

EDITORIAL

## VASCUNET, VQI, and the International Consortium of Vascular Registries — Unique Collaborations for Quality Improvement in Vascular Surgery

Twenty-two years ago, a few enthusiastic pioneers met in Lisbon and laid the foundation for VASCUNET, an open-minded cross border collaboration of European and Australasian vascular surgeons dedicated to vascular health service research and quality improvement ([www.vascunet.org](http://www.vascunet.org)). This was before many important innovations in digital communication and data acquisition, when less than 50% of data were stored using digital technologies.<sup>1</sup> Since then, the digital revolution and rapid innovation in healthcare has led to the collection and analysis of “big data”, which has become an important tool in modern medicine.<sup>2</sup> Over the years, more than 25 joint publications of VASCUNET have been published in the *European Journal of Vascular and Endovascular Surgery* and in the *Journal of Vascular Surgery*. Hereby, VASCUNET was able to contribute to the high quality of the two leading journals in vascular surgery and spread the message to a global audience. In addition, more than 50 international meetings have been held by the European Society for Vascular Surgery (ESVS) VASCUNET quality improvement network, illuminating the fact that vascular surgeons can improve patient safety without borders.<sup>3</sup>

Meanwhile, in the United States, the Vascular Study Group of New England (VSGNE) was established in 2003.<sup>4</sup> The VSGNE grew rapidly and served as an example for the development of other regional quality groups, which culminated in the formation of the Society for Vascular Surgery (SVS) Vascular Quality Initiative (VQI) in 2011. The VQI is an international organisation (including Canada and Singapore) that consists of 18 regional groups and has over 500 000 patients in the database.<sup>5</sup> To date, more than 230 peer reviewed publications have been published from the SVS VQI, and all 18 regional quality groups meet bi-annually to review their data and develop quality initiatives.

In 2014, the International Consortium of Vascular Registries (ICVR) was founded as an amalgamation of VASCUNET and SVS VQI to conduct quality improvement projects in vascular surgery using real world data from clinical registries and administrative data sources.<sup>6</sup> Owing to this global expansion, countries from South America and Asia were introduced to the research network. To date, members and interested potential members from more than 30 different countries join the two semi-annual meetings (alternating between Europe and the United States). VASCUNET, VQI,

and ICVR continue to welcome further development and involvement of new registries in the international collaboration. Just in the past year, vascular registries in Portugal, Luxembourg, Serbia, and Greece have joined VASCUNET, and others are currently considering participation.

Although the progress in international quality improvement is impressive, many challenges remain and there is much room for further improvement. For instance, the latest VASCUNET report on lower limb amputations involved a population base of 259 million inhabitants from Europe and Australasia, but more than 500 million Europeans were not included.<sup>7</sup> Nevertheless, the results of the amputation report recently revealed wide variation between the European and Australasian healthcare systems, leading to a political debate in Hungary about the necessity for vascular infrastructure to decrease the high incidence of major amputations.

Similarly, 10 years ago the first VASCUNET report on abdominal aortic aneurysms (AAAs) demonstrated disparate outcomes in the United Kingdom compared with eight other countries, providing a focus for quality improvement efforts.<sup>8</sup> During the ensuing four years, the UK Vascular Services Quality Improvement Programme (VSQIP) took note of these findings and was able to dramatically decrease mortality after elective AAA repair from 7.5% to 2.4%, emphasising the power of feedback and benchmarking.

In the United States, all centres enrolled in the VQI receive regular reports comparing relevant outcomes with regional and national colleagues. Additionally, VQI centres receive biannual “Centre Opportunity Profiles for Improvement” reports, which are a powerful tool that translates procedural results into actionable centre level data that can be used to improve patient care. In addition to innumerable ongoing regional and local quality initiatives in VQI centres, there are also ongoing national quality initiatives, including increasing the post-operative prescription of medications known to increase long term survival (statin and antiplatelet therapy) and improvement in long term follow up of endovascular AAA with appropriate imaging.

Despite the clear advantages of participation in VASCUNET and ICVR, some countries have not elected to join these quality improvement efforts. Obstacles to participation include the difficulties with developing a data privacy compliant national registry and challenges with accessing administrative data. These issues have become particularly problematic since the European Union (EU) General Data Privacy Regulation was enacted. Importantly, the ICVR can

support the process of implementing data privacy compliant solutions, and collaborating with other countries can provide important resources for developing a compliant registry.<sup>9,10</sup>

VASCUNET, VQI, and ICVR are far more than a group of registry representatives or real world evidence experts. In the past year, 15 project proposals have been meticulously discussed by the ICVR group. Important projects have been completed by methodological group collaboration to overcome challenges that are inherent in registry research, including limitations associated with retrospective cohort studies (e.g. propensity score matching or instrumental variables methods). Another important scope of this global collaboration is the development of device evaluation methods to accomplish the requirements of the EU Medical Device Regulations, which will be increasingly important given recent regulatory changes in Europe.

To date, ICVR projects have focused on evaluation of variation and international benchmarking of vascular practice (e.g. treatment of peripheral arterial occlusive disease, aortic aneurysms, and carotid stenosis). Discussions are ongoing to increase the impact of the collaborations by developing quality initiatives based on identified best practices with subsequent prospective monitoring of adherence to societal guidelines. An example would be monitoring (e.g. statin/antiplatelet therapy) for patients with symptomatic peripheral arterial disease. Another impactful project of the ICVR that is under discussion is monitoring of long term outcomes of paclitaxel coated or other high risk devices using international data. Against the backdrop of an ongoing debate concerning the validity of results from randomised controlled trials, real world evidence from registries can provide clarity in these discussions. Lastly, ICVR offers the unique advantages of big data, the increased power from the large *n* of combining multiple registries. There is potential for large scale analysis of rare events and conditions such as vascular malignancies and long term monitoring of outcomes. Defined project proposals initiated by researchers are welcomed. This rapidly growing global collaboration needs your support to improve the data privacy compliant real world evidence, and additional international collaborators are welcomed.

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Christian-Alexander Behrendt\*

Department of Vascular Medicine, University Heart Centre  
Hamburg, University Medical Centre Hamburg-Eppendorf,  
Hamburg, Germany

Maarit Venermo

Department of Vascular Surgery, Helsinki University Hospital  
and University of Helsinki, Helsinki, Finland

Jack L. Cronenwett

Department of Surgery Dartmouth-Hitchcock Medical  
Centre, Lebanon, NH, USA

Art Sedrakyan

Healthcare Policy and Research, Weill Cornell Medical  
College, New York, NY, USA

Adam W. Beck

Division of Vascular Surgery and Endovascular Therapy,  
University of Alabama at Birmingham, Birmingham, AL, USA

Jens Eldrup-Jorgensen

Division of Vascular and Endovascular Surgery, Maine  
Medical Centre, Portland, ME, USA

Kevin Mani

Department of Surgical Sciences, Uppsala University,  
Uppsala, Sweden

on behalf of VASCUNET, the Vascular Quality Initiative and  
the International Consortium of Vascular Registries

\*Corresponding author. Department of Vascular Medicine,  
Work Group GermanVasc, University Medical Centre  
Hamburg-Eppendorf, Hamburg, Germany.  
Email-address: [ch.behrendt@uke.de](mailto:ch.behrendt@uke.de) (Christian-  
Alexander Behrendt)