

## SAIVMs core audit standards

### EIGHT STRAIGHTFORWARD STANDARDS

The Scottish Government's report Delivering for Health required mechanisms for the assessment of performance in neurosciences against standards, and action plans to address areas of improvement. The SAIVMs Steering Committee has approved standards for the care of adults with intracranial vascular malformations (IVMs) in Scotland. Current practice within NHS Scotland could be compared against these standards, under the direction of the SAIVMs steering committee.

Most of the SAIVMs audit standards are derived from existing guidelines for adults with neurological and neurosurgical disorders, published by **SIGN**, or by the three relevant professional organisations (**SBNS**, **ABN**, and **BSNR**). A complete, referenced document can be found at: <http://saivms.org/reports.asp>. The eight core audit standards are:

1. **Every adult diagnosed with an IVM should be informed of their diagnosis.** If the adult has mental incapacity, their guardian, welfare attorney, legal representative, or next of kin should be informed.
2. **Every adult diagnosed with an IVM should be assessed by a consultant neurologist or neurosurgeon.**
3. **Every radiological diagnosis of an IVM should be confirmed by a consultant neuroradiologist, following their review of the adult's brain imaging.**
4. **Patients undergoing neurosurgery** should receive SIGN recommended standards of care for post-operative management.
5. **Patients with one or more epileptic seizures** should receive SIGN recommended standards of care.
6. **Patients who have suffered a stroke** due to their IVM should receive SIGN recommended standards of care, which are themselves audited (<http://www.strokeaudit.scot.nhs.uk>). Subarachnoid haemorrhage management should adhere to the BSNR/SBNS consensus statement.
7. **Patients who are admitted to hospital because they are acutely ill with a neurological problem** should be seen by a neurologist within 24-48 hours (ABN).
8. **The provision of stereotactic radiosurgery** should include prospective audit (SBNS).

# Evaluation of SAIVMs standard 2

## REFERRAL PATTERNS IN SCOTLAND 1999-2003

Ideally, patients diagnosed with an intracranial vascular malformation should have an initial assessment by a neurosurgeon or a neurologist. We audited the clinical assessment of adults with brain arteriovenous malformations (AVMs) in Scotland against this standard.

This audit was based on every adult with an AVM in this prospective, population-based disease register of Scottish residents, aged  $\geq 16$  years, at the time of their AVM diagnosis in 1999-2003.

**229 adults** were first diagnosed with an AVM 1999-2003, of whom 13 (6%) were not seen at a neuroscience centre, and **11 (5%) were not discussed with a relevant specialist.**

Looking at this in more detail, there was a variety of reasons for these 11 patients not being discussed with a relevant specialist. Two asymptomatic AVMs were diagnosed **at autopsy**. Four more AVMs were diagnosed at autopsy, two because of fatal intracranial haemorrhage, and two following an epileptic seizure.

Three people, who were over the age of 70 years at diagnosis, were diagnosed with an incidental AVM, and were not referred for specialist assessment. The reasons for two other patients not being referred remain unknown.

Perhaps unsurprisingly, the patients who were managed at the four neuroscience centers in the population were significantly **younger** (median 47 versus 70 years,  $p = 0.002$ ) and **more likely to have symptomatic AVMs** (odds ratio 3.8, 95%CI 1.1 to 13.2) than those who were not referred.

## IMPLICATIONS

Whilst some of the reasons for adults not being discussed with a relevant specialist were understandable, some were not (based on medical records review). We advocate appropriate referral. This process is likely to be intertwined with patients and/or their relatives being informed about the IVM diagnosis (SAIVMS audit standard 1), which will be the subject of a future audit report.

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