

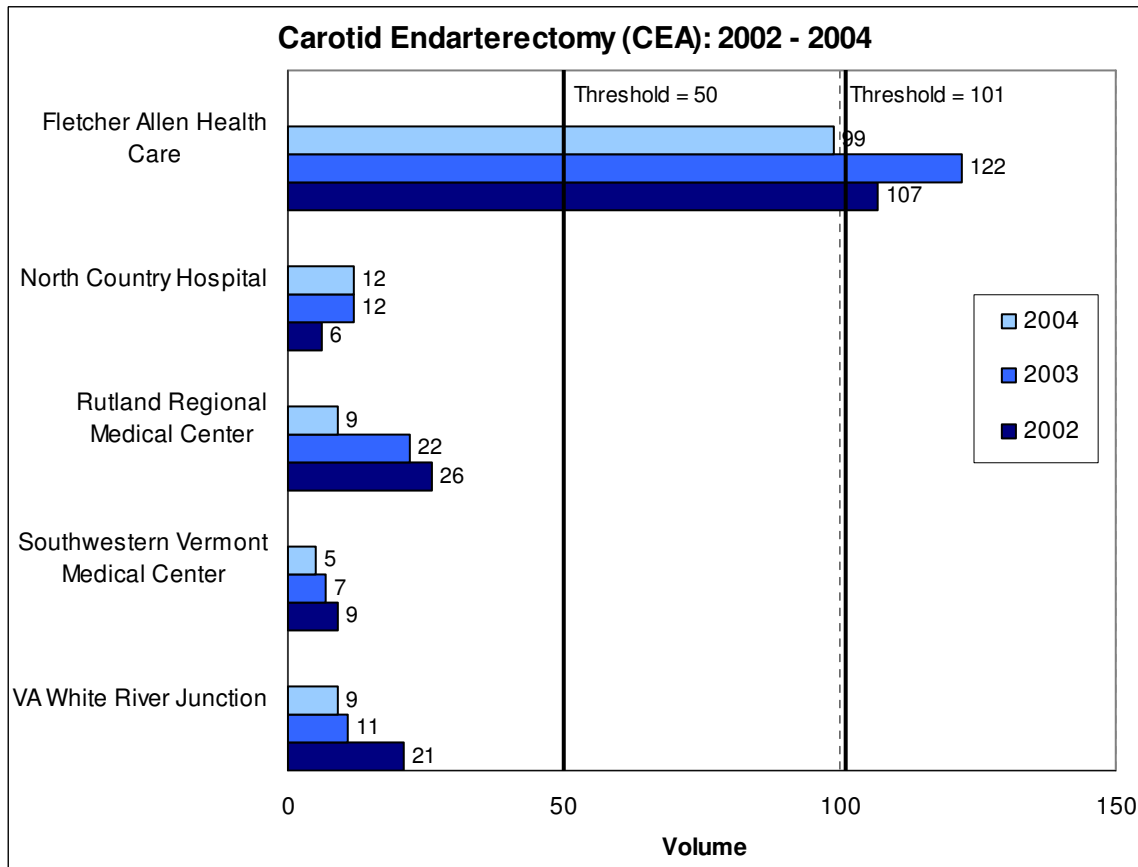
## CAROTID ENDARTERECTOMY

A carotid endarterectomy is a surgical procedure on the carotid arteries in the neck to remove blockage and restore adequate blood flow to the brain and reduce the chance of stroke.

### Carotid Endarterectomy (CEA): Volume

Volume is measured as the number of patients who underwent a carotid endarterectomy. Scientific research indicates that higher volumes (that is, doing more of the procedures) are connected with better outcomes, and medical experts have recommended thresholds establishing the minimum number of procedures a facility should perform in order to assure safety and better outcomes. For carotid endarterectomy, the lowest minimum threshold recommended in scientific literature is 50 procedures per year, and the highest minimum threshold recommended by any scientific study is 101 procedures per year. (See Technical Guide for more information)

- Hospitals not shown had no cases in the reporting years.
- Hospital comments about this measure are listed below the mortality table.



## Carotid Endarterectomy (CEA): Mortality

Mortality refers to the number of patients who underwent the procedure at a hospital and died at the same hospital (excludes hospital to hospital transfers).

- Lower rates may represent better quality.
- These measures lack reliability and are influenced by random variation when the number of procedures is small. Small numbers of reported cases are often not sufficient for establishing a pattern of care. For this reason, mortality rates are not calculated for hospitals with fewer than 30 cases in a reporting year. Even when there are more than 30 cases, caution should be used when interpreting rates.
- Hospitals not shown had no cases in any of the reporting years.
- Hospital comments about this measure are listed below the table.

Hospitals performing procedure in 2002, 2003, and/or 2004	Number of Procedures			Number of Deaths			Mortality Rate					
							Observed Rate			Risk-Adjusted Rate		
	2002	2003	2004	2002	2003	2004	2002	2003	2004	2002	2003	2004
Fletcher Allen Health Care	107	121	99	0	0	0	0%	0%	0%	0%	0%	0%
North Country Hospital	6	12	12	0	0	0	*	*	*	*	*	*
Rutland Regional Medical Center	26	22	9	0	0	0	*	*	*	*	*	*
Southwestern Vermont Medical Center	9	7	5	0	0	0	*	*	*	*	*	*
VA White River Junction	21	11	9	0	0	0	*	*	*	*	*	*
Vermont Total	169	173	134	0	0	0	0%	0%	0%	0%	0%	0%
National Total										1%	na	na

\* Rates for hospitals with fewer than 30 procedures are not presented because of concerns that small numbers result in statistically unreliable rates.

na - National mortality rates are not yet available for 2003 and 2004

<b>Definitions</b>	
Number of Procedures	The number of patients who underwent this procedure at the hospital (does not include transfers).
Number of Deaths	The number of patients who underwent this procedure at a hospital and died at the same hospital.
Mortality Rate	The percentage of patients who underwent this procedure who died at the hospital. Two ways of measuring this rate are Observed Rate and Risk-Adjusted Rate.
Observed Rate	The Number of Deaths divided by the Number of Procedures. This does not take into account age, gender, or the complexity of particular cases.
Risk-Adjusted Rate	Mortality rate adjusted for age, gender, and complexity. This rate allows for better comparisons between hospitals. It is important to note, however, that it is difficult to draw firm conclusions from rates based on a small number of procedures.

The following hospitals provided additional comments about carotid endarterectomy:

**Fletcher Allen Health Care:** Fletcher Allen Health Care, as Vermont's academic medical center, performs a wide range of vascular surgical procedures, including the Carotid Endarterectomy procedure. All Fletcher Allen vascular surgeons are fully certified by the American Board of Surgery with special qualifications in Vascular Surgery.

Fletcher Allen's extensive vascular surgery activity strengthens surgeon expertise in this critical subspecialty and contributes to the excellent mortality outcomes shown. The vascular care team at Fletcher Allen actively reviews surgical outcomes as part of its academic training program and rigorously strives to continuously improve care.

**Southwestern Vermont Medical Center:** Research by The Leap Frog Group and other national recommendations show a positive relationship between volumes and outcomes of certain high-risk procedures. In 2004, Southwestern Vermont Medical Center stopped performing carotid endarterectomies because we did not have the volume to support best clinical outcomes.

**VA White River Junction:** Carotid endarterectomy volumes have been steadily declining since carotid stenting is the less invasive procedure of choice. Future measures might address carotid stent patient outcomes.