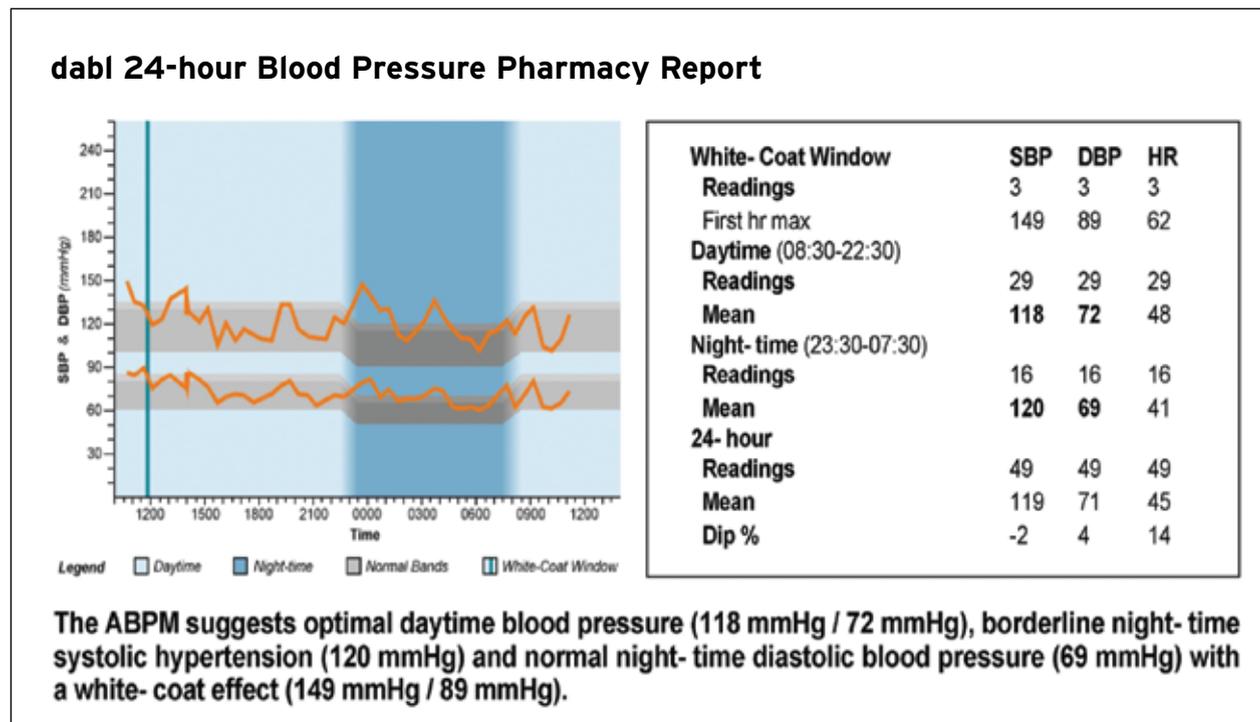


# ABPM saves not only money, but also lives



**Prof Eoin O'Brien** examines the evidence supporting the benefits of ambulatory blood-pressure management in terms of both cost-effectiveness and saving lives



In April of this year, I reviewed the recommendations of the National Institute for Health and Clinical Excellence (NICE), "The clinical management of primary hypertension in adults" (IMT, April 8). This was circulated then in draft form so that the opinions of interested parties could be assessed.

The final draft of the NICE recommendations has just been published and, despite considerable criticism and pressure from many groups, the recommendations on the use of ambulatory blood-pressure measurement (ABPM) have not been altered.

Such is the reputation of NICE, which issues recommendations for the care of patients with a variety of illnesses so that best clinical practice is achieved in primary and secondary care in the most cost-effective manner in the NHS, that the hypertension recommendations are going to have a profound effect on how high blood pressure (BP) will be diagnosed and managed in primary care across the world.

## NICE recommendations

Introducing the need for change, the guidelines remind us at the outset that at least one quarter of the adult population of the UK have hypertension, and that this figure rises to more than 50 per cent over the age of 60 years. Moreover, as the demographics of the UK shift towards an older, more sedentary and obese population, the prevalence of hypertension and its requirement for treatment will continue to rise.

We are also reminded that high BP is the major cause of stroke and that bringing blood pressure down to normal prevents this catastrophic complication. These admonitions apply equally to Ireland. Indeed, it is estimated that the Irish population aged 65 years or older has grown by around 107,771 persons in the period

1996-2011, to represent in total about 14 per cent of the general population, the majority of who will have isolated systolic hypertension.

The NICE guidelines confirm the inaccuracy of clinic BP measurement (CBPM): "These findings suggest that the current practice of using a series of CBPM alone for the diagnosis of hypertension leads to inaccurate diagnosis" and that "the current practice of using CBPM to define hypertension will lead to drug treatment being offered to a substantial number of people who are normotensive".

The guideline has no hesitation, therefore, in stating emphatically that that 24-hour ABPM "should be implemented for the routine diagnosis of hypertension in primary care".

To be specific, the guideline stipulates: "If the first and second blood pressure measurements taken during a consultation are both higher than 140/90 mmHg, offer 24-hour ambulatory blood pressure monitoring to confirm the diagnosis of hypertension."

## Evidence on cost-effectiveness

The authors recognise, however, that this recommendation will have profound implications for the diagnosis of hypertension and that it must be based on very robust evidence. NICE undertook, therefore, the most detailed cost-benefit analysis ever conducted for ABPM and this showed clearly that the use of ABPM would result in substantial savings to the NHS.

"This analysis suggests that ABPM is the most cost-effective method of confirming a diagnosis of hypertension in a population suspected of having hypertension based on a CBPM screening measurement  $>140/90$  mmHg... This conclusion was consistent across a range of age/gender stratified subgroups."

A further potential advantage of ABPM was also noted

in the NICE recommendations, namely that those patients who are saved being misdiagnosed as 'hypertensive' will "therefore avoid unnecessary drug treatment which will mean they will not experience side effects, incur prescription costs or be labelled as having a medical condition, with the potential psychological and practical impacts this can have".

Other potential benefits of ABPM that have not been considered by NICE are the savings to be made in having drug treatment targeted to achieve BP control and the substantial savings to be made by the prevention of stroke and other cardiovascular consequences of hypertension with improved BP control. Nor has NICE considered the potential of treating nocturnal hypertension, which is a major predictor of outcome. These potential advantages of ABPM are presently being studied.

NICE has the expertise to analyse the very complex aspects of a variety of cost-benefit issues relating to the provision of healthcare in the UK and it is unequivocal in stating that ABPM is not only cost-effective but that it will bring considerable savings to the NHS.

## Superiority of ABPM in diagnosis

In a further extensive study of the cost of ABPM just published in *The Lancet*, a Markov model-based probabilistic cost-effectiveness analysis concludes that ABPM is the most cost-effective strategy for the diagnosis of hypertension for men and women of all ages mainly by virtue of its potential to reduce misdiagnosis, and to direct better targeted treatment.

On the basis of these results, the authors recommend ABPM for patients before the start of antihypertensive drugs. Moreover, the study shows that home BP monitoring is not a substitute for ABPM.

## The role of pharmacies

The NICE guidelines readily admit that implementation of recommendations, which mean in effect that some 13 million patients with high BP in the UK, will have to be offered ABPM not only to confirm the diagnosis, but also for the follow-up assessment of treatment efficacy, will present "considerable challenges".

Among the problems recognised by NICE are the training of healthcare professionals, the provision of sufficient numbers of validated ABPM devices and the need for staff to be "trained in their use and the interpretation of data generated by the reports".

The recommendations of NICE will be applied, quite rightly, to practice in Ireland. We should anticipate, therefore, the consequences for clinical practice. Whereas primary care practices will be the main providers of ABPM (provided adequate reimbursement is made available), pharmacies are now proving to be valuable alternative providers.

Indeed, recent commentaries in the *Journal of the American Medical Association* have deplored the under-utilisation of highly skilled pharmacists in the provision of healthcare and have shown, moreover, that when pharmacists become engaged in the management of hypertension, BP control improves.

Recently, ABPM has been introduced to pharmacists in Ireland using the dabl system ([www.dablhealth.com](http://www.dablhealth.com)) of analysis and reporting. The pharmacy-based service is proving popular with patients and is being increasingly adopted by pharmacies across the country.

If ABPM in a pharmacy is normal (see Figure 1), the patient is instructed to bring the report to his/her general practitioner at their next attendance but, if the ABPM is reported as abnormal, instruction is given

to make an appointment as soon as possible.

The advantages of ABPM in pharmacies are:

- Greater availability of ABPM to the public;
- Ready access to a local and convenient pharmacy;
- Provision of an interpretative report to the patient who is informed as to the degree of BP control;
- Close collaboration between the pharmacist and the patient's GP;
- Provision of a trend report to patients having a repeat ABPM so as to indicate the response to BP-lowering medication;
- Availability of data in a central database to provide demographic information on national BP trends;
- Patient awareness as to their BP control and encouragement to adhere to medication and management strategies.

## National registries of ABPM

The scientific move to establish registries of ABPM is now well underway, with national registries of varying sophistication being established in Spain, Italy, Belgium, Germany, Ireland, France, Australia, Japan and the US.

To be effective, a national registry of ABPM must use a system that is capable of providing online analysis with an interpretative report and storage of data for demographic and scientific research. Such a system for ABPM – the dabl ABPM system – has been pioneered in Ireland and is presently in use in over a third of primary care practices across the country, as well as in a number of countries around the world.

This system provides an interpretative report, thereby removing the need for a physician to report on the ABPM, a summary statistical analysis, a trend report allowing assessment of the efficacy of treatment and, importantly, the data recorded can be stored centrally and analysed for demographic analysis and scientific research.

The advantages of national ABPM registries are that healthcare providers are able to rely on accurate demographic data for the management of hypertension and to ascertain the degree of BP control nationally.

We need only remind ourselves that less than 30 per cent of patients with hypertension are well-controlled in Ireland and that if BP control was achieved at least 5,000 strokes could be prevented annually.

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