Primary stroke prevention: refining the "high risk" approach

What are the ingredients for success and what are the implications for general practice?

THE IMPACT OF STROKE remains considerable, despite a modest decline in case fatality[1] and an encouraging reduction in incidence on the west coast of Australia during the past decade.[2] To the optimists among us, it appears that some efforts, particularly in public health and primary care, are paying off. However, population risk-factor surveys indicate that, although the prevalence of smoking has declined, the prevalences of hypertension and hypercholesterolaemia have changed minimally and the prevalences of obesity and diabetes have increased dramatically over the past decade.[1,3] The role of the general practitioner is pivotal in identifying and managing these risk factors.

The Avoid Stroke as Soon as Possible (ASAP) general practice stroke audit, published in this issue of the Journal (*page 312*),[4] provides further evidence that modifiable risk factors for stroke and vascular disease are highly prevalent in the Australian community. Importantly, the ASAP audit has measured the prevalence of atrial fibrillation and transient ischaemic attack (TIA). These factors are unique to stroke pathophysiology and are associated with high absolute risk, but have received limited attention in previous risk-factor surveys. Sturm et al reviewed 16 148 general practice consultations surveyed from a random sample of 321 GPs across five States. Seventy per cent of patients aged 30 years or more had at least one major risk factor; 34% had two or more. Not surprisingly, hypertension (44%) and hypercholesterolaemia (43%) were the most prevalent modifiable factors. Importantly, the proportion of older patients at high absolute risk was considerable. For example, among the men, 14% aged 70–79 years and 16% aged over 80 years had atrial fibrillation. Reliable measurement of the occurrence of TIA is more difficult given the variability in presentation and clinical assessments. However, the figure of 4% for any history of TIA is valuable information and provides a baseline for further assessments.

The high prevalence of vascular risk factors identified in the ASAP survey highlights the potential value of screening during all routine general practice consultations to identify individuals with high absolute risk of stroke. The use of absolute-risk estimates in guiding therapeutic decision making is a well-established paradigm and is being adopted increasingly often in national and international vascular disease management guidelines.[5] The value of risk stratification is highlighted by the exercise of choosing the most appropriate antithrombotic agent for primary stroke prevention in atrial fibrillation. Although the risk of first stroke in atrial fibrillation averages 5% per year, risk varies from 1% or less per year up to 12%, depending on additional clinical characteristics.[6] At 1% risk, any benefit from anticoagulation therapy would be nullified by the approximately 1% risk of major bleeding events. Antiplatelet therapy would be the more appropriate option in this setting. In contrast, at 12%, the reduction in risk of thromboembolic events achieved with anticoagulation far outweighs the risk of adverse bleeding events. In this setting, warfarin shows a clear net benefit and would be more appropriate. Absolute risk translates readily into clinically useful statistics, such as "number needed to treat" at the bedside, and, at the population level, the recently proposed "population impact number".[7]

At a practical level, however, owing to the complexity of interacting risk factors, risk stratification typically requires decision-assistance charts or computer programs (generally based on Framingham risk estimates).[8,9] At present, such systems are still under evaluation or just beginning to be adopted in general practice. From the cost–benefit perspective, in the absence of a framework for risk stratification, identifying relatively low-risk populations with isolated risk factors increases the possibility that expensive drug therapies will be used as first-line options when low-cost, non-pharmacological interventions would be more appropriate. An example is a 58-year-old woman with moderate hypertension (repeated blood pressure readings 160/95 mmHg) and no other risk factors. Her absolute risk of stroke is 1.5% over five years.[10] Although she is a potential candidate for antihypertensive drug therapy, the low absolute risk may suggest to the patient there is questionable value in complying with prolonged drug therapy with its attendant side-effects. It indicates to the clinician that the number needed to treat over five years in this type of patient exceeds 120 to prevent one stroke.[11]

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Accepting the various difficulties and risks associated with screening in general practice, combining a "high risk" approach and an appropriately organised "mass" approach is likely to have a much greater impact on the overall burden of vascular disease. This combination helps minimise the problem of focusing efforts on very cost-effective treatment of small populations at high risk while ignoring the larger subgroup of the population at moderate risk, from where most vascular events emerge. Low-risk groups would also benefit from further surveillance for progression into higher-risk categories.

The ASAP stroke audit provides further evidence that considerable opportunity exists to reduce the burden of stroke and other vascular diseases. Quite rightly, the authors emphasise the importance of making the most of this opportunity. However, a prerequisite for success is a framework to facilitate rational use of interventions,

balancing absolute risk and potential benefit at both the individual and population levels. Although debate continues about the best decision-assistance tool to be used, any system will need to be simple and practical to use within the time and resource constraints of an already overburdened primary healthcare sector.

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Clinical practice guidelines: time to move the debate from the *how* to the *who*

Openness about all potential conflicts of interest, as well as the degree of agreement among members about the final guidelines, is the least we should expect

THE ASCENDANCY OF EVIDENCE-BASED medicine over the past decade has fostered an unprecedented growth in practice guidelines.[1-3] Departments of health and associated agencies, specialty societies and other medical organisations have all embraced the development of guidelines in the belief that adherence to their recommendations translates into benefits for patients (improved outcomes), practitioners (improved quality of care), and providers (improved cost-effectiveness).[4]

As the practice guideline movement has matured, the interest and debate surrounding guideline developments has shifted from the *what* to the *how*.[5]

In fact, the National Health and Medical Research Council's *Guidelines for the development and implementation of clinical practice guidelines*, published in 1995,[6] was a pacesetter in the *how* of guidelines, and at its core are the three criteria that underpin the quality of guidelines:

- a balance of healthcare disciplines in the guideline development group, together with consumer representation;
- a systematic review of relevant literature and stratification of the data according to a hierarchy of levels of evidence; and
- the generation of evidence-graded recommendations that also take into account the generalisability of the evidence, its practice relevance and resource implications.

Despite the availability of guidelines for developing guidelines,[6,7] recent reviews of practice guidelines have shown that most fail to meet quality standards.[1-3] This is hardly surprising, as guideline development is an intensive, laborious and at times uncertain task.[8] In essence, it is a human affair with all its attendant nuances, complexities and biases.

These human elements are illustrated in this issue of the Journal by Edmonds and colleagues (*page 332*)[9] in their account of the workings of the Australian COX-2-Specific Inhibitor Prescribing Group. The outcome of its deliberations is also published in this issue of the Journal (*page 328*).[10]

Recommendations for managing conflict of interests in practice guidelines development[3]

- A formal process should exist to disclose potential conflict of interest before the guideline development begins.
- All members of the guideline group should be involved in a discussion of conflicts of interest and how significant relationships will be managed.
- Participants who have relationships with industry, government agencies, healthcare organisations or specialty societies need not necessarily be excluded, but the group has to decide among itself a threshold for exclusion.
- There must be complete disclosure to readers of the practice guidelines of financial and/or other relationships with industry, government agencies, healthcare organisations and specialty societies.