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Home Blood Pressure Monitoring: Patient Case Studies

USING HOME BLOOD PRESSURE MONITORING TO … diagnose hypertension and support drug titration

Having been invited to attend a health check at his GP practice, a 58 year old gentleman was found to have elevated blood pressure, with an average clinic blood pressure reading of 180/112mmHg. Being reluctant to wear an ambulatory blood pressure monitor, the practice nurse provided him with a blood pressure monitor and information about how to monitor his blood pressure home. He then took his blood pressure at home for a week. Returning to the surgery with his completed blood pressure diary, the practice nurse calculated his average home blood pressure reading to be 159/96mmHg, confirming a diagnosis of hypertension.

As the patient's home blood pressure readings were considerably lower at home than those obtained in the clinic, following discussion it was decided that the patient would continue to monitor his blood pressure at home while the dosage of his antihypertensive medication was gradually increased. Combining this information with blood pressure readings obtained in the clinic, she was able to adjust the patient's blood pressure medication to the appropriate level. In light of this gentleman's apparent 'white-coat effect'*, before his annual hypertension review he also now picks up a blood pressure monitor from the surgery and monitors his blood pressure for a week, bringing his home readings to his appointment for the healthcare assistant to use as part of his review.

* A discrepancy of more than 20/10mmHg between clinic and average home (or average daytime ambulatory) blood pressure readings at the time of diagnosis.

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USING HOME BLOOD PRESSURE MONITORING TO … reduce patients' anxieties

Having had type 2 diabetes for three years, a 74 year old lady attended her GP practice for her annual diabetes review. During her review, she had her blood pressure taken and was found to have an average clinic blood pressure of 127/78mmHg. However, with a history of stroke in the family and her sister having suffered a recent heart attack, the patient was still very anxious that her blood pressure was too high despite reassurance from the practice nurse.

To try and alleviate her anxieties, the practice nurse suggested that the patient may wish to monitor her own blood pressure at home for a week. Providing her with guidance and written information about home blood pressure monitoring, the patient monitored her blood pressure at home for a week, handing her readings in to the practice reception staff at the end of the week for the practice nurse to look at. The patient's average home blood pressure was found to be 124/75mmHg. The practice nurse telephoned the patient the same day to discuss the results and to reassure the patient that her blood pressure was what the practice would want it to be. In more recent appointments at the surgery the patient now feels more reassured that her practice are actively and appropriately managing her risk of having a heart attack or stroke in the future.

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USING HOME BLOOD PRESSURE MONITORING TO … support the management of other medical conditions

A 67 year old female on renal dialysis was receiving regular erythropoietin (EPO) injections to treat her low iron levels (anaemia), a common complication of kidney disease. As EPO injections can cause an increase in blood pressure, it was important that her blood pressure was regularly monitored, both at her GP surgery and at the renal dialysis unit. An increase in diastolic blood pressure occurs in around a third of patients receiving EPO injections, due to increased levels of hematocrit in the blood.

As she was having her blood pressure frequently monitored at the surgery, the patient decided to purchase her own monitor from the chemist so that she could also monitor her blood pressure at home. After using the monitor for two weeks, she noticed that her home readings tended to be quite a bit lower than her blood pressure was when she attended the surgery and therefore decided to take a copy of her blood pressure readings along with her to her next appointment. Taking the patient's blood pressure again at the surgery and finding it to be significantly higher than the patient's own readings, following a discussion with the GP, the practice nurse used ambulatory blood pressure monitoring to investigate whether the patient had 'white coat effect'*. The ambulatory readings confirmed that this was the case.

In light of this finding, the patient and the practice nurse together decided that she would to continue to monitor her blood pressure at home and bringing her readings with her when attending her appointments. They also agreed that the patient would bring the monitor she had bought from the chemist with her to her next appointment, to enable the nurse to check the monitor being used was one clinically validated for home use and to ensure that the patient was measuring and documenting her blood pressure in the correct way.

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USING HOME BLOOD PRESSURE MONITORING TO… support an appropriate reduction in blood pressure lowering medication

A 59 year old hypertensive male attended an annual hypertension review with his practice nurse. At this review, his average clinic blood pressure was found to be 118/78mmHg. Before his review, the patient had also been monitoring his blood pressure at home for two weeks using his own monitor and had brought his readings with him to the surgery.

His average home blood pressure reading was 111/78mmHg and he indicated that he was keen to reduce the amount of medication he was taking. A review of his record revealed that this gentleman had been started on antihypertensive therapy five years earlier at a previous GP practice. At this time, the patient had attended his surgery for a blood pressure check that had been advised by the hospital following surgery and, based upon a single raised blood pressure reading of 169/91mmHg, had been commenced on blood pressure lowering medication.

As the patient could not remember when he purchased his blood pressure monitor and indicated that it had never been recalibrated, the practice nurse lent him a blood pressure monitor from the practice and asked him to monitor his blood pressure at home for a further week. To ensure accurate readings, the healthcare assistant also talked to him about how he should use the monitor and provided him with an information sheet as a reminder. After one week, the patient returned to the surgery with his home readings which showed an average home blood pressure reading of 97/68mmHg (equivalent to 102/73mmHg in the clinic). His clinic blood pressure was also taken again and was found to be 110/76mmHg. The practice nurse discussed these results with one of the GPs who decided to reduce his antihypertensive medication.

The patient continued to monitor his blood pressure at home using the monitor from the surgery for a further two weeks. Again, his average home blood pressure was found to be 118/80mmHg and his clinic blood pressure 126/83mmHg. Following further discussion, the GP decided to stop his blood pressure lowering medication. Home blood pressure readings after this point indicated that the patient's blood pressure remained at approximately 134/84mmHg. The patient was therefore removed from the hypertension register and his QRISK 10 year CVD risk score was calculated to be 9.8%.

This gentleman purchased a new, validated blood pressure monitor and now routinely monitors his blood pressure at home as well as attending his surgery for routine blood pressure checks.

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USING HOME BLOOD PRESSURE MONITORING TO … promote medication adherence

A 77 year old female with a history of stroke attended her surgery for an annual hypertension review. Diagnosed with hypertension in 2007, she had previously been prescribed two different antihypertensive medications, both of which had resulted in some side effects including dizziness and headaches. She had, however, successfully been on an ACE inhibitor for a year and her blood pressure was well controlled when she attended her reviews at the surgery.

However, attending a pre-operative clinic at the hospital her blood pressure was found to be raised and she was advised to visit her GP practice to have her blood pressure re-checked. At her appointment with the healthcare assistant, her clinic blood pressure was found to be 170/89mmHg. Discussing why her blood pressure was higher than usual, the patient admitted that she did not always take her medication as prescribed. The healthcare assistant talked through the importance of taking her blood pressure medication at home and suggested that she borrowed a blood pressure monitor from the practice and monitored her blood pressure at home for a short period of time. This would enable her to see the blood pressure lowering effects of the medication she was taking and therefore reinforce the importance of taking her medication as prescribed. The patient's husband was also keen to support and assist her in monitoring her blood pressure at home.

Taking her medication and monitoring her blood pressure at home for two weeks, her average home blood pressure was 127/78mmHg and her next clinic blood pressure reading, a week later, was 110/70mmHg. The patient now understands the importance of taking her medication and, with the help of her husband, now monitors her blood pressure once a week or so at home.

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