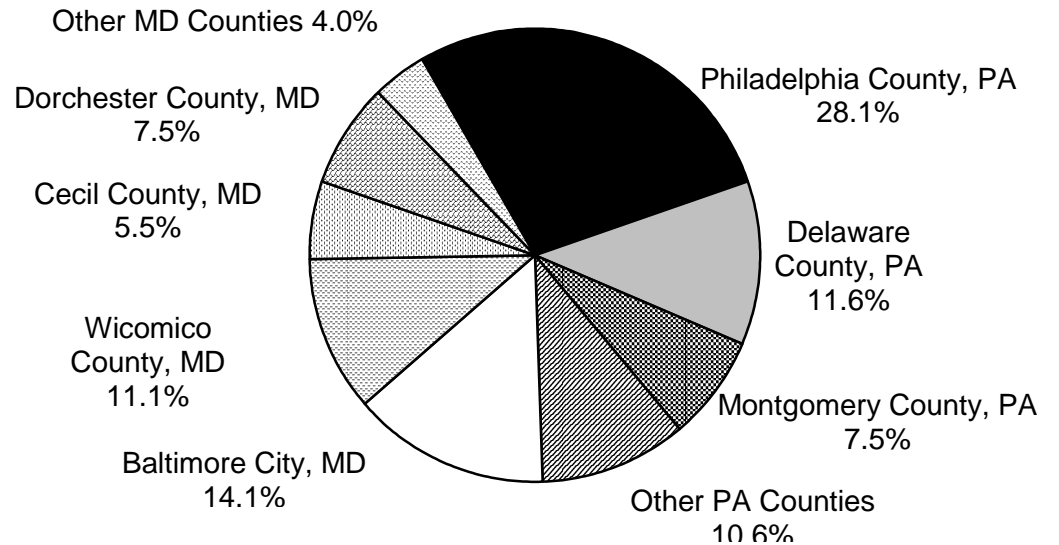
In-area Admissions



Total = 4,598

96% of All Mental Diseases and Disorders

Out-of-area Admissions



Total = 199

4% of All Mental Diseases and Disorders

Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group, Inc.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-34a:

Except for open heart surgery, which was available only at Christiana Care Health System, the same selected cardiovascular, intensive care, cancer and obstetrical services were offered in at least three hospitals.

Selected Services Provided by Delaware Hospitals 1997

Hospital	Cardiovascular Services			Intensive Care Services				Cancer Services			Obstetrical Services	
	Cardiac Care	Angioplasty	Open Heart Surgery	CICU	Med/Surg ICU	PICU	NICU	Oncology Care	Radiation Therapy	Mammography	OB Care	Birthing Room/LDR/LDRP
Bayhealth Medical Center												
Milford Memorial Campus					x			x		x	x	x
Kent General Campus	x			x	x		x	x	x	x	x	x
Beebe Medical Center	x	x			x			x	x	x	x	x
Christiana Care Health System	x	x	x	x	x	x	x	x	x	x	x	x
A.I. Dupont Hospital for Children						x	x	x				
Nanticoke Memorial Hospital	x	x			x			x		x	x	x
St. Francis Hospital	x			x	x	x	x		x	x	x	x
Meadowood Behavioral Health System												
Rockford Center												

Source: The Lewin Group 1999 Hospital Survey and conversations with hospital representatives. Based on 1998-1999 American Hospital Association Guide.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-34b:

Two to seven Delaware hospitals offered the same selected services for physical rehabilitation, alcohol/drug abuse, psychiatric and other services.

Selected Services Provided by Delaware Hospitals (cont.) 1997

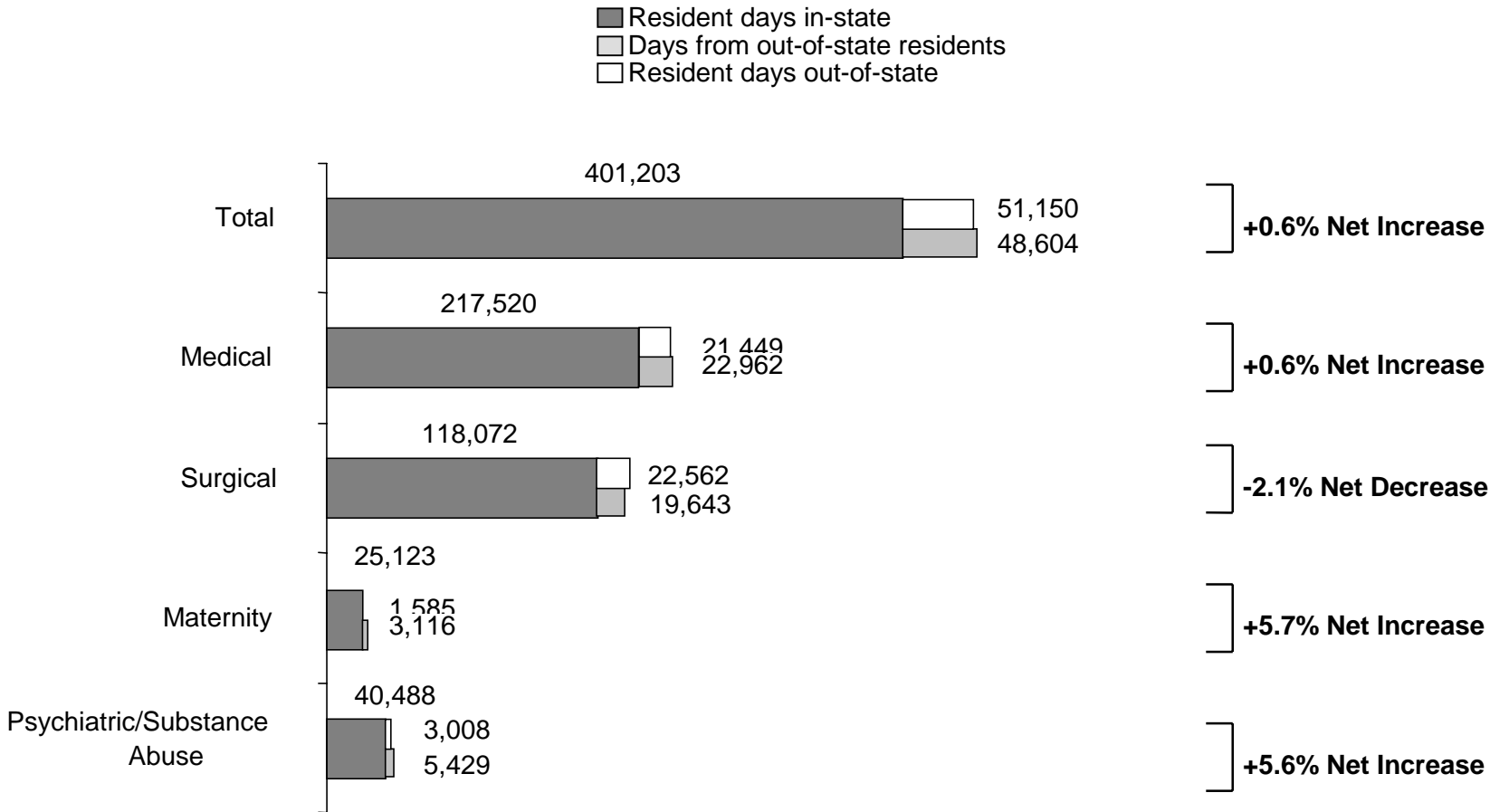
Hospital	Physical Rehabilitation		Alcohol/Drug Abuse		Psychiatric			Other			
	Inpatient	Outpatient	Inpatient	Outpatient	Acute Inpatient	Outpatient	ER	Certified Trauma Center	Transplant	HIV/AIDS	Urgent Care Center
Bayhealth Medical Center											
Milford Memorial Campus	x	x					x	x			
Kent General Campus	x	x	x	x	x	x	x	x		x	x
Beebe Medical Center	x	x					x	x		x	x
Christiana Care Health System	x	x			x	x	x	x	x	x	
A.I. Dupont Hospital for Children	x	x					x	x			
Nanticoke Memorial Hospital		x		x	x	x	x				
St. Francis Hospital	x	x		x	x	x			x	x	
Meadowood Behavioral Health System	x		x		x	x					
Rockford Center			x	x	x	x					

Source: The Lewin Group 1999 Hospital Survey and conversations with hospital representatives. Based on 1998-1999 American Hospital Association Guide.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-35: Use of inpatient care at Delaware hospitals by residents of other communities had little effect on the service volume of Delaware hospitals. Residents of other communities sought inpatient care at Delaware hospitals more than Delaware residents sought inpatient care at out-of-state hospitals, except for surgical care.

Impact of Inpatient Migration by Case Type 1997

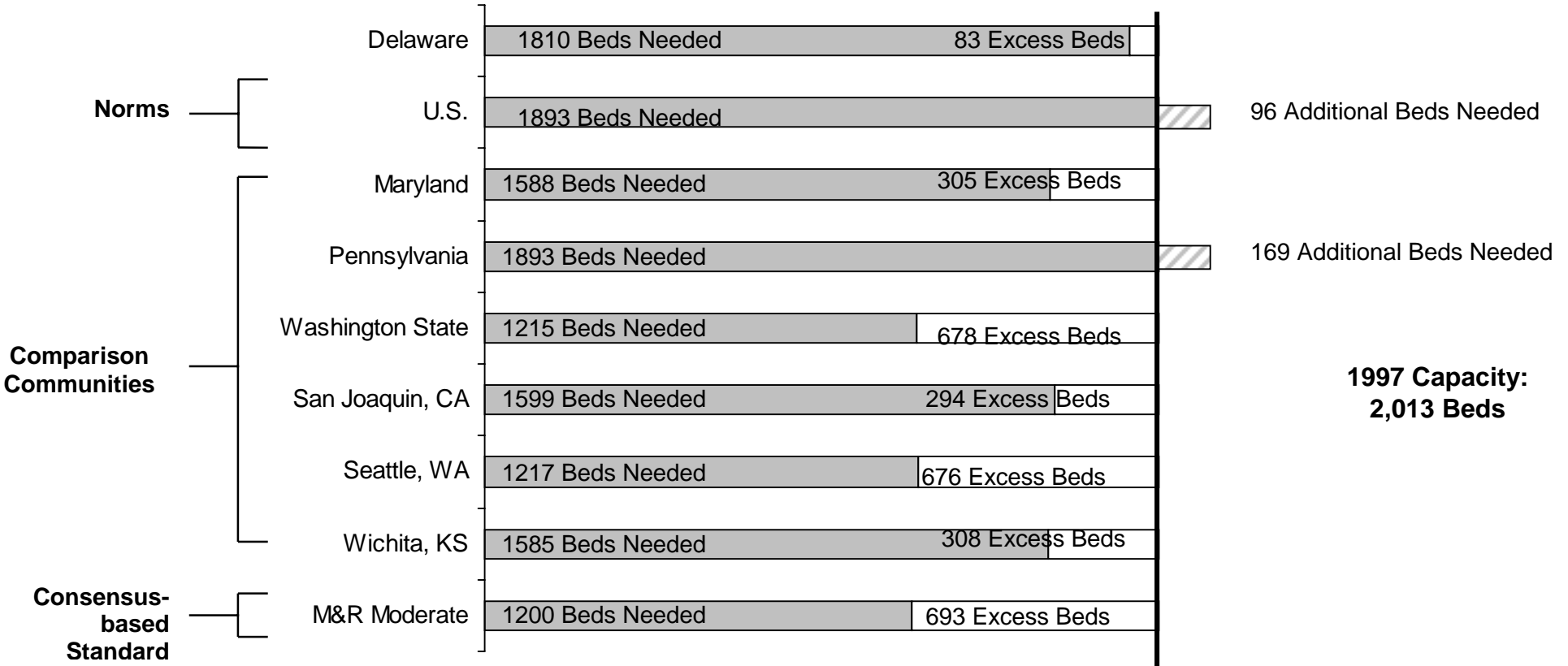


Source: 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.
 Note: Days do not include skilled nursing facilities, long-term care or well newborns.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-36: Delaware hospitals had an excess of 83 beds. Although state hospitals would require more beds if they used inpatient care like the U.S. or Pennsylvania, Delaware would have an excess of between 294 and 693 beds if Delaware residents used inpatient care like those in other benchmarks.

Migration-adjusted Demand versus Staffed Bed Supply: All Beds 1997



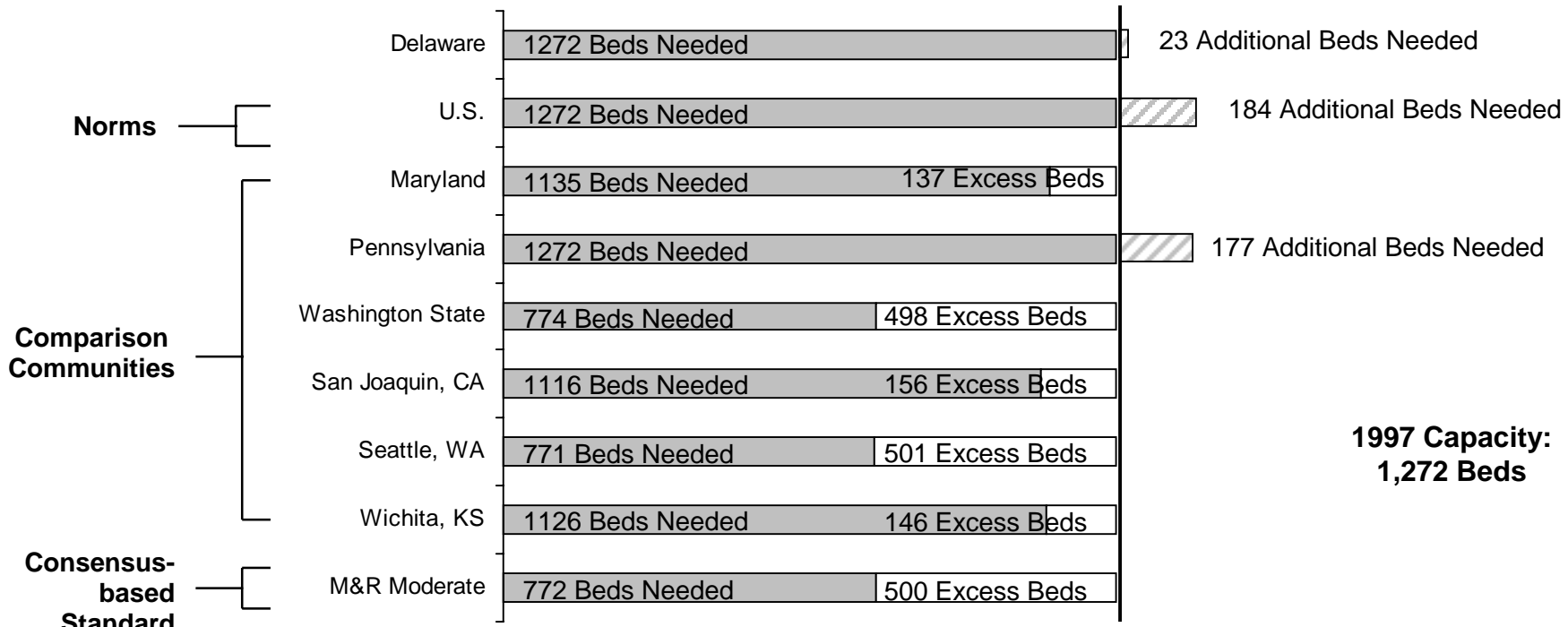
Sources: 1) 1997 data, The Lewin Group 1999 hospital survey; 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.; 2) 1995 data, National Hospital Discharge Survey; 3) 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 4) 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.; 5,7) 1997 data, Comprehensive Hospital Abstract Reporting System (CHARS) database; 6) 1997 California hospital discharge data, Office of Statewide Health Planning and Development (OSHPD); 8) 1997 data, Kansas Hospital Association; 9) 1997 data, Milliman & Robertson Healthcare Management Guidelines (Volume I: Inpatient and Surgical Care, updated December 1997).

Notes: (a) Underlying inpatient utilization estimates are adjusted to reflect the impact of migration into and out of the area. Bed capacity is based on number of staffed beds in Delaware. Bed need estimates for the total level analysis are based on a weighted average of the following optimal occupancy levels: 80 percent for medical/surgical beds, 70 percent for maternity beds and 95 percent for psychiatric/substance abuse beds. (b) Well newborn and SNF/Rehabilitation beds and utilization are not reflected in overall inpatient estimates. (c) Benchmark use rates are age/sex-adjusted to the Delaware population, with the following exception: M&R use rates are age-adjusted only (no gender-specific utilization data were available). Benchmark use rates are also case-mix adjusted to control for differences in types of hospital admissions

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-37: Delaware would require an additional 23 medical and surgical beds to meet its needs, at optimal rates. Although the state would require considerably more beds if it used inpatient care like the U.S. or Pennsylvania, it would have an excess of between 137 and 501 beds if Delaware residents used inpatient care like those of the other benchmarks.

Migration-adjusted Demand versus Staffed Bed Supply: Medical and Surgical Beds 1997



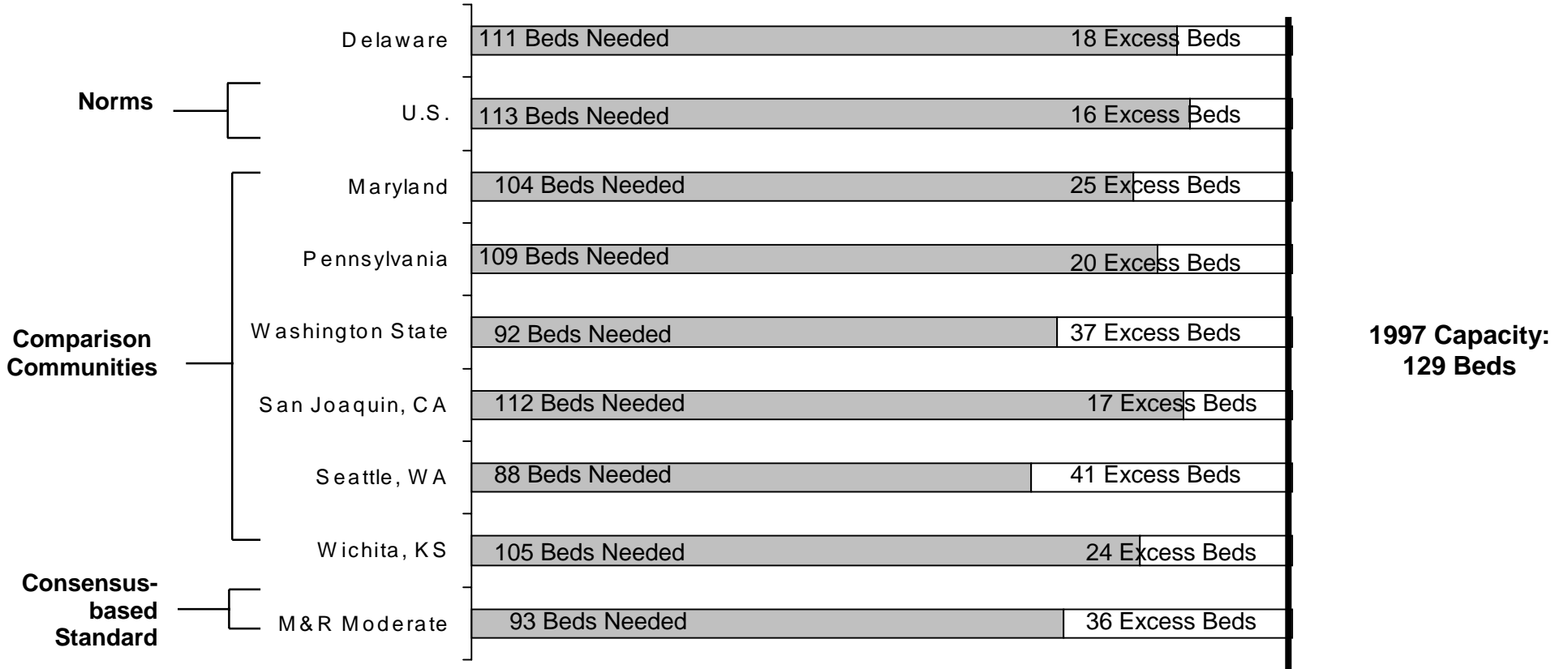
Sources: 1) 1997 data, The Lewin Group 1999 hospital survey; 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.; 2) 1995 data, National Hospital Discharge Survey; 3) 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 4) 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.; 5,7) 1997 data, Comprehensive Hospital Abstract Reporting System (CHARS) database; 6) 1997 California hospital discharge data, Office of Statewide Health Planning and Development (OSHPD); 8) 1997 data, Kansas Hospital Association; 9) 1997 data, Milliman & Robertson Healthcare Management Guidelines (Volume I: Inpatient and Surgical Care, updated December 1997).

Notes: (a) Underlying inpatient utilization estimates are adjusted to reflect the impact of migration into and out of the area. Bed capacity is based on number of staffed beds in Delaware. Bed need estimates assume an optimal hospital occupancy rate for medical/surgical beds of 80 percent. (b) Benchmark use rates are age/sex-adjusted to the Delaware population, with the following exception: M&R use rates are age-adjusted only (no gender-specific utilization data were available). Benchmark use rates are also case-mix adjusted to control for differences in types of hospital admissions.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-38: Adjusted for migration, nearly 14 percent of Delaware’s maternity beds were excess. Although the state would have slightly fewer excess beds if use rates mirrored those of the U.S., it would have between 20 and 41 excess beds if use rates mirrored the remaining benchmarks.

Migration-adjusted Demand versus Staffed Bed Supply: Maternity Beds 1997



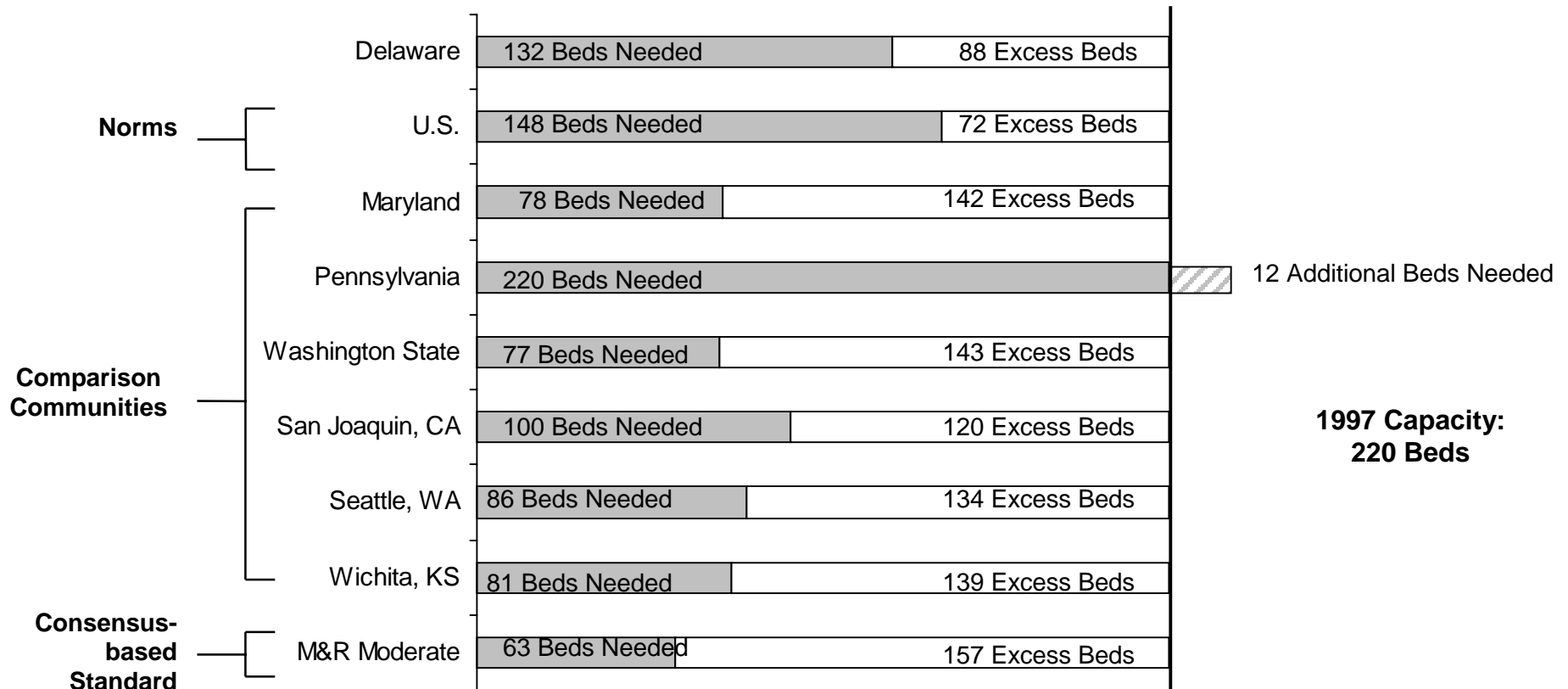
Sources: 1) 1997 data, The Lewin Group 1999 hospital survey; 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.; 2) 1995 data, National Hospital Discharge Survey; 3) 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 4) 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.; 5,7) 1997 data, Comprehensive Hospital Abstract Reporting System (CHARS) database; 6) 1997 California hospital discharge data, Office of Statewide Health Planning and Development (OSHPD); 8) 1997 data, Kansas Hospital Association; 9) 1997 data, Milliman & Robertson Healthcare Management Guidelines (Volume I: Inpatient and Surgical Care, updated December 1997).

Notes: (a) Underlying inpatient utilization estimates are adjusted to reflect the impact of migration into and out of the area. Bed capacity is based on number of staffed beds in Delaware. Bed need estimates assume an optimal hospital occupancy rate for maternity beds of 70 percent. (b) Benchmark use rates are age/sex-adjusted to the Delaware population, with the following exception: M&R use rates are age-adjusted only (no gender-specific utilization data were available). Benchmark use rates are also case-mix adjusted to control for differences in types of hospital admissions.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology

Exhibit II-A-39: Delaware's private hospitals have 88 more psychiatric and substance abuse beds than are utilized. Although the state would require more beds if it used inpatient care like Pennsylvania, Delaware hospitals would have an excess of between 72 and 157 beds if Delaware residents used inpatient care like those in the other benchmarks.

Migration-adjusted Demand versus Staffed Bed Supply: Psychiatric and Substance Abuse Beds 1997



Sources: 1) 1997 data, The Lewin Group 1999 hospital survey; 1997 data, Delaware Health Statistics Center; 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.; 2) 1995 data, National Hospital Discharge Survey; 3) 1997 Maryland hospital discharge data, Health Services Cost Review Commission; 4) 1997 Pennsylvania Health Care Cost Containment data, SMG Marketing Group Inc.; 5,7) 1997 data, Comprehensive Hospital Abstract Reporting System (CHARS) database; 6) 1997 California hospital discharge data, Office of Statewide Health Planning and Development (OSHDP); 8) 1997 data, Kansas Hospital Association; 9) 1997 data, Milliman & Robertson Healthcare Management Guidelines (Volume I: Inpatient and Surgical Care, updated December 1997).

Notes: (a) Underlying inpatient utilization estimates are adjusted to reflect the impact of migration into and out of the area. Bed capacity is based on number of staffed beds in Delaware. Bed need estimates assume an optimal hospital occupancy rate for psychiatric/substance abuse beds of 95 percent. (b) Benchmark use rates are age/sex-adjusted to the Delaware population, with the following exception: M&R use rates are age-adjusted only (no gender-specific utilization data were available). Benchmark use rates are also case-mix adjusted to control for differences in types of hospital admissions.

HEALTH	RESOURCE	VALUE
Hospital	Physician	Diagnostic Technology