

# 24/7 solution?

Andrew Webb considers the advantages of out of surgery blood pressure measurement

For over 100 years, surgery based blood pressure measurement using manual or validated automatic devices has been used to diagnose and manage hypertension. Protocols and guidelines to establish whether a patient is hypertensive are based on recommendations produced by national and international bodies including the joint NICE/British Hypertension Society guidelines (due for review in June 2010) and the European Society of Hypertension.

There are several reasons why surgery based measurements have become and continue to be popular. They are quick, cheap to carry out and should be accurate when carried out with validated blood pressure monitors, under medical

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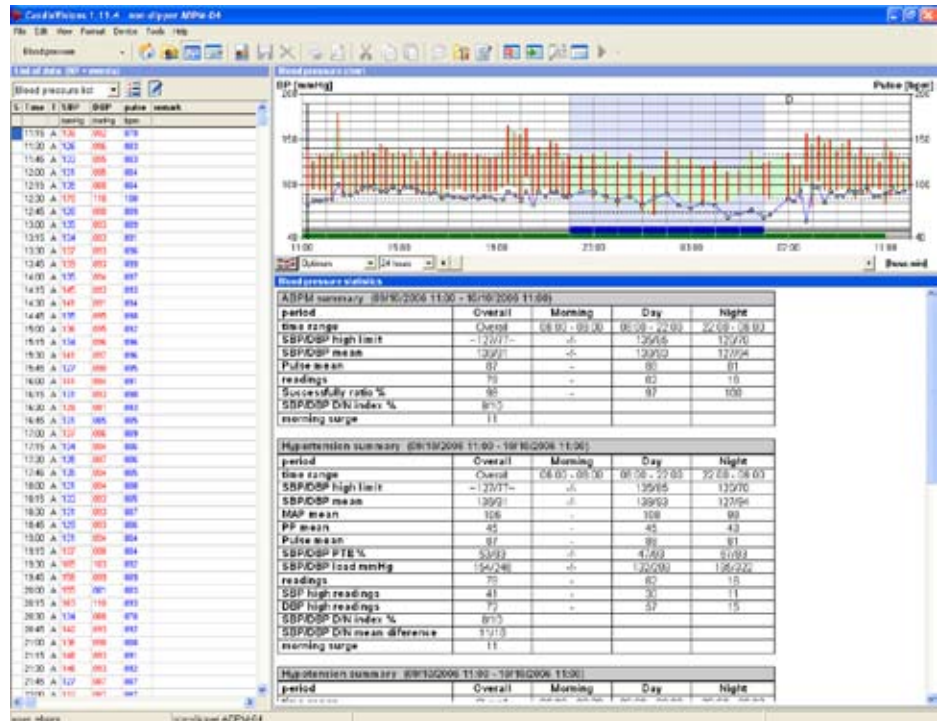
supervision.

As a guide to the diagnosis and prescribing of anti hypertensive medicine and the management of existing hypertensives, surgery based blood pressure measurements do have disadvantages.

The problem of 'white coat hypertension', where blood pressure can be elevated by up to 30mmHg and last for up to two hours, is well documented



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● This patient is a non dipper. Their 24 hour blood pressure is elevated above normal levels during the day and night time indicated by the graph and readings in red. They demonstrate a 'morning surge' on waking and their blood pressure is not controlled.

and may be present in as many as 20 per cent of people who appear to have hypertension. Even if two or three measurements are taken, clinic based measurements only provide a snapshot of a patient's blood pressure over a very short period of time and often do not reflect a patient's true 24 hour blood pressure.

For the management of existing hypertensive patients, clinic based measurements offer a poor indication of drug compliance, give no indication of a patient's true 24 hour blood pressure, no indication of excessive blood pressure lowering (hypotension) or an indication of drug resistant hypertension.

If out of surgery blood pressure measurement is a better alternative for the management of hypertensive patients, which is best? Home based blood pressure monitoring or 24 hour ambulatory blood pressure monitoring?

**Home blood pressure monitoring**  
As the cost of digital blood pressure monitors has come down, their use has become more widespread. Fortunately asking the patient to write down a reading, with all the possible inaccuracies this can cause, is long gone and most monitors from the main manufacturers will automatically store measurements together with the date and time ☺



● ABPM blood pressure monitor.

Recorded making it harder for patients to falsify data.

The European Hypertension Society have issued guidelines on HBPM and recommend a schedule of two daily measurements in the morning and evening over seven days with the first day's readings disregarded and the remaining readings averaged. This requires the patient to adhere to this strict schedule over several days and can prove quite onerous in practice. Patient training in home measurement is essential to ensure accuracy. It also requires careful analysis of the data which could increase GP workload.

Home blood pressure monitoring is more expensive than clinic based monitoring but offers advantages.

When managing hypertensive patients it

gives a guide to daytime treatment efficacy and can aid compliance of medication. The main disadvantage is it doesn't record any night time readings. Thus, the true picture of a patient's 24 hour blood pressure is still not complete with this technique.

### Advantages of ABPM

The evidence that ABPM gives information over and above OBPM has been growing for over 40 years. It helps identify white coat hypertension, benefiting patients who are not prescribed medication whilst reducing prescribing budgets. It can also identify the relatively new concept of masked hypertension where a normal OBPM is recorded but a patient exhibits elevated daytime ABPM readings, the reverse of white coat hypertension.

Nocturnal blood pressure readings are recorded and a true 24 hour blood pressure profile is stored meaning daytime and night time readings can be calculated easily by the ABPM software, with very little manual input (fig).

Optional interpretive software programmes like DABL, compatible with some ABPM monitors, can standardise reporting and improve its accuracy.

An ABPM typically records 40-50 readings over a 24 hour period, and once the benefits are explained a patient is more likely to comply with multiple measurements over this relatively short time scale rather than over seven days with HBPM. As the cuff remains fitted for 24 hours, patient training and the margin for error is reduced.

### Conclusion

Surgery based blood pressure measurement

will probably remain the point of reference for clinical decision making in hypertension for the foreseeable future, if for no other reason than cost and ease of access. The trend towards the use of waiting room blood pressure monitors for self patient measurement in surgery is an interesting trend and can prove a useful screening tool.

Whilst home blood pressure monitoring gives multiple readings, it relies on proper patient technique, patient training and compliance for up to seven days to give meaningful results. As a complementary technique to 24 hour ABPM it can, however, be useful in monitoring long term chronic conditions such as diabetes and coronary heart disease.

In the United States the use of ABPM in patients suspected of white coat hypertension was recently approved for reimbursement and it was recognised that ABPM monitoring was the only technique that could offer true 24 hour assessment. It should also be used to identify resistant hypertensives who don't respond well to treatment. ABPM has the potential to reduce prescribing costs, improve patient care and should be something GP practices are encouraged to implement becoming an indispensable tool in the management of hypertension. ■

References available on request.

For more information contact PMS (Instruments) on 01628 773233 or visit [www.pmsinstruments.co.uk](http://www.pmsinstruments.co.uk)

## Letter to the Editor

Dear Editor

In this issue of Practice Management (February 2010) there is an article called 'GPs not adopting AfC salaries' stating that practices are not offering their nurses and, I assume, staff too, the extra pay and holidays they would get under AfC.

Bernie Campbell of Practice Nursing I am sure has the welfare of all nurses at the heart of what she says but I think she should realise that general practice is not always able to accommodate the additional holidays or extra money

because of their size and commitments. Our practice nurse is not on AfC but is happy because she is out of the rat race of working in hospital and feels the benefits outweigh losses. I feel if this lady is going to give her side of this surgery she should have at least consult practices on their take on it beforehand.

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