**Primary Care Hypertension Diagnosis (AIM-01) Microcase**

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| NHS TEAM |  |
| TYPE | Hypertension diagnosis or exclusion |
| TARGET COHORT | Patients identified opportunistically as having a high blood pressure reading at an appointment where hypertension has not yet been confirmed. |
| DESCRIPTION Opportunity & Solution | Hypertension is the single most common risk factor for both cardiovascular and overall disease burden and mortality worldwide, medical treatment of hypertension mitigates this risk.¹ Around 7 million people in the UK have undiagnosed hypertension and therefore do not know that they are at risk.²Timely and accurate diagnosis of hypertension can improve clinical outcomes; patients waiting over a month and a half post high reading demonstrate progressively worse outcomes than those treated more promptly.³ NICE recommends ambulatory blood pressure monitoring (ABPM) to confirm or exclude a diagnosis of hypertension.⁴ However acknowledging that some patients find ABPM uncomfortable, home blood pressure monitoring is recommended as a suitable alternative4 which patients generally find a positive experience.⁵  Patients attending their GP practice for other reasons may demonstrate an elevated BP when measured which may indicate undiagnosed hypertension. However, a high BP reading does not always indicate undiagnosed hypertension (for example in cases of white coat hypertension), so it is important to either confirm or rule out a diagnosis. Current practice to confirm a diagnosis of hypertension is obtained by monitoring the patient's BP over a period of time; depending on local practice this may be done by:1. Asking the patient to home monitor and record readings on paper and bring back to a 2nd appointment for review
2. Further appointments at their GP practice for BP readings to be taken in surgery
3. Ambulatory/24 hour BP monitoring.

The time between identifying a raised blood pressure and treatment leaves the patient unmanaged and vulnerable to exacerbation before treatment has commenced. Based on previous evidence⁶ Flo⁷ has been identified as the NHS owned clinically driven interactive self management tool that could enable a safe and effective transition to a 7 day home blood pressure monitoring pathway. Following clinical approval locally, home monitoring via Florence can be offered to patients attending the practice demonstrating a raised blood pressure. Flo is listed in NICE’s shared learning database for management of hypertension. For more information, please click [here](https://www.nice.org.uk/sharedlearning/interactive-simple-telehealth-for-the-management-of-blood-pressure).  |
| OUTCOME CLAIMS | *IMPROVED:** Clinical outcomes as treatment can be initiated promptly if required.
* Patient satisfaction with convenient reminders to take readings and clinically approved advice once blood pressure readings submitted.
* Accuracy in diagnosis (reduction in incidence of white coat hypertension).
* Patient choice in treatment planning; a safe alternative option to ambulatory monitoring.
* Patient safety during monitoring process due to advice provided by Flo, in concordance with a shared management plan (as decided by the practice).

*INCREASED:** Capacity in primary care due to patients not needing to visit the practice to have BP reading taken, or an ambulatory monitor fitted or removed.
* Confidence and ability to self-manage outside of face to face care.
* Patient engagement in condition and/or symptoms.

*REDUCED:* * Visits to the practice for blood pressure monitoring.
* Time taken to reach diagnosis and initiate treatment, if necessary, due to ability to initiate monitoring immediately and faster access to diagnostic data upon which to make a treatment decision.
* Cost of ambulatory monitor and clinical time.
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| EFFICIENCY MEASURE | *PRIMARY CLAIMS:*1. Fewer appointments at GP Practice (calculated by total time saved per patient).
2. Cost based on fewer appointments.
3. Patient satisfaction survey.
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| REQUIRED TIME What is the duration of the plan? | Protocol duration is 7 days.Flo prompts patient to send 2 blood pressure readings per day (total 14 readings). |
| ENTRY QUALIFICATION | 1. Patient part of target cohort.
2. Patient with appropriate cognitive ability.
3. Patient (or willing family member/carer) owns a mobile phone and is capable of sending and receiving SMS and taking own blood pressure accurately.
4. Patient has access to a blood pressure monitor.
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| ROI CALCULATION | ***In Practice BP Monitoring compared to using Flo:******Ambulatory Monitoring compared to using Flo:******White Coat Hypertension***According to Hypertension Clinical Guidelines by the National Clinical Guideline Centre (commissioned by NICE), between 15-30% of patients diagnosed as hypertensive are in fact suffering from White Coat Hypertension (WCH)⁸. WCH occurs when patients demonstrate an elevated blood pressure when monitored in clinical settings, but they do not actually have hypertension. If a patient’s readings demonstrate an elevated BP, then an appointment to see the GP to discuss their hypertension & prescribe medication is generated. Flo can help to reduce incorrect diagnoses of hypertension by allowing patients to monitor their blood pressure at home in a relaxed, non-clinical environment, and also create a time & cost saving for practices due to better identification of WCH.*\*Based on 10 minute appointment. Cost taken from Personal Social Services Research Unit, University of Kent “Unit Costs of Health and Social Care 2017”* [*https://www.pssru.ac.uk/project-pages/unit-costs/unit-costs-2017/*](https://www.pssru.ac.uk/project-pages/unit-costs/unit-costs-2017/)*\*\*Based on AIM-01⁹ protocol. Patient receives 1 message from Flo each morning asking for AM & PM reading. Patient responds once, generating a reply from Flo. If patient replies within 12 hours, Flo will not send any further messages, hence minimum of 3 messages. If patient remembers to send 2nd BP reading, Flo replies to both, resulting in a total of 5 messages. Flo will send a reminder after 12 hours if the patient does not respond with a reading, but this cost is included in the contingency messages. Texts cost £0.08.**\*\*\*Based on low cost BIHS accredited machine. May vary dependent on practice preference.**\*\*\*\*Based on calculations from this microcase, maximum cost compared to minimum of £0.00 where further monitoring is not required.* |
| PILOT |  |

**References**

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3 Xu W, Goldberg S, Shubina M, Turchin A (2015*). Optimal systolic blood pressure target, time to intensification, and time to follow-up in treatment of hypertension: population based retrospective cohort study* (Internet). BMJ Open. (2015 Feb; cited 2016 Nov 22). Available from: http://dx.doi.org/10.1136/bmj.h158

4 National Institute for Health and Care Excellence. *Hypertension in adults: diagnosis and management* (Internet). (Updated 2016 Nov; cited 2016 Nov 21) Available from: https://www.nice.org.uk/guidance/cg127

5 Hanley J, Ure J, Pagliari C, Sheikh A, McKinstry B (2013) *Experiences of patients and professionals participating in the HITS home blood pressure telemonitoring trial: a qualitative study* (Internet). BMJ Open. (2013 May 23; cited 2016 Nov 19). Available from: http://bmjopen.bmj.com/content/3/5/e002671.full

6 Cottrell E, Chambers R, O’Connell R (2012) *Using simple telehealth in primary care to reduce blood pressure: a service evaluation*. BMJ Open 2: e001391.doi:10.1136/bmjopen-2012-001391

7 Simple Shared Healthcare (2016). About us (Internet). (2016 Jan; cited 2016 Nov 27). Available from: http://www.simple.uk.net/home/about-us

8 National Clinical Guideline Centre. *The clinical management of primary hypertension in adults Clinical Guideline Methods, evidence and recommendations* (Internet), (2011 May; cited July 2018). Section 6.4 https://www.nice.org.uk/guidance/cg127/documents/hypertension-update-full-guideline2

9 Chambers, R, Advice and Interactive Messages (AIM) for Health, 2011.