

Stroke Mortality in New Jersey Hospitals

2002 - 2005

**Health Care Quality Assessment
Office of the Commissioner
New Jersey Department of Health and Senior Services**

March 2008

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Stroke Mortality in New Jersey Hospitals

2002 - 2005

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March 2008

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should be treated seriously. Of the approximately 50,000 Americans that have a TIA each year, about one-third will have a stroke in the near future. So, if a person experiences the symptoms of a stroke for only a short period of time, then the symptoms go away, the person may be having a "mini stroke." Although a TIA may not leave noticeable damage, it is important to talk to a doctor immediately.

Regardless of which type of stroke, the most common signs of a stroke include:

- Sudden numbness or weakness of the face, arm or leg - especially on one side of the body
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance, or coordination
- Sudden severe headache with no known cause
- Sudden confusion or trouble speaking.

Learning about stroke types and knowing what to do when they occur could save life. A stroke is a medical emergency and should be treated as such. If anyone experiences any of the above signs or symptoms, one should call 911 immediately. Treatment can be more effective if the stroke victim receives it within a short time after the event.

Acute Stroke as Indicator of Quality of Care

Acute Stroke is a disruption of the blood supply to the brain. A stroke occurs when a blood vessel (artery) that supplies blood and nutrients to the brain bursts or is blocked by a blood clot or some other particle. Within minutes, the nerve cells in that area of the brain are damaged, and they may die within a few hours. As a result, the part of the body controlled by the damaged section of the brain cannot function properly. If medical treatment begins soon after symptoms are noticed, fewer brain cells may be permanently damaged.

Treatment for stroke must be timely and efficient to prevent brain tissue death, and differs significantly based on which of the two types of stroke a patient has suffered. For example, clot-busting drugs are appropriate for strokes caused by clots, but could be fatal in the case of a burst blood vessel. Despite its vital role in reducing death, however, hospital care may have a relatively modest impact on patient survival, and most stroke deaths occur after the initial acute hospitalization. The relationship of stroke to quality is that better processes of care may reduce short-term mortality, which represents better quality.

Mortality rates will vary based on the cause of the stroke, the severity of the stroke, other patient illnesses, speed of arrival at the hospital, and speed of diagnosis of the type of stroke. Empirical evidence shows that stroke mortality is positively related to mortality indicators for pneumonia, gastrointestinal

hemorrhage, and congestive heart failure. Moreover, clinical factors, including use of mechanical ventilation on the first day, may vary by hospital and influence mortality. Coma at presentation and a history of previous stroke substantially increase the mortality of patients admitted with stroke.

The mortality rate for Acute Stroke is defined as the number of in-hospital deaths per 100 patients with principal diagnosis code of stroke (age 18 years and older). However, some patients are sicker or more difficult to treat, and some hospitals admit more of these complex patients than others. Each hospital's death rate is adjusted to account for differences in patient factors, but the adjustment is not perfect. Risk adjustment for clinical factors (or at a minimum, severity of illness or risk of mortality derived from the All Patient Refined Diagnosis Related Groups (APR-DRGs)) is recommended. The APR-DRG generates severity of illness or risk of mortality for each patient by applying algorithms on the Uniform Billing data (UB) data. This process provides us with tools that we can use to account for differences in patients' severity of illness and risk of mortality, which in turn allows for comparisons among hospitals with different mixes of patient characteristics. Cases with missing discharge disposition, patients transferred to another short-term hospital, MDC 14 (pregnancy, childbirth, and puerperium), and MDC 15 (newborns and other neonates) are excluded from the calculation of the risk-adjusted rate.

Identifying Acute Stroke Patients in the UB Database

The UB database collects data on patients admitted to acute care hospitals in New Jersey. On each patient, up to nine diagnostic codes are reported, following the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) of which the first one is considered the primary diagnosis code. The UB database also contains up to eight procedure codes that allow the study of procedures performed.

Table 1 presents the primary diagnosis codes used to identify stroke patients admitted in New Jersey acute care hospitals. Stroke care in outpatient settings is not included in the UB database.

Table 1. Primary Diagnosis Codes (ICD-9-CM) for Acute Stroke

Diagnosis Codes	Description
430	Subarachnoid Hemorrhage
431	Intracerebral Hemorrhage
4320	Nontraumatic Extradural Hemorrhage
4321	Subdural Hemorrhage
4329	Unspecified Intracranial Hemorrhage
43301	Basilar Artery Occlusion with Cerebral Infarction
43311	Carotid Artery Occlusion with Cerebral Infarction
43321	Vertebral Artery Occlusion with Cerebral Infarction
43331	Multiple and Bilateral Precerebral Occlusion with Infarction
43381	Other Specified Precerebral Occlusion with Cerebral Infarction
43391	Unspecified Precerebral Occlusion with Cerebral Infarction
43401	Cerebral Thrombosis with Cerebral Infarction
43411	Cerebral Embolism with Cerebral Infarction
43491	Unspecified Cerebral Artery Occlusion with Cerebral Infarction
436*	Acute, but Ill-defined Cerebrovascular Disease

Source: New Jersey 2005 and 2006 UB Data

* This code is excluded in the latest AHRQ IQI Module and has not been used in the analysis .

Demographic Characteristics of Stroke Patients

In order to provide a general picture of the stroke patient population, Table 2 presents the demographic characteristics of patients using data from the 2005 UB database. There were 14,381 patients whose primary diagnosis was stroke. Over 70 percent (72.3%) of these patients were 65 years old or older and suggests that stroke is primarily associated with the elderly. Only 8.0% were less than 50 years old and 52.9% of stroke patients were female.

By Race/ethnicity, 67.5% of stroke patients in 2005 were non-Hispanic White and 17.5% were non-Hispanic black. Hispanics accounted for only 8.0%. Given that most stroke patients are 65 years old or older, the lower proportion of Hispanics among stroke patients suggests that this population group has younger members.

As suggested by the relative old age of the stroke patient population, most of the hospitalizations were paid for by Medicare (64.6%) followed by private insurance providers (22.2%). Medicaid accounted for only 2.1%. UB data do not adequately distinguish between Health Maintenance Organizations (HMOs) serving commercial and Medicaid members. Most New Jersey Medicaid clients under age 65 are enrolled in an HMO.

Table 2. Demographic Characteristics of Acute Stroke Patients, 2005

Categories	Stroke Patients	Column %
Age Group:		
18-34	159	1.2
35-49	975	6.8
50-64	2,855	19.9
65+	10,392	72.3
Total	14,381	100.0
Sex:		
Male	6,767	47.1
Female	7,614	52.9
Total	14,381	100.0
Ethnicity:		
White/Non-Hisp	9,713	67.5
Black/Non-Hisp	2,519	17.5
Asian/Non-Hisp	999	7.0
Hispanic	1,150	8.0
Total	14,381	100.0
Payer:		
Medicare	9,290	64.6
Medicaid	295	2.1
Private	3,186	22.2
Self Pay	685	4.8
Other	925	6.4
Total	14,381	100.0

Source: New Jersey 2005 UB Data.

Severity of Illness and Risk of Mortality

Tables 3 and 4 present demographic characteristics of stroke patients by severity of illness and risk of mortality, respectively. Severity of illness and risk of mortality are obtained by using 3-M's proprietary grouper known as the All Patient Refined Diagnosis Related Groups (APR-DRG) which is a clinical model that expands on Diagnosis Related Groups (DRGs) on the basis of patient demographics and secondary diagnoses to identify patients with low, moderate, and high severity of illness or risk of mortality.

Table 3 shows that a great majority of stroke patients in age groups 50-64 and 65+ are hospitalized with either moderate or high level of severity of illness. Only 17.0% of those in age group 50-64 and 11.2% of those 65 years or older are reported to be with low severity of illness. Close to 87% (86.9%) of stroke patients had either moderate (48.0%) or high (38.9%) severity of illness as assessed using the APR-DRG grouper. By comparison, 15.7% of the 1,628 deaths and 81.2% of the deaths, respectively, were among moderate severity and high severity of illness patients.

Table 4 shows distribution of stroke hospitalizations including deaths due to acute stroke by risk of mortality as per the APR-DRG classification. Overall, of the 14,381 stroke hospitalizations, 47.9% were admitted as patients with moderate risk of mortality while 25.5% were considered as patients with high risk of mortality. Of the 1,628 deaths due to acute stroke, 77.6% were classified as patients with high risk of mortality.

Table 4 also presents crude death rates by age group, sex, race/ethnicity and Insurance (Payer). The crude (unadjusted) death rate among stroke patients in 2005 was 11.3% with Asians having the highest rate (12.8%) followed by whites (11.8%).

Table 3. Severity of Illness by Demographic Characteristics of Acute Stroke Patients, 2005

Category	Severity of Illness*			Total
	Low	Moderate	High	
Age Group:				
18-34	23.3	37.1	39.6	159
35-49	20.9	45.8	33.2	975
50-64	17.0	51.6	31.5	2,855
65+	11.2	47.4	41.5	10,392
Sex:				
Male	14.6	47.5	37.9	6,767
Female	11.8	48.4	39.8	7,614
Ethnicity:				
White/Non-Hisp	12.6	48.0	39.4	9,713
Black/Non-Hisp	12.2	49.1	38.7	2,519
Asian/Non-Hisp	17.7	45.2	37.0	999
Hispanic	15.3	48.0	36.7	1,150
Payer:				
Medicare	10.4	47.0	42.6	9,290
Medicaid	8.8	44.7	46.4	295
Private	18.4	50.3	31.3	3,186
Self Pay	21.8	47.9	30.4	685
Other	17.5	50.3	32.2	925
Total	13.1	48.0	38.9	14,381
Death Distribution	3.1	15.7	81.2	1,628
Crude Death Rate	2.7	3.7	23.6	1,628

Source: New Jersey 2005 UB data.

* Obtained from APR-DRG. Numbers represent row percents.

Table 4. Risk of Mortality by Demographic Characteristics of Acute Stroke Patients, 2005

Category	Risk of Mortality*			Total		
	Low	Moderate	High	Number of Stroke Patients	In-hospital Deaths	Crude Death Rate
Age Group:						
18-34	47.2	25.8	27.0	159	16	10.1
35-49	52.7	24.4	22.9	975	95	9.7
50-64	56.6	24.1	19.3	2,855	240	8.4
65+	15.7	56.9	27.4	10,392	1,277	12.3
Sex:						
Male	31.4	42.8	25.9	6,767	773	11.4
Female	22.4	52.4	25.2	7,614	855	11.2
Ethnicity:						
White/Non-Hisp	23.0	51.4	25.6	9,713	1,147	11.8
Black/Non-Hisp	34.0	41.2	24.7	2,519	233	9.2
Asian/Non-Hisp	32.6	38.0	29.3	999	128	12.8
Hispanic	36.1	41.0	22.9	1,150	120	10.4
Payer:						
Medicare	15.4	56.8	27.8	9,290	1,118	12.0
Medicaid	36.3	33.6	30.2	295	29	9.8
Private	48.8	31.6	19.6	3,186	290	9.1
Self Pay	51.7	25.0	23.4	685	93	13.6
Other	41.5	35.5	23.0	925	98	10.6
Total	26.6	47.9	25.5	14,381	1,628	11.3
Death Distribution	1.7	20.8	77.6			
Crude Death Rate	0.7	4.9	34.4			

Source: New Jersey 2005 and 2006 UB Data.

* Obtained from APR-DRG. Numbers represent row percents.

Acute Stroke Mortality in New Jersey Hospitals

Analysis presented in this section is based on New Jersey UB data and the AHRQ IQI module. Table 5 presents number of stroke patients, number of in-hospital deaths and risk-adjusted mortality rates for acute stroke in New Jersey hospitals for years 2002 to 2005.

The statewide volume of stroke patients declined from 15,123 in 2002 to 14,381 in 2005, almost a five percent decline (4.9%).

The risk-adjusted death rate is the best estimate since it would provide what the hospital's rate would have been if the hospital had a mix of patients identical to the statewide-average patient mix for that year. The risk-adjusted rate reflects the age and sex distribution as well as the APR-DRG distribution of the data in the baseline file.

Readers are advised to use the statewide rate as point of reference while comparing hospital-specific rates. The following are the salient observations in the Table.

- The risk-adjusted stroke death rate declined from 12.1% in 2002 to 10.0% in 2005 and represents a 17.3% decline. In 2003, the average stroke death rate in the United States was 10.6%. Literature suggests that only 10-15% of stroke patients die during hospitalization.
- Hospital-specific risk-adjusted stroke mortality rates for 2002 ranged from a low of 5.1% (Barnert hospital) to a high of 18.0% (Lourdes Medical Center of Burlington County). In 2005, the rate ranged from a low of 0.0% (Deborah Heart and Lung Center) to 28.3% (St. Clare's Hospital - Sussex). Rates based on a denominator (volume) of less than 30 are to be used with caution.

It is important to note that hospitals with rehabilitation programs may have higher mortality rates. Another factor that affects in-hospital death rates may be early post-operative discharge, which may shift deaths to skilled nursing facilities or outpatient settings. This may lead to biased comparisons among hospitals with different mean lengths of stay. This suggests that a fair comparison of hospitals by risk-adjusted mortality should consider some post discharge deaths as well as in-hospital deaths much like it is done for cardiac surgery center evaluations.

Table 5. Risk-Adjusted Acute Stroke Mortality (per 100) in New Jersey Hospitals, 2002-2005

Hospital Name	2002			2003			2004			2005		
	Volume	Deaths	Rate	Volume	Deaths	Rate	Volume	Deaths	Rate	Volume	Deaths	Rate
<i>National (National Healthcare Quality Report)</i>			NA			11.0			10.5			NA
<i>National (AHRQ Documentation)</i>			11.0			10.6			NA			NA
Statewide	15,123	1,881	12.1	14,820	1,758	11.2	14,411	1,652	10.1	14,381	1,628	10.0
Atlanticare Regional Medical Center-City	202	43	15.0	181	37	14.0	157	32	11.8	175	39	11.4
Atlanticare Regional Medical Center-Mainland	149	22	12.2	155	16	9.6	151	13	8.0	164	17	8.3
Barnert Hospital	63	2	5.1	45	0	2.5	38	5	10.0	40	1	4.9
Bayonne Medical Center	184	15	10.1	167	22	13.3	170	16	10.3	174	21	10.8
Bayshore Community Hospital	235	26	12.2	203	18	10.0	198	24	10.3	189	20	10.6
Bergen Regional Medical Center	11	0	6.5	13	2	20.8	8	0	0.0	14	4	22.5
Cape Regional Medical Center	212	33	16.6	197	17	10.7	189	14	8.8	143	17	12.6
Capital Health System at Fuld	120	16	8.6	125	20	11.9	127	16	8.6	90	10	7.2
Capital Health System at Mercer	138	17	11.2	129	7	6.5	118	6	7.4	115	9	9.8
Cathedral-St. James Hospital	64	7	11.5	58	1	5.0	44	1	4.8	46	7	12.5
Cathedral-St. Michael's Medical Center	90	6	7.1	78	7	7.3	83	3	5.0	77	6	9.3
CentraState Medical Center	211	23	11.3	202	27	11.3	189	14	7.3	170	19	11.1
Chilton Memorial Hospital	160	19	12.5	153	19	7.6	189	17	9.0	173	15	8.6
Christ Hospital	157	18	11.1	171	23	13.8	136	13	9.9	148	17	10.7
Clara Maass Medical Center	183	23	9.5	217	20	7.0	252	35	10.9	237	22	7.1
Columbus Hospital	121	4	7.4	123	7	9.5	115	9	9.5	119	14	10.1
Community Medical Center	618	98	15.8	644	96	14.1	610	71	9.7	579	77	10.7
Cooper Hospital/University Medical Center	238	41	14.3	263	46	13.8	283	51	13.7	282	38	10.6
Deborah Heart and Lung Center	9	1	12.7	1	0	.	6	0	0.0	7	0	0.0
East Orange General Hospital	136	13	9.9	157	11	8.7	145	12	10.2	134	8	8.2
Englewood Hospital and Medical Center	225	32	13.8	246	36	13.0	237	31	11.5	256	32	11.2
Greenville Hospital	79	12	17.0	56	4	11.2	62	5	8.8	52	2	7.5
Hackensack University Medical Center	583	58	10.3	492	56	9.9	486	51	9.1	52	44	8.9
Hackettstown Community Hospital	49	2	7.2	54	6	11.3	60	8	17.1	480	7	14.8
Holy Name Hospital	257	42	15.6	211	25	8.8	229	27	9.8	62	38	12.9
Hunterdon Medical Center	119	10	6.9	116	3	5.8	120	10	8.4	84	6	7.1
Irvington General Hospital	89	4	9.7	91	7	11.5	87	9	9.2	73	5	6.9
Jersey City Medical Center	109	15	11.6	125	30	16.8	123	28	16.7	148	19	10.6
Jersey Shore University Medical Center	322	44	13.5	310	38	12.2	308	41	10.8	301	18	6.3
JFK Community Medical Center-Edison	335	32	8.3	416	27	7.3	326	37	9.5	386	34	7.1
Kennedy Memorial Hospitals UMC-Cherry Hill	105	20	17.3	83	10	10.9	77	8	6.4	85	7	7.6

Table 5. Risk-Adjusted Acute Stroke Mortality (per 100) in New Jersey Hospitals, 2002-2005

Hospital Name	2002			2003			2004			2005		
	Volume	Deaths	Rate	Volume	Deaths	Rate	Volume	Deaths	Rate	Volume	Deaths	Rate
<i>National (National Healthcare Quality Report)</i>			NA			11.0			10.5			NA
<i>National (AHRQ Documentation)</i>			11.0			10.6			NA			NA
Statewide	15,123	1,881	12.1	14,820	1,758	11.2	14,411	1,652	10.1	14,381	1,628	10.0
Kennedy Memorial Hospitals UMC-Stratford	124	15	11.4	96	9	10.8	111	7	8.4	95	3	4.4
Kennedy Memorial Hospitals UMC-Wash. Twp.	124	12	12.3	125	18	16.0	142	14	12.3	150	9	8.1
Kimball Medical Center	206	22	12.7	168	24	14.1	174	22	11.4	181	19	11.7
Lourdes Medical Center of Burlington Cty.	133	24	18.0	171	19	12.4	131	13	11.2	133	15	16.4
Meadowlands Hospital Medical Center	78	8	11.1	52	3	8.8	60	3	6.8	37	6	13.7
Memorial Hospital of Salem County	96	11	10.4	76	8	9.9	86	6	7.5	79	4	4.6
Monmouth Medical Center	138	12	8.5	171	9	5.6	132	7	5.7	152	6	3.9
Morristown Memmorial Hospital	325	50	14.3	255	50	15.4	244	43	12.9	241	33	12.3
Mountainside Hospital	246	33	10.8	215	26	9.7	181	20	8.9	228	17	6.4
Muhlenberg Regional Medical Center	211	34	14.8	205	25	10.6	200	17	8.4	161	13	6.6
Newark Beth Israel Medical Center	241	29	11.0	196	25	12.4	201	27	10.3	181	27	13.1
Newton Memorial Hospital	131	17	13.5	111	13	11.9	110	10	9.8	98	6	6.6
Ocean Medical Center	296	37	10.7	351	42	11.3	274	39	10.4	278	44	11.4
Our Lady of Lourdes Medical Center	233	21	13.1	264	26	10.9	240	15	7.0	242	24	10.6
Overlook Hospital	350	44	11.1	329	52	13.9	291	53	11.6	356	55	10.9
Palisades Medical Center of New York	106	11	9.8	120	11	11.4	99	9	9.0	70	14	13.2
Pascack Valley Hospital	176	17	11.6	149	28	16.4	134	15	9.9	155	20	11.8
PBI Regional Medical Center	286	34	10.4	275	21	8.5	233	27	9.6	233	34	12.9
Raritan Bay Medical Center-Old Bridge	136	12	8.7	144	8	6.4	121	12	8.9	109	6	4.6
Raritan Bay Medical Center-Perth Amboy	169	24	13.3	160	29	15.4	151	17	10.2	165	13	6.8
Riverview Medical Center	250	33	11.6	243	28	10.0	271	29	9.0	220	28	8.6
RWJ University Hospital	226	25	10.5	360	39	7.8	362	54	9.1	429	68	9.9
RWJ University Hospital at Hamilton	344	40	8.5	214	16	8.6	224	20	8.9	223	18	7.5
RWJ University Hospital at Rahway	170	22	9.7	204	30	13.1	169	15	6.2	182	16	6.9
Shore Memorial Hospital	191	22	11.5	213	34	16.2	218	33	10.7	240	25	11.4
Somerset Medical Center	259	37	14.3	332	30	9.8	290	30	9.6	288	43	11.2
South Jersey Healthcare Regional MC	.	.	.	.	.	.	88	7	9.4	239	29	12.3
South Jersey Hospital-Bridgeton	91	9	13.8	93	12	15.3	55	5	9.6	0	.	.
South Jersey Hospital-Elmer	64	6	11.5	46	4	8.1	56	9	17.5	70	13	19.9
South Jersey Hospital-Newcomb	156	17	11.7	167	20	14.7	104	8	9.7	.	.	.
Southern Ocean County Hospital	143	20	16.0	163	21	14.6	157	22	12.9	153	20	11.6

Table 5. Risk-Adjusted Acute Stroke Mortality (per 100) in New Jersey Hospitals, 2002-2005

Hospital Name	2002			2003			2004			2005		
	Volume	Deaths	Rate	Volume	Deaths	Rate	Volume	Deaths	Rate	Volume	Deaths	Rate
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<i>National (AHRQ Documentation)</i>			11.0			10.6			NA			NA
Statewide	15,123	1,881	12.1	14,820	1,758	11.2	14,411	1,652	10.1	14,381	1,628	10.0
St. Barnabas Medical Center	337	42	13.9	326	31	9.6	296	23	7.6	345	36	8.9
St. Clare's Hospital-Denville	286	47	17.9	261	38	12.3	272	29	9.3	214	28	12.5
St. Clare's Hospital-Dover	4	0	8.9	1	0	.	.	.	.	43	4	7.2
St. Clare's Hospital-Sussex	.	.	.	24	2	14.7	17	4	16.8	25	6	28.3
St. Francis Medical Center-Trenton	131	11	6.8	122	12	8.0	117	7	5.4	88	7	8.3
St. Joseph's Hospital and Medical Center	270	40	12.1	291	51	14.1	290	48	12.1	310	45	12.2
St. Joseph's Wayne Hospital	117	13	12.3	143	11	8.5	135	8	8.5	128	4	5.1
St. Mary Hospital (Hoboken)	105	17	12.9	135	13	9.5	114	12	8.8	101	19	14.3
St. Mary's Hospital (Passaic)	52	4	11.7	26	7	22.6	55	2	6.0	52	2	5.1
St. Peter's University Hospital	205	29	13.7	181	21	8.3	175	17	7.0	192	27	11.2
Trinitas Hospital	38	38	15.3	189	31	14.0	218	35	12.5	197	27	13.1
UMDNJ-University Hospital	49	49	11.1	312	63	12.8	377	72	12.4	432	68	10.5
University Medical Center at Princeton	169	16	12.0	189	15	9.7	188	22	11.2	186	17	10.7
Underwood-Memorial Hospital	200	19	12.5	150	8	10.0	175	15	11.6	179	8	7.9
Union Hospital	195	22	11.5	208	28	11.7	191	23	10.4	153	18	10.5
Valley Hospital	376	52	12.2	328	34	10.7	341	41	9.3	369	48	10.7
Virtua-Memorial Hospital Burlington Cty.	263	23	10.6	257	27	12.5	293	25	10.9	265	15	7.2
Virtua-West Jersey Hospital Berlin	69	11	15.5	83	7	12.9	73	4	11.9	57	5	9.8
Virtua-West Jersey Hospital Marlton	167	17	12.2	148	19	14.7	149	17	15.3	122	13	12.8
Virtua-West Jersey Hospital Voorhees	192	17	11.0	174	15	11.5	151	9	9.5	148	12	9.8
Warren Hospital	111	10	10.3	82	4	6.6	98	16	12.9	87	8	9.5
William B. Kessler Memorial Hospital	50	3	11.3	40	3	12.2	47	6	13.2	53	8	13.7

Notes:

1. Source: New Jersey Uniform Billing Database, 2002 - 2005.
2. Volume reflects all discharges with a principal diagnosis code of acute stroke as given in Table 1.
3. Deaths represent number of in-hospital deaths with a principal diagnosis code of acute stroke.
4. Missing (.) indicates that the hospital did not perform the procedure during the year.
5. AHRQ cautions that rates computed from volumes (denominators) of less than 30 should be interpreted with caution.

Discussion

The 2005 UB data suggest that stroke affects all adults with the elderly (65+ years old) accounting for most (72.3%) of hospitalized patients in 2005. Consistent with the distribution of the stroke patients by age, 64.5% were Medicare insurance carriers with private insurance accounting for (22.2%). The UB data also suggest marked differences in stroke mortality by race/ethnicity of patients.

Risk-adjusted stroke mortality declined by 17.4% in 2005 down from 12.1% in 2002. While this decline is good news for New Jersey residents, stroke still remains a major health hazard in the state that needs significant attention by policy makers, healthcare providers as well as the public.

This report only provides baseline information that may serve as background for the planned stroke registry in New Jersey. The stroke registry, which is scheduled to start collecting data on January 1, 2009, will provide comprehensive clinical information that the Department will use for outcomes evaluation. The stroke registry will allow for a systematic study of stroke-related patient characteristics such as demographic information, clinical conditions, Joint Commission indicators, and other items to assess outcomes. Once the data collection initiative begins, summary statistics will be made available to participating hospitals on a quarterly basis. An annual report will also be available after the data are reviewed extensively.

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