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Horizon scanning prioritising summary

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**Frequent home visits by nurses for
hypertensive patients.**

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PRIORITISING SUMMARY

REGISTER ID: 000131

NAME OF TECHNOLOGY: FREQUENT HOME VISITS BY NURSES FOR HYPERTENSIVE PATIENTS

PURPOSE AND TARGET GROUP: TO DECREASE “WHITE COAT” HYPERTENSION IN PATIENTS

STAGE OF DEVELOPMENT (IN AUSTRALIA):

- | | |
|---|---|
| <input checked="" type="checkbox"/> Yet to emerge | <input type="checkbox"/> Established |
| <input type="checkbox"/> Experimental | <input type="checkbox"/> Established <i>but</i> changed indication or modification of technique |
| <input type="checkbox"/> Investigational | <input type="checkbox"/> Should be taken out of use |
| <input type="checkbox"/> Nearly established | |

AUSTRALIAN THERAPEUTIC GOODS ADMINISTRATION APPROVAL

- | | |
|------------------------------|--|
| <input type="checkbox"/> Yes | ARTG number |
| <input type="checkbox"/> No | <input checked="" type="checkbox"/> Not applicable |

INTERNATIONAL UTILISATION:

COUNTRY	LEVEL OF USE		
	Trials Underway or Completed	Limited Use	Widely Diffused
Brazil	✓		

IMPACT SUMMARY:

Hypertension is a major public health problem in Australia. This summary investigates a potential public health program, which would involve frequent home visits from a community nurse to monitor the blood pressure of ‘hypertensive patients’ and their adherence to treatment.

BACKGROUND

High blood pressure is a major risk factor for coronary heart disease, stroke, heart failure, peripheral vascular disease and renal failure. Blood pressure (BP) is the force exerted by the blood on the walls of the arteries. In Australia, high blood pressure is defined as a systolic blood pressure (SBP) greater than or equal to 140 mmHg, or diastolic blood pressure (DBP) greater than or equal to 90 mmHg (AIHW 2004a).

“White coat hypertension” is the term used to describe individuals with abnormally elevated BP in a clinical environment and normal BP during normal daily life. White coat hypertension is defined as a BP that exceeds 140 mmHg for SBP and 90 mmHg for DBP, when measured in the surgery or clinic while ambulatory BP measurements include a SBP and DBP less than 135 mmHg and 85 mmHg, respectively. “White coat hypertension” may reflect an abnormal sympathetic response to the clinical environment, especially in the presence of a nurse or a doctor (Owens et al 1999; Verdecchia et al 2003).

“White coat hypertension” could have clinical significance as these individuals may be misdiagnosed as having refractory hypertension and be prescribed inappropriate antihypertensive drugs, or have their existing doses increased. This may produce harmful secondary effects and increase costs (Amado 1999). The Centers for Medicare and Medicaid Services in the United States makes the recommendation that treatment may not be required for white coat hypertensives who have normal ambulatory BP. However no randomised trial has ever been performed to determine if the treatment of white coat hypertension, in the absence of true hypertension, is beneficial or harmful (Verdecchia et al 2003).

CLINICAL NEED AND BURDEN OF DISEASE

The causes of high blood pressure are both biomedical and lifestyle oriented. Major risk factors include obesity, excessive alcohol consumption, physical inactivity, dietary salt intake and poor nutrition (low intake of fruit and vegetables and a high intake of saturated fat). Tobacco smoking increases the risk of heart attack and stroke in hypertensive individuals three fold. The risk of cardiovascular disease increases as the level of blood pressure increases (AIHW 2004a).

Hypertension is the most common of all cardiovascular conditions in Australia. The prevalence of hypertension in patients attending general practice is approximately 20 per cent and high blood pressure, which is the most common problem managed by general practitioners, accounts for 8 per cent of all problems managed by GPs. Of these patients diagnosed with hypertension, 16 per cent were considered to have complicated hypertension, with 67 per cent of general practitioners finding it difficult to control symptoms in these patients (AIHW 2000). The 1999–2000 Australian Diabetes, Obesity and Lifestyle Study indicated that around 3.7 million Australians over the age of 25 had high blood pressure or were on medication for that condition (AIHW 2004a). The number of public hospital separations for patients with hypertension for 2002-03 (AR-DRG numbers I10-I15) was 7,484 (AIHW 2004b).

The incidence of “white coat hypertension” has been estimated to lie between 12 and 50 per cent of hypertensive patients. One study by Amado et al (1999) found that a white coat effect was observed in 78 per cent of 50 consecutive hypertensive patients. In elderly patients, the difference between clinic and ambulatory BP measures were greater, but not significant, compared to BP measures from younger hypertensive patients (Amado et al 1999; Verdecchia et al 2003).

DIFFUSION

The authors of this summary are unaware of the existence of any similar program in Australia.

COMPARATORS

Currently general practitioners monitor BP in clinical situations.

EFFECTIVENESS AND SAFETY ISSUES

The six month study by Guerra- Riccio et al (2004) randomised 100 patients with primary hypertension into two groups: Group A (n=48) received a nurse visit every 15 days (12 visits in total) and Group B (n=52) received a nurse visit every 90 days (2 visits in total). In addition, patients attended the clinic every 3 months to have their BP measured by a physician. A pharmacist also visited each patient every 30 days to ensure patients were compliant, and to supply patients with sufficient appropriate medication. The same nurse visited both groups of patients. At randomisation, SBP and DBP measurements were 191 ± 5 and 122 ± 3 mmHg respectively for Group A and 186 ± 3 and 117 ± 4 mmHg in Group B. Antihypertensive therapy regimens were similar in both groups. A significant reduction in BP

was reported in both groups during the observation period. The decrease in SBP was statistically larger in Group A (-35 ± 5 mmHg) than in Group B (-27 ± 5 mmHg) ($p < 0.05$) at day 90. The difference was larger at 180 days, -36 ± 6 mmHg versus -17 ± 4 mmHg, for Group A and B respectively ($p < 0.05$). Similar results were reported for a decrease in DBP at 90 and 180 days.

The decrease in "white coat hypertension" reported at 15 and 180 days was significantly larger in Group A than in Group B for SBP (-13 ± 4 mmHg vs -3 ± 4 mmHg) and for DBP (-11 ± 3 mmHg vs -4 ± 3 mmHg) (Guerra-Riccio et al 2004) (Level III-3 evidence).

The clinical significance of a reduction in "white coat hypertension" has not yet been determined in a trial setting.

COST IMPACT

Costing information for this program was unavailable. The current Medicare Benefits Schedule allows for a home visit by a general practice nurse, on behalf of a general practitioner, to provide immunisation services (item number 10993) and this attracts a \$10 fee.

ETHICAL, CULTURAL OR RELIGIOUS CONSIDERATIONS

No issues were identified/raised in the sources examined.

CONCLUSION:

There is limited evidence (level III-3) currently available and there is a degree of uncertainty regarding clinical benefits for this large group of individuals in Australia.

HEALTHPACT ACTION:

Therefore it is recommended that this technology be archived.

SOURCES OF FURTHER INFORMATION:

AIHW (2000). *Measures of health and health care delivery in general practice in Australia* [Internet]. Australian Institute of Health and Welfare. Available from: <http://www.aihw.gov.au/publications/health/mhhcdgpa/mhhcdgpa.pdf> [Accessed 6th October 2004].

AIHW (2004a). *Risk Factors: High blood pressure* [Internet]. Australian Institute of Health and Welfare. Available from: <http://www.aihw.gov.au/riskfactors/bloodpressure.html> [Accessed 6th October 2004].

AIHW (2004b). *AIHW National Hospital Morbidity Database* [Internet]. Australian Institute of Health and Welfare. Available from: <http://www.aihw.gov.au> [Accessed 5th October 2004].

Amado, P., Vasconcelos, N. et al (1999). '[Arterial hypertension difficult to control in the elderly patient. The significance of the "white coat effect"]', *Rev Port Cardiol*, 18 (10), 897-906.

Guerra-Riccio, G. M., Artigas Giorgi, D. M. et al (2004). 'Frequent nurse visits decrease white coat effect in stage III hypertension', *Am J Hypertens*, 17 (6), 523-528.

Owens, P., Atkins, N. & O'Brien, E. (1999). 'Diagnosis of white coat hypertension by ambulatory blood pressure monitoring', *Hypertension*, 34 (2), 267-272.

Verdecchia, P., O'Brien, E. et al (2003). 'When can the practicing physician suspect white coat hypertension? Statement from the Working Group on Blood Pressure Monitoring of the European Society of Hypertension', *Am J Hypertens*, 16 (1), 87-91.

SEARCH CRITERIA TO BE USED:

Antihypertensive Agents/therapeutic use

Blood Pressure

Chronic Disease

Drug Therapy, Combination

Hypertension/diagnosis/*drug therapy/physiopathology/*psychology

*Blood Pressure Monitoring, Ambulatory