

# Secondary Prevention of Stroke: *The role of the general practitioner*

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## Introduction

The increased risk of ischaemic events following a stroke, and the associated morbidity and mortality, makes secondary prevention an important therapeutic goal. Nevertheless, for reasons relating to both physicians and patients, a well-documented gap remains between evidence and clinical practice in many aspects of cardiovascular disease.

Reducing the burden of recurrent stroke clearly relies not only on an increasing understanding of the aetiological factors that influence the development of stroke, but also on the services of primary care physicians such as lifestyle modifications, pharmacological treatment and referral for consideration of surgery.

Assessment of secondary prevention and the discrepancy between evidence and practice is difficult due to the variations between clinical studies, for example in different target populations, length of follow-up, drop-out rates and outcomes. It is similarly challenging to relate the results of these clinical trials to individual patients, each with numerous risk factors of varying significance.

This study aims to review the literature to further elucidate the potential impact of primary care physicians in reducing the burden of stroke.

## Results

There is mounting evidence supporting the importance of primary care in enabling an individualized and patient-orientated approach, including incorporating feasible lifestyle and pharmacological interventions with which the patient will comply.

Several studies highlight deficiencies in effective assessment and management of cardiovascular risk factors. Findings also consistently demonstrate the impact of ongoing patient education on outcomes, a provision largely dependent on consultations with GPs and other community-based health professionals.

Accordingly, it is crucially important that GPs can co-ordinate all members of the community multi-disciplinary team effectively and also that the team themselves are well-informed regarding evidence for recommended strategies so they can be implemented successfully.

## Multi-disciplinary management

Evidence suggests that despite the proven efficacy of preventive strategies for stroke, they are often not utilized effectively (Brassard, 2009). There is also a strong evidence base that, for example, nurse practitioners in the community provide a central role in supporting GP with ongoing aspects of management such as lifestyle modification. As displayed on the right, creating reminders for patient and reinforcing the need to comply with therapy is the single most effective method of improving compliance, and NPs are well-placed to support this.

## Discussion

Despite significant progress in guidance regarding stroke prevention, the condition remains a leading cause of long-term disability. GPs are challenged with ensuring that guidance is implemented and maintained as intended.

Their unique position at the forefront of community medicine renders them especially well-placed to co-ordinate the multi-factorial and complex management of stroke patients and even to clarify guidance for non-physician colleagues.

Continuing education of both health professionals and patients will be vital in ensuring the reduction of stroke recurrence.

## Adherence to medications

Patient concordance with pharmacological therapies has long been documented as a significant cause for shortfalls in clinical outcomes. As such, methods of improving compliance have been widely researched.

A particular example is that of lipid-lowering drugs; despite compelling evidence regarding their effectiveness they remain widely underused. Several large studies have demonstrated promising absolute increases in adherence with relatively simple interventions (Schedlbauer, 2010).

## Methods

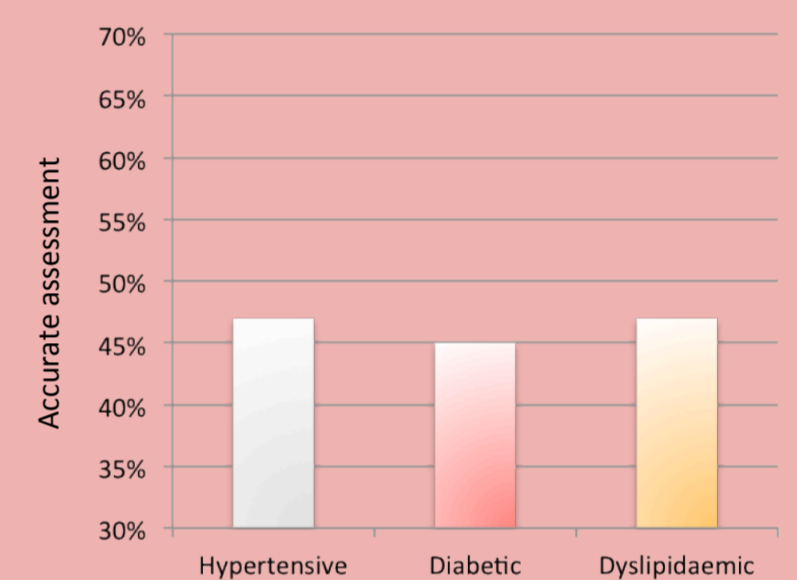
A systematic review was performed using the Pubmed database to further elucidate the potential role for GPs in secondary prevention of stroke. Search terms used were as follows:

{{("primary care) AND (stroke) AND (prevention)}}

Limiting the Pubmed search to the English language, humans and systematic review resulted in the identification of 78 papers, 11 of which were deemed sufficiently relevant to be included.

## Assessment of cardiovascular risk factors

Effective management of stroke in the community relies on accurate assessment of cardiovascular risk factors. Evidence-based audits of such assessment in primary care have demonstrated significant deficiencies.

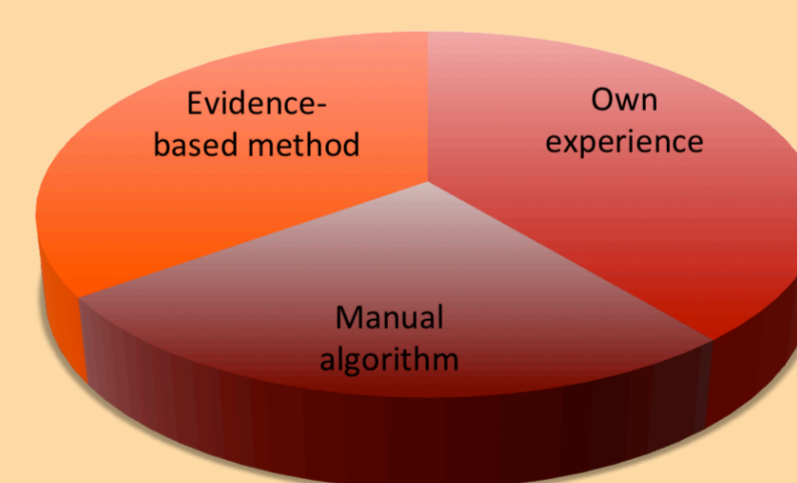


One recent study (Chen, 2011) noted satisfactory measurement of blood pressure, glucose and lipid control being assessed in accordance with accepted guidelines in less than 50% of patients. Implementation of more rigorous assessment using a team approach intervention resulted in impressive improvements in control of patient blood pressure, glucose and lipids.

## Professional education

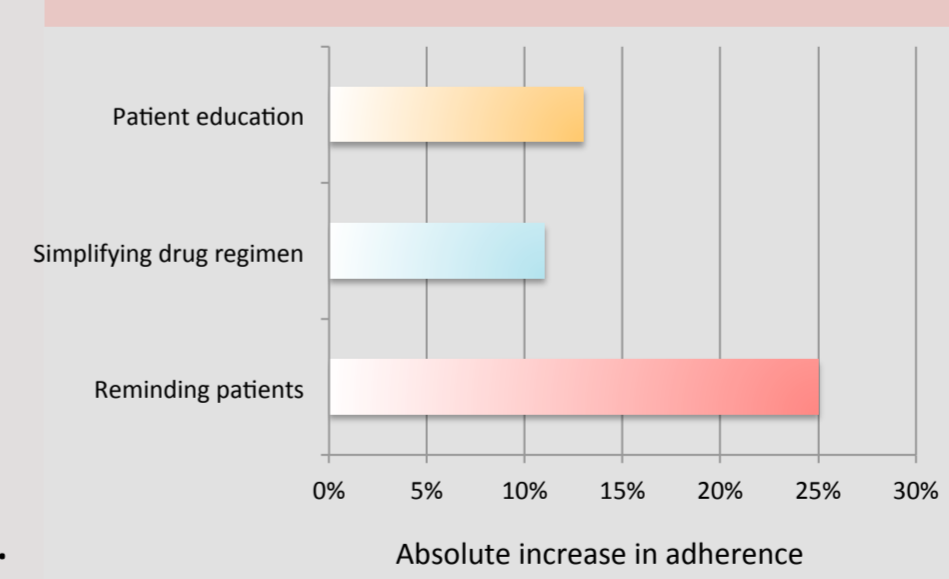
The literature also highlights the underuse of available evidence-based methods to improve management, particularly in the aspect of anticoagulation. This is particularly evident in the dosing of warfarin, for which effective dosing is proportional to stroke prevention.

A study by Nieuwlaat et al demonstrated primary care physician methods of dosing, comparing them with specialists.



GPs managed warfarin solely based on experience or on a manual algorithm more often, and were less likely to use evidence based dosing methods, such as anti-coagulation clinics, computerized decision support systems or patient self-management, despite their association with better patient outcomes.

Similar evidence is available with regard to numerous aspects of stroke prevention.



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