

<b>Institution: University of Aberdeen</b>
<b>Unit of Assessment: 2 - Public Health, Health Services and Primary Care</b>
<b>Title of case study: Development of an international standard measure for the reporting of patients' assessment of their varicose veins</b>
<p><b>1. Summary of the impact</b></p> <p>University of Aberdeen research has directly impacted on clinical practice with regard to the treatment of varicose veins. The University's Health Services Research Unit (HSRU) developed and validated the Aberdeen Varicose Vein Questionnaire (AVVQ), which allows patients to self-assess the severity of their varicose veins. Current national and international guidelines now recommend that as part of the assessment of outcome for patients with varicose veins, patients' self-assessment of their veins be routinely undertaken - with the AVVQ the most commonly recommended measure. The Department of Health in England also mandated the use of the AVVQ and all patients in England are now required to complete the AVVQ before and after treatment. Results from these questionnaires are being used by individual NHS providers to assess the quality of their care, to improve their services, and for planning and commissioning of services nationwide.</p> <p>The claimed impact, as defined by REF guidance, therefore includes impact upon <i>public policy and services; practitioners and professional services</i> and <i>health and welfare</i>.</p>
<p><b>2. Underpinning research</b></p> <p>In the 1990s, a key strand of research at the University of Aberdeen's Health Services Research Unit was the development, validation and implementation of patient reported outcome measures – these are measures by which patients rate their own health. This involved a rigorous programme of research which incorporated state-of-the-art questionnaire development and validation methods including health economic approaches. The research led to the development of a suite of measures tailored to the specific needs of patients with differing health conditions including the development of measures for varicose veins, low back pain and dyspepsia.</p> <p>One of the primary outcome measures developed and validated at that time was the AVVQ (Aberdeen Varicose Vein Questionnaire) - a 13-item measure which allowed patients to self-assess all aspects of their varicose veins including physical symptoms such as pain, ankle oedema, ulcers, the effect on daily activities, and cosmetic issues.</p> <p>The researchers involved in the development and validation of the AVVQ were:</p> <ul style="list-style-type: none"> <li>• Andrew Garratt (Research Fellow, HSRU &amp; Dept of Public Health, University of Aberdeen)</li> <li>• Danny Ruta (Lecturer, Dept of Public Health, University of Aberdeen)</li> <li>• Ian Russell (Director, HSRU, University of Aberdeen)</li> <li>• Ken Buckingham (Research Fellow HSRU, University of Aberdeen)</li> <li>• Mona Abdalla (Research Fellow HSRU, University of Aberdeen)</li> <li>• Clinical expertise was led by Zygmunt Krukowski, Consultant Surgeon, Aberdeen Royal Infirmary (now honorary chair, University of Aberdeen) and Lesley MacDonald, Department of Public Health Medicine, Grampian Health Board (the local health board).</li> </ul> <p>The final validated version of the AVVQ was published in 1993 [1], followed by further research exploring its properties in the clinical setting, published in 1996 [2].</p> <p>The AVVQ has also been subjected to external assessments of validity by other groups [3] which have further confirmed the AVVQ to be a valid and specific measure of varicose vein quality of life.</p>

### 3. References to the research

#### Research outputs

- [1] Garratt AM, Macdonald LM, Ruta DA, Russell IT, Buckingham JK, Krukowski ZH. *Towards measurement of outcome for patients with varicose veins*. *Qual Health Care*. 1993 Mar; 2(1):5-10.

*This paper describes the development and validation of the original Aberdeen Varicose Vein measure. The measure remains the accepted standard in patient-reported measurement of varicose veins. (Cited 160 times as at 12/8/13, Google Scholar)*

- [2] Garratt AM, Ruta DA, Abdalla MI, Russell IT. Responsiveness of the SF-36 and a condition-specific measure of health for patients with varicose veins. *Qual Life Res*. 1996 Apr; 5(2):223-34

*This paper describes further research undertaken around the properties of the AVVQ showing that it was more responsive to changes in patient condition compared with the widely used generic measure of quality of life – the SF36 measure. It also showed that the measure could easily be used and adopted in routine health care. (Cited 80 times as at 12/8/13, Google Scholar)*

- [3] *Evaluating and improving health-related quality of life in patients with varicose veins*. Smith JJ, Garratt AM, Guest M, Greenhalgh RM, Davies AH *J Vasc Surg* 1999; 30:710–719

*This paper describes the external testing of the AVVQ by a different research group which confirmed the AVVQ to be a valid and specific measure of varicose vein quality of life. (Cited 147 times as at 12/8/13, Google Scholar).*

#### Key grant funding associated with the research

The development of the AVVQ was supported by a Chief Scientist Office, Scottish Government competitively awarded grant:

*Grampian Health Outcomes Study*. Chief Scientist Office, March 1991 to Feb 1994, £70,000

The wider methodology and outcomes development work was also supported by a further grant from the Kings Fund:

*Grampian Health Outcomes Study 2: implementing a package of outcome measures in a service setting*, Kings Fund Centre for Health Service Development, October 1992 to Sept 1993, £30,000

Both the research outputs and research grant award underwent rigorous independent external peer review by the funding bodies.

### 4. Details of the impact

The development of the AVVQ has had impact in a range of areas:

- **National and international adoption of the AVVQ as the measure of choice in research studies.** Varicose veins are a common medical condition, with approximately 25% of women and 15% of men having some form of visible varicose veins. The recently introduced minimally invasive therapies for the treatment of varicose veins has led to their effectiveness being assessed in a number of observational studies and randomised controlled trials. The AVVQ has become the most commonly used disease specific questionnaire in venous studies and has been used in all of the large recent randomised controlled trials eg a review of published venous studies in the *Journal of Vascular Surgery, European Journal of Vascular and Endovascular Surgery and Phlebology* found that out of 60 studies assessed, 47 studies adopted the AVVQ as the gold standard measure for assessment of disease-specific quality of life. The AVVQ has also been translated into Dutch in 2009 [a] and Portuguese in 2012 [b] by international groups in the Netherlands and Brazil and validated for use in these countries.
- **Recommendation of the AVVQ as a preferred measurement tool by international agencies:** Reporting standards for the treatment of varicose veins issued by the *American Venous Forum* and the *Society of Interventional Radiology* recommended from 2007 that the

use of both generic and venous disease-specific measures to be the accepted standard for studying quality-of-life (QOL) changes. Specifically, it recommended the AVVQ as one of only three acceptable disease-specific validated questionnaires worldwide. More recently in 2011, the clinical practice guidelines of the Society for Vascular Surgery and the American Venous Forum strongly recommended that, as part of the assessment of the outcome of treatment, a disease-specific instrument (such as the AVVQ) be used to evaluate patient-reported outcomes [c]. The current UK NICE guidelines [d] on the diagnosis and treatment of varicose veins also highlights the key role disease-specific quality of life measures, including the AVVQ, contribute to the assessment of the effectiveness of different treatment options and subsequent recommendations on their use in the NHS.

- Adoption of the AVVQ as the mandated measurement of quality of varicose vein treatment in the NHS in England to inform NHS service planning:** In 2008, Lord Darzi published a review of the NHS in England entitled *High Quality Care for All*. The review was commissioned by the Prime Minister, the Chancellor and the Secretary of State for Health to develop a vision of a health service fit for the 21<sup>st</sup> century. A core tenet of this review was that “quality should be at the heart of the NHS” and a recommendation made that the NHS should “systematically measure and publish information about the quality of care ... including patients’ own views on the success of their treatment and the quality of their experiences” - so called “PROMs”, or Patient Reported Outcome Measures. This information would then be used to assess the quality of services provided across the NHS and inform service redesign [e]. To enable this, the Standard NHS Contract for Acute Services, was revised to include a requirement for all licensed providers of NHS-funded procedures including varicose vein surgery to ask patients to complete PROM questionnaires before and after surgery, from April 2009. The associated guidance document produced by the Department of Health mandated the use of the AVVQ as the disease-specific PROM for varicose vein surgery [f]. Since April 2009, all patients in England undergoing varicose vein surgery now complete the AVVQ before and after their surgery. To date over 27,000 patients have already completed these multiple assessments using the AVVQ. Data from these measures are collated centrally by the NHS Information Centre in England and reports produced quarterly to allow the assessment of quality of service across the country and the planning of service delivery nationwide [g]. Already the PROMs data for varicose vein surgery – ie the AVVQ data - has shown that treatment in England results in significant improvement in health for patients [h]. Patients with the lowest - less severe - pre-treatment scores have been found to benefit least from surgery. These observations are now being used by individual NHS providers to assess the quality of their care (the NHS Information Centre provides data by provider) and to improve their services in line with providers seen to provide high quality care. Data is also being used for planning and commissioning of services nationwide. Data is now also being linked routinely to national Hospital Episode Statistics by the National Information Centre to allow long-term tracking of outcomes.

The claimed impact, as defined by REF guidance, therefore includes impact on: *public policy and services* particularly through the specification of AVVQ-reporting as part of the NHS contract; *practitioners and professional services* through the widespread use and adoption of the measure and *health and welfare* through its use to plan NHS services.

##### 5. Sources to corroborate the impact (indicative maximum of 10 references)

- [a] Klem TM, Sybrandy JE, Wittens CH. Measurement of health-related quality of life with the Dutch translated Aberdeen Varicose Vein Questionnaire before and after treatment. *Eur J Vasc Endovasc Surg*. 2009 Apr;37(4):470-6

*This paper describes the translation and validation of the AVVQ into Dutch for use in the Netherlands and other Dutch speaking contexts.*

- [b] Leal, Flávia de Jesus et al. Translation and cultural adaptation of Aberdeen Varicose Veins Questionnaire (Tradução e adaptação cultural do Questionário Aberdeen para veias varicosas). *J. vasc. bras*. 2012, 11, 34-42.

*This paper describes the translation and validation of the AVVQ into Portuguese for use in*

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*Brazilian populations.*

- [c] DGloviczki P, Comerota, Dalsing MC. The care of patients with varicose veins and associated chronic venous diseases: Clinical practice guidelines of the Society for Vascular Surgery and the American Venous Forum. *Journal of Vascular Surgery*,53, 2S-48S, 2011

*This paper describes the Society for Vascular Surgery and the American Venous Forum guidelines on the management of varicose veins, and identifies the importance of patient reported measures including the AVVQ.*

- [d] NICE. Varicose veins in the leg: the diagnosis and management of varicose veins. Clinical guidelines, methods and recommendations. July 2013.<http://www.nice.org.uk/nicemedia/live/14226/64567/64567.pdf>

*This NICE guidance on the diagnosis and management of varicose veins highlights the importance of quality of life measures including as the AVVQ in the assessment of the effectiveness of different treatment options.*

- [e] Department of Health (2008). High Quality Care For All. NHS Next Stage Review Final Report.

*This is Lord Darzi's report which was presented to Parliament and which recommended the use of patient reported outcomes in the NHS for specific treatments including varicose vein surgery.*

- [f] DH (2008). Guidance on the routine collection of Patient Reported Outcome Measures (PROMs).

*This document outlined the formal guidance from the Department of Health on how patient reported measures should be collected by NHS providers in England (in response to the Darzi report above) and mandates the use of the AVVQ for the disease-specific measurement of varicose vein surgery.*

- [g] NHS Information Centre. <http://www.ic.nhs.uk/proms>

*This is the website of the NHS Information Centre which collates all the PROM data and produces reports of the service quality based on the PROMs. The AVVQ data is presented in the reports related to varicose vein surgery which are used by NHS providers for service planning.*

- [h] Nesbitt C, Wilson WR, Lees TA, Stansby G Interpretation of patient-reported outcome measures for varicose vein surgery. *Phlebology*, 2012;27:173-8

*This paper is one of the first analyses of the PROMs data to interpret the quality of venous treatment in the UK.*