

This is an example of the COPI report sent to VQI centers, using fictitious data to illustrate a center with long LOS and opportunity for improvement.

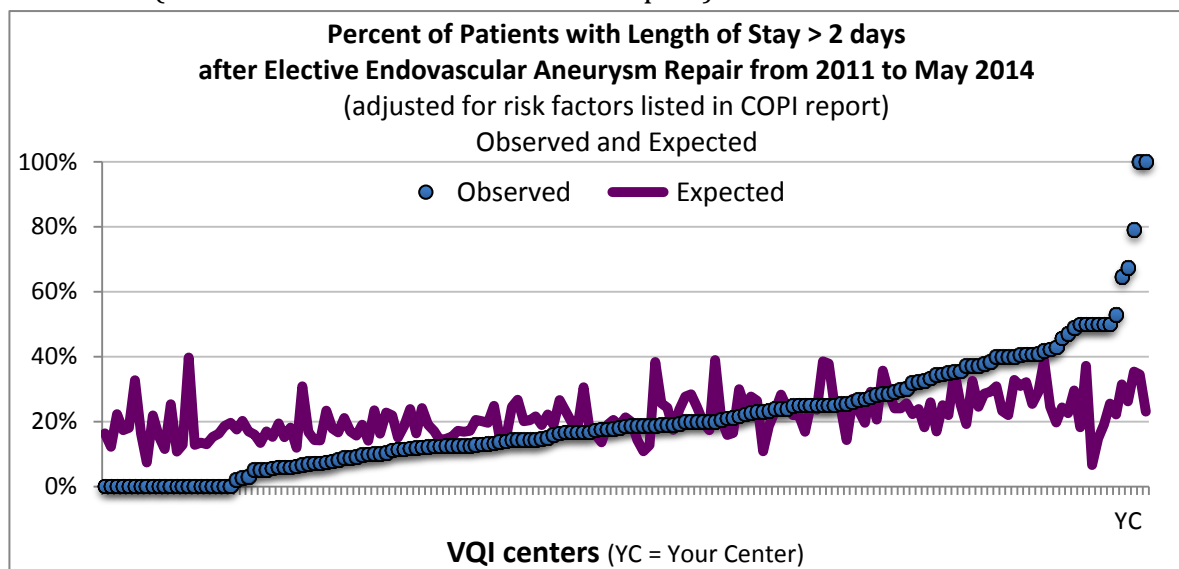


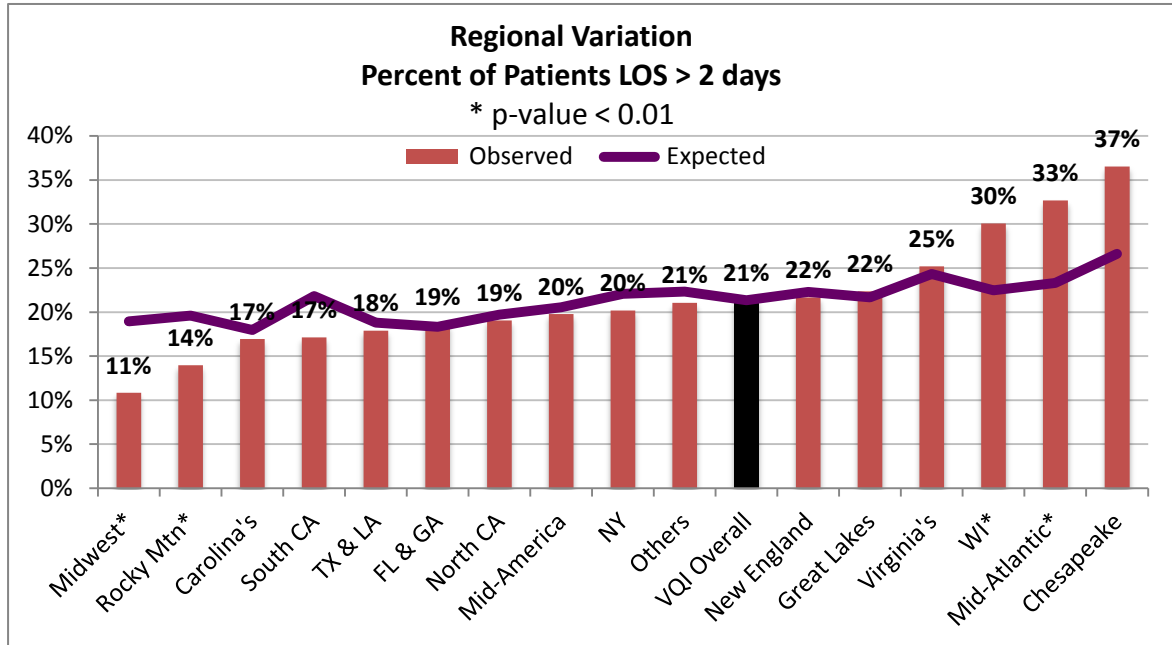
The mission of SVS PSO is to improve patient safety and the quality of vascular health care delivery by providing web-based collection, aggregation, and analysis of clinical data submitted to the registry.

In our continuing effort to improve the quality, safety, effectiveness and cost of vascular health, the Vascular Quality Initiative® (VQI) is pleased to provide you with this Center Opportunity for Improvement (COPI) report concerning length of stay (LOS) after elective endovascular aneurysm repair (EVAR).

Reducing LOS is a high priority for all of us, in order to reduce cost and hospital acquired morbidity. Most patients were discharged by the second post-operative day, but across all VQI centers, 21% of patients undergoing elective EVAR and admitted the same day of the procedure have post-operative LOS > 2 days (excluding patients with prior aortic surgery, those admitted from a nursing home or procedures performed during the weekend). Since EVAR is one of the most frequently performed vascular operations, this can have significant impact.

The graph below shows the variation in the percent of patients with LOS > 2 days (post-procedure to discharge) after EVAR across VQI centers (from 2011 to May, 2014). The OBSERVED percentage of patients with LOS > 2 days is shown for each center (blue dots, sorted from low to high), with your center indicated by YC along the x-axis. As you can see, some centers had no patients staying longer than 2 days, while in other centers all or nearly all patients stayed greater than 2 days after elective EVAR. The EXPECTED percentage of patients with LOS > 2 days is shown by the purple line, which corrects for differences in patient demographic characteristics that affect LOS (listed in COPI table at end of this report).





The regional variation chart above shows that 2 regions have a significantly lower and higher percentage of patients with LOS > 2 days after elective EVAR.

Your center's average and median LOS after elective EVAR, with standard deviation, are shown in the table below, and compared with all centers in VQI and centers in your region. In addition, your center's observed and expected percentage of patients with LOS > 2 days are shown, with a statistical calculation of whether this percentage is lower or higher than expected based on the characteristics of the patients in your center.

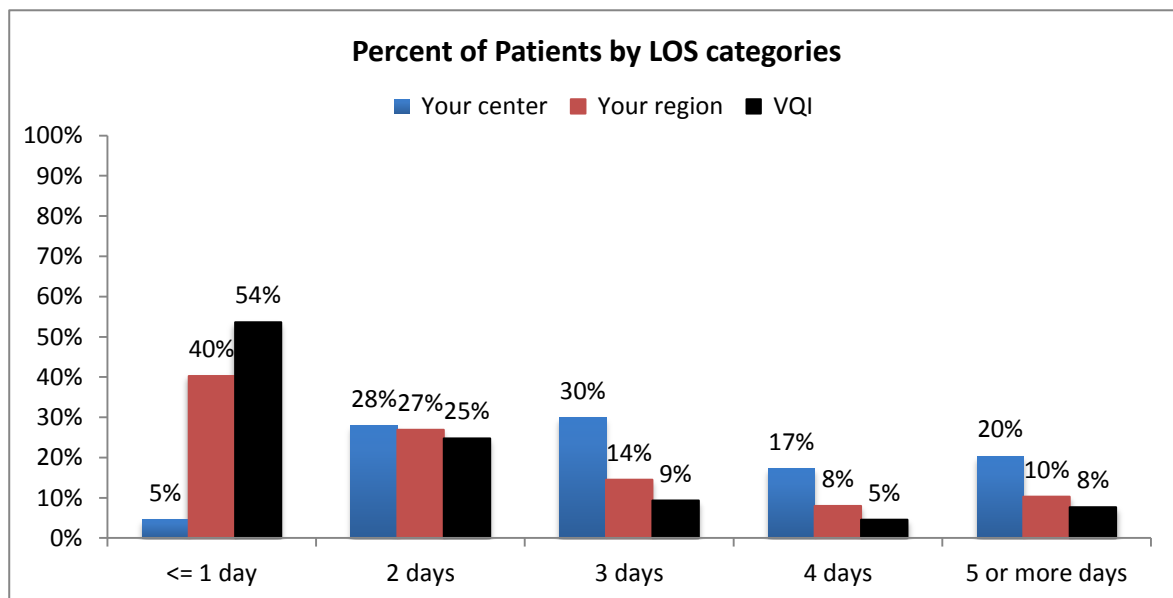
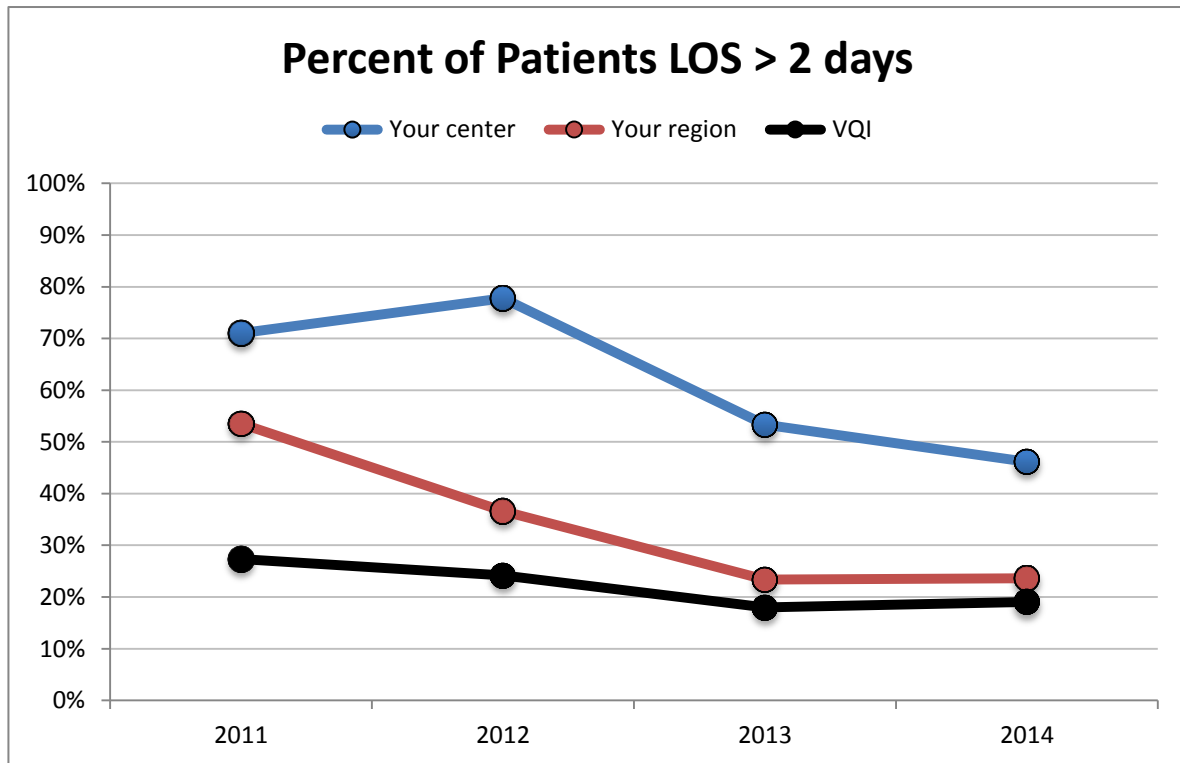
	Your center	Your region	VQI
Number of procedures from 2011 to 5/28/2014	311	1017	11670
Number of procedures excluded*	114	319	3386
Number of elective procedures (exclusions*)	197	698	8284
Length of stay (days)			
Average	3.7	2.6	2.2
Standard deviation	2.9	2.8	5.0
Median	3	2	1
% LOS > 2 days			
Observed	67%	33%	21%
Expected	26%	23%	21%
Observed statistically significant from Expected	p<0.01		Observed rate was higher than expected

LOS equals discharge date minus date of admission

* exclusion criteria: Death prior to 3 days, non-elective procedure, procedure not same day as admission, admit from nursing home, prior aortic surgery, and procedure done on weekend

** Double asterisk is shown if center had less than 6 procedures in which the standard deviation could not be calculated or lacked meaning due to small numbers

The line graph below show the percentage of patients with LOS > 2 days after elective EVAR in your center over time, compared with all VQI centers and centers in your region. The bar graph shows the distribution of LOS in your center compared to all VQI centers and your region for patients that fit the inclusion criteria for elective EVAR since 2011.



In order to reduce LOS, it is necessary to understand which factors are independently associated with prolonged LOS. To determine this, we performed multivariable logistic regression regarding patient characteristics, procedure details, post-op complications and health system variables, such as physician annual procedure volume and day of week of the procedure. The significant predictors of a longer LOS are listed in the Center Opportunity Profile for Improvement (COPI) report on the next page.

The COPI report lists all risk factors independently associated with LOS > 2 days after EVAR along with the percentage of patients at your center with that risk factor. Factors are highlighted with red if your center was above the 75th percentile (indicating a potential opportunity to reduce LOS) and green if your center was below the 25th percentile (indicating less opportunity to reduce LOS). The report also contains the odds ratio (OR) for each risk factor from the logistic regression model. This shows how much each risk factor contributes to a LOS > 2 days. An OR of 2 means that patients with this risk factor have twice the likelihood of LOS > 2 days compared to a risk factor with an OR of 1. Thus, ORs are a way to rank the risk factor's impact on a longer LOS (larger ORs have a larger impact).

Patient characteristics that increase LOS can usually not be modified, but can help direct earlier efforts at discharge planning. Procedure details and surgeon annualized volume are potentially modifiable and represent opportunities to reduce LOS. Post-operative complications have a very large influence on LOS and represent the greatest opportunity for improvement.

If you would like further information or have questions about your COPI report please contact Carrie Bosela, at C.Bosela@svspso.org.

Jack Cronenwett, MD
SVS PSO Medical Director

Note: This report is a patient safety work product generated within the SVS PSO, LLC, is considered privileged and confidential.

Your Center Opportunity Profile for Improvement (COPI)

Legend:

Lowest 25th percentile

Highest 75th percentile

Reference is for risk factors having more than 2 categories and is the comparison category for the risk factor.

Excludes patients with procedures not on same day of admission or on weekend, patients admitted from a nursing home, death within 2 days after procedure, patients with prior aortic surgery, and nonelective procedures.

EVAR: Risk factors for LOS > 2 days		% patients with risk factor			
		Odds Ratio	Your center	Your region	VQI
Patient Characteristics					
	Female	1.7	13%	19%	19%
	Person of color	1.9	10%	7%	7%
	Age				
	Less than 70 years	Reference			
	70 to 79 years	1.2	42%	41%	42%
	80 years or above	1.8	22%	23%	23%
	COPD				
	Non-COPD	Reference			
	On Medication	1.3	11%	17%	17%
	On Home Oxygen	1.4	2%	5%	4%
Procedure details					
	Estimated Blood Loss				
	<= 150 ml	Reference			
	151 - 300 ml	1.3	23%	24%	25%
	> 300 ml	2.1	19%	17%	14%
	Procedure Time				
	<= 120 minutes	Reference			
	121 - 180 minutes	1.4	26%	29%	30%
	> 180 minutes	2.5	22%	22%	19%
	Complex procedure*	1.6	38%	32%	29%
Post-op complications					
	Vasopressors Required Post-op	3.4	13.3%	6.1%	4.0%
	Myocardial Infarction	14.2	1.0%	1.0%	1.0%
	Dysrhythmia	6.8	5.1%	3.1%	2.6%
	Post-op CHF	5.7	1.0%	1.0%	0.7%
	Respiratory	1.9	1.5%	2.0%	1.4%
	Worsened Renal Function	12.1	3.1%	2.5%	2.6%
	Leg Ischemia/Emboli	1.9	0.5%	1.2%	0.8%
	Wound Complication	6.7	1.0%	1.0%	0.7%
	Return to OR	4.5	3.6%	2.6%	1.7%
Day of week					
	Monday	1.2	35%	22%	21%
	Tuesday/Wednesday/Thursday	Reference			
	Friday	1.4	9%	14%	16%

* Complex procedure if hypogastric coil, unplanned graft extension, femoral endarterectomy, fem-fem bypass, ilio-femoral bypass, thromboembolectomy, iliac angioplasty, iliac stent, renal PTA/stent, other arterial reconstruction or open conversion.