Podcast transcript

Interviewer: Hello and welcome to this NICE podcast about the clinical guideline on hypertension. This podcast will be focusing on implementing the recommendations for using ambulatory blood pressure monitoring in the diagnosis of hypertension and for monitoring the response to antihypertensive treatment. During this podcast we will abbreviate ambulatory blood pressure monitoring to ABPM.

Interviewer: I am Katie Worrall, Implementation lead for this guideline and with me is Bryan Williams, Professor of medicine at the University Hospital of Leicester NHS trust. Professor Williams was the chair of the group of experts who developed this guideline.

Interviewer Q1: Professor Williams, some listeners may be unfamiliar with ABPM, would you mind briefly explaining how it works?

BW: Ok so the principle idea of ABPM is to try and make multiple readings of blood pressure. So it is a bit like the normal blood pressure monitor that you may be familiar with in the doctor's office which is an automated device attached to a cuff, usually, a cuff around the arm, press the button and the monitor reads the blood pressure. The main difference from conventional blood pressure measurement is that the monitor is automated so it includes a timer and an automatic pump that blows up the cuff on the arm at pre set time intervals during the day. The blood pressure is recorded multiple times while the patient is going about their normal every day activity. (and) Usually the monitor itself is worn as a pack on the belt and the patient still has a cuff under their shirt or blouse or whatever, around their arm. So that is basically what the monitor looks like, it looks like a normal blood pressure monitor except that it contains the technology and software to allow multiple measurements to be made. Once the measurements have been made then they can be downloaded via a computer to generate a report which will give the average blood pressure during the day, the average blood pressure during the night and the average blood pressure over 24 hours. (but) For the purposes of the NICE guideline we are only using daytime measurements.

Interviewer Q2: I see thank you, and thank you for that information. That actually brings me on to my next question. When are NICE recommending ABPM is used?

The main change in this guideline is the recommendation to use ABPM for the routine diagnosis of hypertension. So when a patient goes off and has their blood pressure measured opportunistically at the doctors surgery or at the gym or something like that, if that level is high and raises the suspicion that there might be hypertension the recommendation is then to move straight to offering ABPM. (and)This will give a series of readings over a single day that will be averaged out to confirm or refute whether or not the

patient has high blood pressure. The high blood pressure will be diagnosed on the basis of the daytime blood pressure and if it is above 135/85 mmHg the patient will be confirmed as having hypertension

Interviewer Q3: Thank you for that. I understand that this is a change to practice. Until now how have clinicians diagnosed hypertension and what are the benefits of ABPM over these previous methods?

BW: Well until now physicians have generally used clinic blood pressure measurements in the doctor's office to make the diagnosis of high blood pressure. (but) The important thing here is that we never make the diagnosis of high blood pressure on the basis of a single reading. We require a series of readings just to be sure that the blood pressure is persistently elevated because quite often patient's blood pressures can appear high when they first get it measured in an unusual environment like the doctor's office and also there is natural variability in blood pressure. So we need a mechanism to get multiple measurements to confirm the diagnosis. (and) Previously the way this has been done is that the patient has usually been recalled to either the doctor's surgery or a visit to the nurse who will perform further measurements of the blood pressure, usually over weeks or months, to confirm whether the blood pressure is persistently elevated. What we are doing here with this new approach using ABPM is condensing the period of observation down to a single day by saying that if the initial reading is high wherever it is measured, if you then go to ABPM this will make a series of measurements over a period of a day only and the average of those measurements will tell you whether or not the patient has high blood pressure.

Interviewer Q4: That's brilliant thank you. It sounds like there are notable benefits in using ABPM to people with suspected hypertension and the NHS. How many measurements are required and how long does the person need to wear the ABPM for?

BW: So what we are recommending is that patients would normally wear this during their normal waking hours, for example we have quoted in the guideline that the period would be monitored from about 8am through to about 10pm but that is obviously variable depending on the patient themselves. (and) Usually the device is programmed to take readings every half an hour and some of these readings may fail if the arm moves. So what we have also stipulated is that there should be a minimum of 14 readings from which to derive the average so that we end up with a very clear reading which is based on a substantial number of readings rather than just one or two. So you need at least 14 readings usually taken every half an hour and usually over the period from early morning through to when you go to bed.

Interviewer Q5: Thank you very much. What are the diagnostic criteria when using ABPM to diagnose hypertension?

BW: We currently have two stages of high blood pressure. Stage 1 is a systolic pressure in the office (clinic blood pressure reading) of 140 - 159 mmHg and a diastolic of 90-99 mmHg. The equivalent blood pressure average on ABPM to stage 1 hypertension would be a blood pressure over 135/85 mmHg. Stage 2 hypertension was usually diagnosed based on office blood pressure (clinic blood pressure reading) of 160 systolic or more or diastolic of 100 or more and for ABPM that would be an average blood pressure of 150/95 mmHg or more. Now what is clear is that the ABPM averages are lower than the clinic readings and that is quite normal because we are averaging out a whole range of multiple readings rather than just a few readings in a clinic setting so this is expected. However, if the difference between the office reading and the average reading on ABPM is more than 20 mmHg systolic or diastolic this indicates what we call a white coat effect - in other words an abnormally large difference usually due to an alert reaction which the patient may not be conscious of when they visit the doctor's surgery. Now under these circumstances the ABPM value will tell you whether or not the patient is hypertensive. However, if you then decide to treat the patient, then you have the dilemma of what readings you are going to use to monitor the patient because, if you know that the clinic readings are exaggerated relative to the ABPM reading in that setting you might also consider using ABPM to monitor the patients response to treatment or alternatively using home blood pressure monitoring which many patients quite like to do when they are on treatment to look at the response to treatment. But in general terms we are not recommending using ABPM for monitoring response to treatment for the majority of patients. For that we are recommending clinic blood pressure readings and the target for the majority of patients is less than 140/90 mmHg.

Interviewer Q6: Thank you so just to add a little bit more about monitoring response to treatment, so you are recommending clinic blood pressure monitoring for most patients in this situation?

BW: Yes, when we looked at the evidence we were convinced that the evidence suggested that ABPM would be a significant advance in improving the quality and accuracy of diagnosis of hypertension and that is why we have recommended it. We could not find a sufficient level of high quality data suggesting that there was a significant advantage of using ABPM to monitor the response to treatment and also this would have quite significant cost implications as well. So we have suggested for the moment we should continue to use clinic blood pressure readings to monitor the response to treatment and the target that we are aiming for is less than 140/90 mmHg in people up to the age of 80 and less than 150/90 mmHg in people over the age of 80. The higher target reflecting the fact that we have not got any evidence suggesting a more aggressive target in older people. Now there will be circumstances in which patients say, well I have got my own monitor and I would like to monitor my own blood pressure rather than coming back to the surgery. That is a perfectly

reasonably thing to do and under these circumstances the patients take a series of home blood pressure readings whilst seated under controlled conditions then we would recommend a target of a blood pressure average of less than 135/85 mmHg which is the same as the diagnostic threshold. So we do say that home blood pressure monitoring is likely to be used increasingly by patients to monitor their blood pressure control as they become more popular, but for the moment we are not formally recommending that as the preferred option although it is essential in some patients with white coat hypertension.

Interviewer Q7: Brilliant thank you. We discussed earlier that using ABPM to diagnose hypertension is a change to practice, I would anticipate that this will therefore increase the demand for ABPM services. How can this increased demand be met by clinicians?

BW: Well I think this is one of the big challenges really and it is all about implementation and commissioning and looking at the existing provision. There is no doubt that the amount of monitors currently available, either within practices or via services operated by hospitals, is not going to be sufficient to meet the demand for an increased level of use for diagnosis as we have recommended. (so) This is going to be a period of evolution, it is going to require practices and commissioners of services to get together and decide what is the most effective way of increasing the provision of ABPM to allow this diagnostic procedure to be used, and that process should certainly take account of what is best for the patients in terms of convenient access, convenient drop off of the device etc, and that may be alternative models of care that don't necessarily need to visit the doctor or the doctors surgery. It could be provided by other providers who offer ABPM services in more convenient locations for patients so I think it is a challenge but it is also an exciting opportunity to look at different ways of providing care, always focused around the fact that what is best and what is convenient for patients and I think if we do that I think this is going to be achievable. The major challenge is going to be the upfront procurement costs at a time when cash is a bit strapped in the NHS, but I think that should be overcome because this is an important change that will lead to a more accurate diagnosis, ensuring that those people who have got hypertension get treatment and those people who haven't don't get treatment that they don't need.

Interviewer: That completely makes sense and in relation to those comments I would advise listeners of the podcast to have a look at the implementation advice and the costing tools associated with this guideline as these focus directly on implementing these recommendations concerning ABPM

Interviewer: Thank you very much Professor Williams. For more information about the NICE Hypertension guideline, and access to the NICE implementation tools which can all be adapted for local use, please visit our website, www.nice.org.uk/guidance/CG127.

Additionally, NICE has incorporated all of the recommendations from this guideline into the NICE Hypertension pathway. This online tool brings together in one place all NICE guidance and associated products relating to hypertension, including technology appraisal guidance, clinical guidelines and public health guidance. The pathway is available from the NICE website, NHS Evidence or http://pathways.nice.org.uk/pathways/hypertension

We hope that you will find the information in this podcast useful in helping you implement the NICE Hypertension guideline in practice. Please let us know what you think about this podcast by completing the short questionnaire accessible on the podcast page or by emailing us implementation@nice.org.uk.