Discussion | The VA uses the O to E ratio method, which estimates performance by using group-level data that produces an O to E ratio that almost always has a value greater than 0. When comparing patient-level outcomes, the ability to adjust for risk using the O to E ratio is limited for patients for whom no complications occurred, and the curve is more dependent on the number of events in a short time span, rather than being dependent on each patient’s outcome related to presurgical risk.

The visual presentation of the risk-adjusted cumulative summation chart (O – E) allows for an examination of the process in control events, in better-than-expected performance, and in out-of-control events. The use of real-time cumulative summation (O – E) complements the existing O to E ratio method to provide an informative, real-time visual representation of ongoing surgical performance. It may provide a more intuitive presentation of the process of care to health care providers and administrators.

Monique Boudreaux-Kelly, PhD
Mark Wilson, MD, PhD
Malak Bokhari, MD, MPH

Author Affiliations: Pittsburgh Research Office, Research StatCore, Pittsburgh, Pennsylvania (Boudreaux-Kelly); Department of Surgery, VA Pittsburgh Healthcare System, Pittsburgh, Pennsylvania (Wilson, Bokhari).

Corresponding Author: Malak Bokhari, MD, MPH, Department of Surgery, VA Pittsburgh Healthcare System, University Drive Campus (112 U), Pittsburgh, PA 15240 (malak.bokhari@va.gov).


Author Contributions: Dr Bokhari had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. Study concept and design: All authors. Acquisition, analysis, or interpretation of data: All authors. Drafting of the manuscript: Boudreaux-Kelly, Bokhari.

Critical revision of the manuscript for important intellectual content: All authors. Statistical analysis: Boudreaux-Kelly. Administrative, technical, or material support: Wilson, Bokhari. Study supervision: Bokhari.

Conflict of Interest Disclosures: None reported.

Previous Presentation: This paper was presented at the 38th Annual Surgical Symposium of the Association of VA Surgeons; April 6, 2014; New Haven, Connecticut.


ASSOCIATION OF VA SURGEONS
The Use of Joint Incentive Funding to Create a Department of Veterans Affairs–Department of Defense Vascular Surgery Program

Vascular surgery is critical to military management of wartime casualties and, at the same time, to aging veterans with chronic vascular disorders.1,2 A federal system of collaboration in a restrictive health care environment can expand and enhance the provision of vascular care. We report our experience in developing and sustaining a joint effort between the Department of Veterans Affairs (VA) and the Department of Defense (DOD) to create a vascular surgery program using joint incentive funding (JIF).3

Methods | We provide a review of a successful JIF program, the first to combine the vascular and endovascular services of the US Air Force and VA Medical Centers to offer comprehensive
and additive care as one component of a multidisciplinary, JIF-funded Heart, Lung, and Vascular Center. Grant funding is obtained through a competitive process and utilizes fiscal resources from both departments to support concept proposals. Investment funding for personnel, facility improvement, and equipment is provided for 2 years. Following-year funding is based on the volume of patient care at program onset, rewarding early clinical productivity.

Earnings represent VA-DOD JIF program cost avoidance. The cost difference between JIF-supported care and treatment received in community health care systems is calculated using Current Procedural Terminology codes, diagnosis related groups, and a set Civilian Health and Medical Program of the Uniformed Services Maximum Allowable Charge.4 Return on investment is the difference between JIF investment and earnings.

Results | The annual volume of vascular surgery cases related to the JIF proposal increased steadily over 3 years (from 222 cases in the first year, to 325 cases in the second year, to 352 cases in the third year) (Figure 1). This included 53 aortic and 405 endovascular procedures. Similar increases in outpatient visits to the Heart, Lung, and Vascular Center (from 648, to 732, to 1064 visits) and in noninvasive vascular laboratory investigations (from 1288, to 1399, to 1698 investigations) occurred. The vascular surgery workload at the Heart, Lung, and Vascular Center augmented an existing VA Medical Center vascular contingent with growth in combined cases (from 541, to 595, to 721 cases), outpatient visits (from 2437, to 2767, to 3105 visits), and vascular laboratory investigations (from 3526, to 3579, to 3889 investigation). The investment in the JIF program was $1.3 million (for personnel and equipment). Cumulative earnings tallied $9.88 million with a combined return on investment of $8.58 million (Figure 2). Additional DOD benefits included clinical currency and readiness for deployable assets; uninterrupted, sophisticated home-based patient service during war; and the establishment of a unique US Air Force vascular surgery graduate medical education program.

Discussion | The detailed planning and implementation demanded by competitive JIF grant processes facilitated the creation of a new, joint VA-DOD vascular surgery program that has proven to be financially and clinically desirable.
From the DOD perspective, federal programs such as this promote readiness and currency skills for military personnel, maintain services during operations, and support the vascular surgery graduate medical education program. From the VA perspective, such programs provide a sophisticated, cost-effective capacity to meet demand while simultaneously serving the VA's educational mission. Previous regional JIF endeavors include programs in nephrology, neurosurgery, and cardiothoracic surgery with returns on investment ranging from 10% to 284%.

The challenges to the development of the program have been the implementation of minimally integrated electronic medical record systems and the coordination of vascular care over a large geographical area. At the same time, encouraging clinical and financial outcomes led to additional VA-DOD collaborations. Specifically, an approved JIF Triage and Federal Care Initiative established an administrative-clinical management hub for prompt triage consultations and as a regional transfer center. The JIF-hired clinical specialists are able to access dual-system information and electronic health records with adjacent VA and DOD computers. This ensures access to care goals with prompt assignment to facility and health care provider, and assists in returning beneficiaries in community hospitals back to federal facilities.

The joint VA-DOD vascular surgery program successfully used shared personnel, facilities, and resources to care for patients in VA and DOD health care systems. The benefits of JIF have been substantial, with considerable fiscal savings for the federal government. Importantly, collaboration has provided our nation's veterans and military personnel with improved access to complex vascular and endovascular surgical care.

Robert E. Noll Jr, MD
B. Zane Atkins, MD
John Carson, MD
James Sampson, MD
David Dawson, MD
Scott Hundahl, MD
W. Darrin Clouse, MD

Author Affiliations: Division of Vascular Surgery, Sacramento VA Medical Center, Mather, California (Noll, Carson, Hundahl); Division of Vascular Surgery, David Grant Medical Center, Travis Air Force Base, California (Noll, Sampson, Dawson, Clouse).

Corresponding Author: Robert E. Noll Jr, MD, Division of Vascular Surgery, Sacramento VA Medical Center, 10535 Hospital Way, Mather, CA 95655 (robert.noll@va.gov).


Author Contributions: Dr Noll had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: All authors.

Acquisition, analysis, or interpretation of data: Noll, Carson, Sampson, Hundahl, Clouse.

Drafting of the manuscript: Noll, Hundahl.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Noll.

Administrative, technical, or material support: Noll, Atkins, Carson, Sampson, Dawson, Clouse.

Study supervision: Noll, Atkins, Dawson, Hundahl, Clouse.

Conflict of Interest Disclosures: None reported.

Methods | Patients with histologically confirmed nonmetastatic pancreatic adenocarcinoma with invasion of the large vessels by the tumor were selected from the Surveillance, Epidemiology, and End Results database, a population-based cancer registry encompassing 28% of the US population. Those who underwent resection were not included in our study. Patients who received external beam radiotherapy or who did not receive radiation were included. Correlations between clinical and pathologic variables were sought using the Pearson χ² test, the Fisher exact test, and univariate and multivariate logistic regression. Survival rates were compared using the log-rank test and multivariate Cox regression. P < .05 was found to be statistically significant. This study did not require institutional review board approval as the Surveillance, Epidemiology, and End Results database does not contain protected health information.

Results | Between 1988 and 2010, a total of 9786 patients with localized unresectable pancreatic adenocarcinoma were iden-