

# Vascular Quality Initiative®

vascularqualityinitiative.org

## Value of Participation

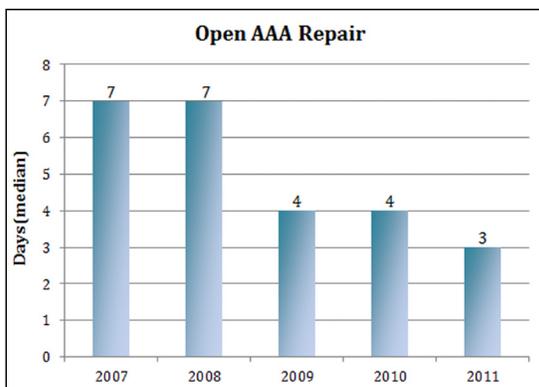
### *Quality Improvement Can Lead to Reduction in Cost*

The Vascular Quality Initiative® (VQI®) provides real-time, customizable benchmarked reports of key quality measures to drive quality improvement. The VQI leverages the power of a national database with the value of regional quality groups where practice changes can be implemented to improve the costs and quality of care. As the cornerstone of the VQI's success, regional groups provide a vehicle for collaboration between peers to identify and share best practices. Through regular regional group meetings, participants analyze their data to recognize variation in processes of care and outcomes, and launch quality initiatives that can reduce complications, readmissions, and length of stay (LOS).

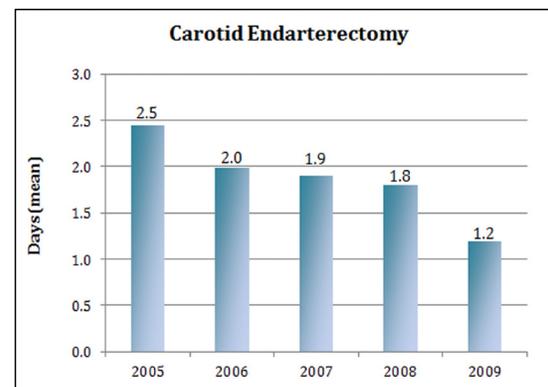
The Vascular Study Group of New England (VSGNE), which the VQI is modeled after, has successfully impacted the quality of patient care in their region since 2003. The following are examples of quality improvement initiatives across their region:

- To reduce operative risk, pre-operative medications of known benefit have been prescribed (ex: beta-blockers increased from 68% to 88% and statins from 53% to 89%)
- Use of protamine to significantly diminish reoperation for bleeding during Carotid Endarterectomy, without increasing thrombotic risk
- Patching during Carotid Endarterectomy has increased from 84% to 100%, which has eliminated recurrent carotid stenosis at one year follow-up
- Use of less invasive Endovascular AAA repair has increased from 36% to 75% for elective cases, and the complication of endoleak has decreased from 32% to 24%

Quality improvements projects such as these should translate directly into hospital cost reduction. Examples of cost saving per admission, estimated by LOS reductions in the VSGNE and Carolinas Vascular Quality Group are:



Decrease Intensive Care Unit days for Open Ruptured AAA repair = estimated savings of \$128,300 per admission, using HCUP mean cost of \$32,083 per day\*



Decrease in LOS for Carotid Endarterectomy = estimated savings of \$12,400 per admission, using HCUP mean cost of \$9,549 per day\*

\* Source: HCUP Nationwide Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP). 2007-2009. Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/nisoverview.jsp](http://www.hcup-us.ahrq.gov/nisoverview.jsp).

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## Value of VQI National Quality Committees

The Quality Committees of the Society for Vascular Surgery® Patient Safety Organization (SVS PSO) analyze VQI data to aid participating centers and physicians in their efforts to improve the quality and safety of patient care. Through the data analyses, the committees provide VQI participants with opportunities for improvement. In 2012, the SVS PSO Arterial Quality Committee initiated the VQI's first national quality improvement project, focusing on surgical site infection (SSI) after infra-inguinal bypass.

The prevention of SSI is a high priority, not only to reduce patient morbidity, but to avoid increased costs for hospitals. The Arterial Quality Committee analyzed data across all VQI centers to identify risk factors associated with in-hospital SSI after infra-inguinal bypass. Using a multivariable logistic model, significant variation in risk-adjusted SSI rates was found across the participating centers, ranging from 0% to 32%. The following variables were found to be independent predictors of SSI:

- Patients with Ankle-Brachial Index (ABI) less than 0.35 had a higher risk of SSI.
- Operative skin preparation using chlorhexidine (instead of iodine) was associated with a lower risk of SSI, especially in patients with tissue loss.
- Patients receiving 3 or more units transfusion during their admission had a higher risk of SSI.
- Surgery time of more than 220 minutes was associated with a higher risk of SSI.

Based on these identified risk factors, the committee provided participants a Center Opportunity Profile for Improvement (COPI) report specific to the procedures they have entered into the database, to identify their best opportunity to reduce SSI. A sample COPI report is shown to the right.

Sample Center Opportunity Profile for Improvement (COPI) Report

| COPI                                        | VQI wound infection rate       |                               |                                     | 3.6%                                                                                                       | SVS PSO |
|---------------------------------------------|--------------------------------|-------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------|---------|
| Center Name                                 |                                |                               |                                     |                                                                                                            |         |
| Your center's number of procedures          |                                |                               |                                     | 21                                                                                                         |         |
| Your center's wound infection rate          |                                |                               |                                     | 28.6%                                                                                                      |         |
| Your center's wound infection expected rate |                                |                               |                                     | 5.9%                                                                                                       |         |
| Predictors of wound infection               |                                |                               | Your Center                         |                                                                                                            |         |
| VQI Average                                 | Chlorhexidine Skin Prep<br>60% | Transfusion ≥ 3 units<br>5.8% | Procedure time > 220 minutes<br>50% | Improvement Opportunity                                                                                    |         |
|                                             | Higher is better               | Lower is better               | Lower is better                     |                                                                                                            |         |
| Your Center                                 | 57%                            | 33%                           | 71%                                 | Significantly higher infection rate than expected. Switch to Chlorhexidine. Reduce number of transfusions. |         |

## Value of Regional Quality Group Meetings

In addition to the real-time, customizable reports available through the database, participating centers and physicians receive risk-adjusted benchmarked reports of key quality measures at their regional quality group meetings. The risk-adjusted reports compare their center's performance to others in the region, as well as their regional group's performance to other regional groups of the VQI. These reports provide insight for initiating quality improvement projects that focus on practice changes and impact the quality of patient care. An example risk-adjusted length of stay benchmarked report comparing VQI regional groups is shown to the right.

Sample risk-adjusted length of stay benchmarked report comparing VQI regional groups

