Self monitoring of blood pressure at home

George Stergiou, Thomas Mengden, Paul L Padfield, Gianfranco Parati, Eoin O’Brien and working group on blood pressure monitoring of the European Society of Hypertension

BMJ 2004;329:870-871
doi:10.1136/bmj.329.7471.870

Updated information and services can be found at:
http://bmj.com/cgi/content/full/329/7471/870

These include:

References
This article cites 11 articles, 4 of which can be accessed free at:
http://bmj.com/cgi/content/full/329/7471/870#BIBL

Rapid responses
You can respond to this article at:
http://bmj.com/cgi/eletter-submit/329/7471/870

Email alerting service
Receive free email alerts when new articles cite this article - sign up in the box at the top right corner of the article

Topic collections
Articles on similar topics can be found in the following collections

• Hypertension (351 articles)

Notes

To order reprints of this article go to:
http://bmj.bmjournals.com/cgi/reprintform

To subscribe to BMJ go to:
http://www.bmjjournals.com/subscriptions
Self monitoring of blood pressure at home

Is an important adjunct to clinic measurements

Although measurement of blood pressure in the clinic is said to be the cornerstone of decision making in hypertension, such measurements may be unrepresentative of a patient’s true blood pressure because of random fluctuations and the white coat effect. In addition, doctors rarely measure blood pressure according to recommended standards. Aimed at improving hypertension management, the 2003 US Joint National Committee recommends the use of self monitoring of blood pressure before considering the more expensive, but better validated ambulatory monitoring of blood pressure. Both the Joint National Committee and the 2003 guidelines from the European Society of Hypertension and the European Society of Cardiology suggest that self monitoring might also be used as an alternative to ambulatory monitoring for the diagnosis of white coat hypertension. The 2004 British Hypertension Society guidelines also acknowledge the increasing use of self monitoring in clinical practice and provide a threshold level for the diagnosis of hypertension (more than 135/85 mm Hg). In addition, two websites (www.bhs.soc.org and www.dableducational.org) provide information on validated devices for self monitoring.

Cross sectional data and one outcome trial have shown that, as with ambulatory monitoring, self monitoring values are lower than clinic blood pressure measurements. Self monitoring has several advantages over clinic measurements—by allowing multiple readings averaged over time and by taking measurements in people’s usual environment, a more reproducible blood pressure value is produced that is devoid of the white coat and placebo effects. More importantly, two outcome studies have shown that self monitoring predicts cardiovascular outcome better than clinic measurements. Preliminary evidence also shows that self monitoring may improve control of blood pressure by improving compliance, as patients become more involved in their care. It has also been suggested that self monitoring might reduce healthcare costs by reducing the number of clinic visits.

Most self monitoring devices are self activated, and misreporting of blood pressure readings is possible. Recently, the use of memory equipped devices has reduced such error, which can also be avoided by adopting telemedicine techniques, which lead to further improvement in controlling blood pressure. Although the technique is easy to learn, some patients may not be good candidates for self monitoring, which may result in anxiety or modification of treatment by the patient.

An important application of self monitoring is to detect white coat hypertension. Although some have suggested that self monitoring may represent a cheaper alternative method to detect this condition, it probably cannot replace ambulatory monitoring. It can, however, be used as a screening test that requires confirmation with ambulatory monitoring. The low cost and wide availability of self monitoring devices also favour their use as a screening method. Self monitoring is clearly more appropriate than ambulatory monitoring for the long term follow up of treated patients because of its lower cost and greater convenience for repeated measurements. However, ambulatory monitoring is regarded as superior to self monitoring because it allows for measurements over a full 24 hour period and has better outcome data to support its use.

Given the fallibility of conventional blood pressure measurement, self monitoring of blood pressure provides supplementary information to practising
doctors enabling a more precise diagnosis and more accurate titration of treatment in the long term follow up of hypertension.

George Stergiou assistant professor of medicine
Hypertension Center, Third University Department of Medicine, Sotiria Hospital, 152 Mesogion Avenue, Athens 11527 Greece

Thomas Mengden assistant medical director, head of division
Division of Hypertension and Vascular Medicine, Medizinische Poliklinik, University Clinic Bonn, Wilhelmstrasse 35, D-5311 Bonn, Germany

Paul L. Padfield consultant physician
Department of Medical Sciences, Western General Hospital, Edinburgh EH4 2HU

Gianfranco Parati associate professor of medicine
University of Milano-Bicocca, Cardiology II, S. Luca Hospital, via Spagnoletto, 3, 20149-Milan, Italy

Eoin O’Brien professor of cardiovascular pharmacology
On behalf of the working group on blood pressure monitoring of the European Society of Hypertension ADAPT Centre and Blood Pressure Unit, Beaumont Hospital and Department of Clinical Pharmacology, Royal College of Surgeons in Ireland, Dublin 9, Ireland (eobrien@iol.ie)

Competing interests: Various device manufacturing companies for blood pressure measuring devices, including devices for self measurement, have funded the costs of validation studies done by EOB over the past 10 years; the results of all such research have been published in peer reviewed journals.

Primary care trusts
Premature reorganisation, with mergers, may be harmful

Just over two years ago, in a reorganisation of the NHS in England, 303 primary care trusts were created, each with responsibility for providing primary health care, improving health, and commissioning secondary care services for a population of around 180 000. With about 80% of NHS funding flowing directly to primary care trusts on a capitation based formula, hopes were high that these new organisations would be powerful agents for change in a more devolved, clinically driven, and locally responsive NHS.

Some in the NHS, however, believe that primary care trusts have failed to fulfil these expectations. There is a growing belief that many trusts are perhaps ineffective organisations—too weak to stand up to providers of acute care in tough negotiations on commissioning and too small to fulfil their public health responsibilities. Some would argue that they have so far been unable to establish strong and credible management teams.

The unsurprising solution being mooted is a further reorganisation, in which widespread mergers of primary care trusts would reduce their number to 100-150 across England. Coincidentally, that is roughly how many health authorities existed before they were abolished and primary care trusts were created to take on many of their responsibilities.


Although a moratorium of sorts on wholesale organisational restructuring has been in place for the past two years in the Department of Health, some primary care trusts have so far been unable to establish strong and credible management teams. In 2005—after the next election—we expect an epidemic of mergers of primary care trusts.

So what would these mergers achieve? We have no good evidence to show that a structural reorganisation of primary care trusts would bring benefit to patients. It would lead to a distraction from the real tasks at hand such as developing clinical governance and new forms of management for chronic disease; implementing new incentive structures, such as practice based commissioning, to improve coordination of services and deal with poor morale; and using new policies such as payment by results and choice for patients as a lever for developing services that are more responsive to local people.

Primary care trusts have so far made some progress, but they have important problems to tackle. The growing and somewhat self fulfilling beliefs that they are not fit for their purpose in the longer term and that structural reorganisation would bring improvement deserve to be challenged.