

## Combatting high blood pressure in the community

### Practice-based audit 2017/18 – Full Report

January 2019

## Executive Summary

- More than one in four adults in the UK have high blood pressure (hypertension). At least half of all strokes and heart attacks are associated with high blood pressure, and it is also linked to dementia, kidney disease and heart failure. As well as medication, hypertension can be effectively reduced by adopting simple lifestyle changes such as reducing salt and alcohol intake, losing weight, increased exercise and smoking cessation. A national effort to tackle hypertension would not only improve public health and wellbeing, but also improve NHS efficiency.
- Highly accessible and embedded in rural and urban communities, pharmacy teams across the UK are ideally positioned to enhance awareness and understanding around blood pressure, and to support patients to manage high or pre-high blood pressure through healthy living services, dispensing medication and medication reviews.
- This practice-based audit sought to quantify the current contribution of community pharmacy teams in addressing high blood pressure, to determine what steps can be taken to have a greater impact. The audit highlighted the facilities and services currently offered in community pharmacies and examined the interactions that occurred between pharmacy teams and the public in relation to blood pressure.
- Data were collated from 5,220 pharmacies from seven of the largest national multiple pharmacy chains, representing just under 40% of the pharmacy sector in Great Britain. Over the one-week period, the pharmacies recorded a total of 221,091 interactions related to blood pressure between pharmacy teams and the public, and 30,169 instances where a blood pressure measurement was taken in the pharmacy. Through cautious extrapolation, this suggests that, on average, community pharmacy teams in Great Britain have nearly 30 million interactions related to blood pressure every year (n=29,931,147) and measure the blood pressure of over 4 million patients per year (n=4,084,258).
  - 221,091 interactions related to hypertension between pharmacy teams and patients occurred over the audit period, with providing lifestyle advice the most common type of interaction (56,282 times).
  - Over half of the interactions directly related to the patient's medication (59.42%).
  - 30,169 blood pressure measurements were taken with one in three of the readings being categorised as 'pre-high' (33.49%).
  - 82.31% of pharmacies audited had blood pressure monitors on sale for customers to purchase and self-test at home.
- These findings provide further evidence of the prevalence of high blood pressure and the need to address this public health issue using a targeted multi-professional approach. The audit demonstrates the important role of community pharmacies as a first port of call for many patients accessing healthcare and highlights the very prominent role that community pharmacy teams currently play in supporting patients with managing their hypertension.
- The findings demonstrate in particular the unique role and potential that community pharmacy teams have in the opportunistic detection of 'pre-high' blood pressure, and the provision of healthy living advice and support to ideally prevent the development of hypertension in at-risk groups. Improving the commissioning of face-to-face blood pressure measurement services, and the prevalence of monitors in pharmacies, would support pharmacy teams in fulfilling this potential and reducing strain on the health and care system in the longer term.
- Local authorities, Clinical Commissioning Groups, health and wellbeing boards, community pharmacies and their representatives need to work together to enable pharmacies to integrate into existing care and referral pathways as health and wellbeing hubs. This should include arrangements for formal inward and outward referrals, so that community pharmacy teams can triage people effectively.

## Introduction

The community pharmacy contractual framework in England and Wales requires every pharmacy to complete two types of audit every year over a total combined period of one week. The first audit is completed at the request of NHS England or the Local Health Board in Wales and the second is a practice-based audit conducted by the pharmacy on a topic of its choosing.

Practiced-based audits present an opportunity to review the systems and procedures operating in a pharmacy and, having assessed what is happening, ascertain what can be done better. Audits can also be used to gain information about what is happening in a pharmacy as a prompt for working with other health professionals to improve safety, quality and the whole patient experience.

The CCA has worked with its members over the last few years (and through Pharmacy Voice when it existed) to develop an audit process that can be carried out on a large scale across a number of companies and different types of community pharmacies, allowing individual providers to review their practice and meet contractual requirements, and trade bodies to use the results to gain a picture of an issue or topic at a national level.

Each year a relevant topic is identified, and an audit designed to generate useful data and learning on the issue. The audit materials are made available to all CCA members: ASDA, Boots, LloydsPharmacy, Morrisons, Rowlands Pharmacy, Superdrug, Tesco and Well.

This paper reports on the audit which was undertaken in the contractual year 2017-18. The purpose of the audit on this occasion was to explore community pharmacy's actual and potential role in tackling high blood pressure. This topic was chosen following a recommendation in the report published by Pharmacy Voice in February 2017: [Tackling High Blood Pressure through Community Pharmacy](#). The audit sought to gain a greater insight into the capabilities of community pharmacy teams in addressing high blood pressure. The audit encouraged pharmacy teams to review and reflect on their current practice in order to improve awareness, understanding, prevention, testing and monitoring of blood pressure, in turn improving public health and wellbeing.

## Background / Context

High blood pressure is the third biggest risk factor for premature death and disability in England<sup>1</sup>, making it a national public health priority. High blood pressure affects more than one in four adults and is estimated to cost the NHS £2.1 billion each year<sup>2</sup>. Effective collaboration between primary care services, GPs and pharmacy teams with the aim of improving early detection and management of hypertension, can be hugely beneficial to public health, government expenditure and economic productivity.

At least half of all strokes and heart attacks are associated with high blood pressure<sup>3</sup>, illustrating the human and financial costs that could be cut by tackling hypertension. The accessibility and informal environment of community pharmacies makes them well-placed to deliver public health interventions which can significantly improve patient outcomes.

There are over 13,500 pharmacies in Great Britain which are located at the heart of rural and urban communities, making them a trusted and convenient first port of call for healthcare advice and treatment. In England, 96% of the population can reach a community pharmacy within 20 minutes by walking or using public transport and this increases to 99% in areas of highest deprivation<sup>4</sup>. People living in the most deprived areas in England are 30% more likely to have high blood pressure compared to the least deprived<sup>5</sup>. This highlights the crucial role that community pharmacies can play in combatting health inequalities.

In 2014, Public Health England convened the Blood Pressure System Leadership Board which brought together leaders from across national and local government, the NHS, the voluntary sector and academia. The group published a report: [Tackling High Blood Pressure: From Evidence into Action \(THBP\)](#) which outlined a plan for addressing the impact of high blood pressure in England. This report recognised the vital role of community pharmacy teams in the prevention, early detection and management of high blood pressure.

## Method

The audit topic was identified following the recommendation made in Tackling High Blood Pressure through Community Pharmacy. This report highlighted that the scale and impact of community pharmacy initiatives to address high blood pressure have not yet been quantified. The practice-based audit would provide data to build upon the findings published in the report and give an insight into the ways in which community pharmacy is contributing to the national blood pressure agenda currently, and how its input could be enhanced.

Once the final design was agreed, the audit materials, which included instructions for how to complete the audit, and a data collection sheet, were made available for pharmacy teams from their employers. This included pharmacy teams working in CCA member pharmacies across a variety of settings, from high street pharmacies to those located within health centres and supermarkets.

Pharmacy teams were instructed to complete the audit over one week, or in the case of smaller/less busy pharmacies, data were collected for a minimum of 20 patients, even if this took longer than a week. The data collection form could be downloaded and saved for completing electronically or printed out and filled in by hand.

The audit was split into three sections and data were collected manually in each pharmacy. Section one covered the facilities and services available in each pharmacy and could be completed at any point during the audit period. Section two gathered quantitative data regarding patient interactions related to blood pressure. For each patient, pharmacy teams recorded:

- the topics discussed, or services provided,
- whether the patient was already diagnosed with high blood pressure,
- the classification of the reading if blood pressure was measured, and,
- whether the patient was referred to their GP.

Following the one-week audit period, pharmacy teams assessed their own data in order to complete the post-audit reflection in section three and to note any actions the team would take as a result of conducting the audit. Section three was an important part for pharmacy teams to retain in the pharmacy to inform their learning.

The rest of the audit data were collated by CCA members and shared with the CCA. The aggregated data were then analysed centrally, and the results are reported below.

### Definitions:

When blood pressure was measured, the following criteria were used to categorise the patients' blood pressure, taken from Blood Pressure UK's ['Blood Pressure Chart'](#):

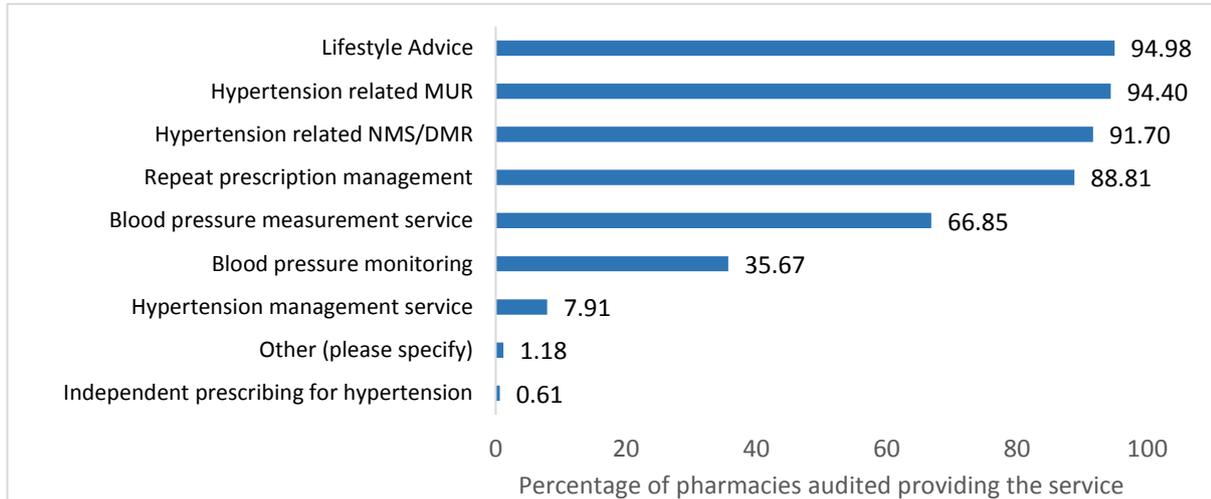
- Low: 90/60 mmHg or less
- Normal: more than 90/60 mmHg and less than 120/80 mmHg
- Pre-high: more than 120/80 mmHg and less than 140/90 mmHg
- High: 140/90 mmHg or higher

## Results & discussion

Audit results were collated from 5,220 pharmacies. In Great Britain (at the time of data analysis) there are around 13,590 community pharmacies, so this sample size represents approximately 38% of the total community pharmacy network (38.41%).

### Services relating to blood pressure

Figure 1 - Services provided by pharmacies audited which are related to blood pressure



Blood pressure is influenced by lifestyle choices such as salt and alcohol intake and physical activity. Obesity increases the risk of developing hypertension by threefold in women and fourfold in men<sup>6</sup>. NICE guidelines<sup>7</sup> recommend that lifestyle interventions should be provided for all patients with hypertension. Almost 5,000 pharmacies participating in the audit indicated that they provided lifestyle advice services relating to blood pressure (n=4,958), making it the most common service in all the pharmacies audited.

Although over 30,000 blood pressure measurements were recorded throughout the audit period (n=30,169), only 66.85% of pharmacies claimed to offer a 'blood pressure measurement service'. It is expected that most of these services are offered free to patients and funded by the pharmacy. Local authorities, like all commissioners, are under immense pressure to allocate funds effectively, and central government cuts and reforms have resulted in reduced spending by local authorities on certain public health services for adults (including obesity-related services) over the last few years. According to the King's Fund<sup>8</sup>, using like-for-like public health outturn figures, spending in 2017/18 is the same as it was in 2013/14, but based on GDP deflator this amount is likely to be worth 4–5% less and needs to cover a population about 3% larger. It is expected that these funding reductions have impacted commissioning of blood pressure measurement services at a local level, to the extent where very few blood pressure measurement services are commissioned.

It is worth noting, that some respondents did not offer a dedicated blood pressure measurement service, as indicated by the wording in the audit, however, blood pressure measurements may have been provided as part of another service such as NHS health checks, as shown in some of the responses in the 'other' category. Therefore, the audit definitions may have limited the distribution of these data.

Hypertension related Medicines Use Reviews (MUR), New Medicines Services (NMS)/Discharge Medicines Reviews (DMR) and repeat prescription management were offered in between 88 and 94% of the pharmacies. These figures, along with the relatively low incidence of blood pressure measurement services, suggest that currently, community pharmacies are more active in the management and support of patients who already have a hypertension diagnosis than in opportunistic detection. Increasing the availability of blood pressure monitors to be used in pharmacies, together with more pharmacies being commissioned to provide blood pressure measurement services, will enable community pharmacy to play a more active role in aiding the prevention and early detection of hypertension.

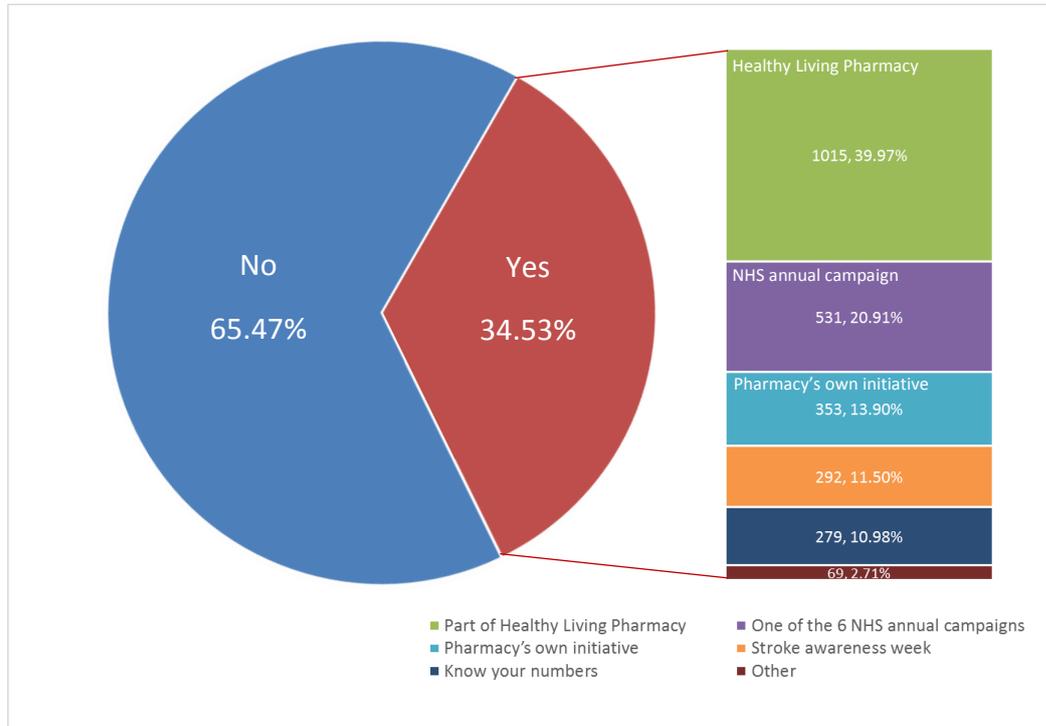
Public demand for blood pressure measurements should also be considered to rationalise these data. Research in England using focus groups suggested that blood pressure is not at the forefront of health considerations for most adults and few will pro-actively engage in blood pressure measurement services<sup>9</sup>.

Influencing public attitude and increasing awareness will be needed to drive behavioural change in this regard.

ResPublica<sup>10</sup>, recommended in their 'Heartbeats on the High Street' report last year that the Government should look to introduce a universal health check available for all working-age adults in England, targeting hypertension specifically and supported by the public health grant.

### Public health promotions related to blood pressure

Figure 2 - Percentage of pharmacies audited that undertook a public health promotion related to blood pressure, and of the pharmacies that undertook a promotion, the type of promotion that was held

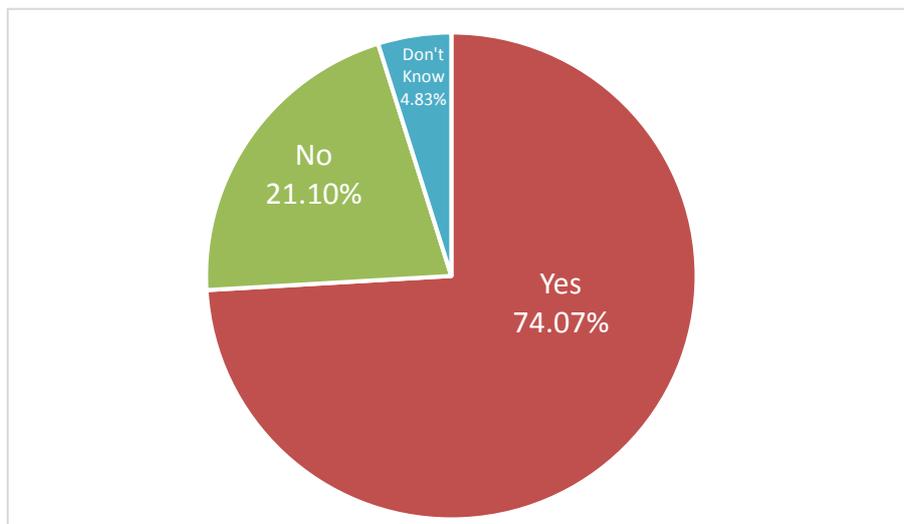


Most of the pharmacies that participated in the audit had not undertaken a public health promotion related to blood pressure within the last year (65.47%) when they submitted their audit data. Of the pharmacies that had undertaken a public health promotion related to blood pressure, the most common type of promotion was as part of being a Healthy Living Pharmacy (HLP). Over 1,000 pharmacies undertook a blood pressure promotion as part of being an HLP, which represents nearly 1 in 5 of the total number of pharmacies audited (19.44%). Audit responses also illustrated that some pharmacies completed more than one blood pressure promotion in the year. For example, an HLP promoting blood pressure as part of its own initiative may have also taken part in Stroke Awareness week.

Health promotions undertaken in community pharmacies vary annually, and many organisations plan their campaigns alongside or in partnership with local authorities, Clinical Commissioning Groups and charities. Given the national focus on blood pressure and Public Health England (PHE)'s recent initiatives, it is quite likely that some of the audited pharmacies ran a campaign related to blood pressure in the previous year or have one planned for later in the year. Pharmacy Voice's report on blood pressure released in February 2017 highlighted various examples of campaigns and services being offered at a local level or by a specific company. For example, in 2016, as well as blood pressure testing in stores, ASDA sold Salter blood pressure monitors at the 'not for profit' price of £7.50, as part of their home blood pressure testing campaign. During this programme, 94,000 monitors were sold.

### Patient interactions

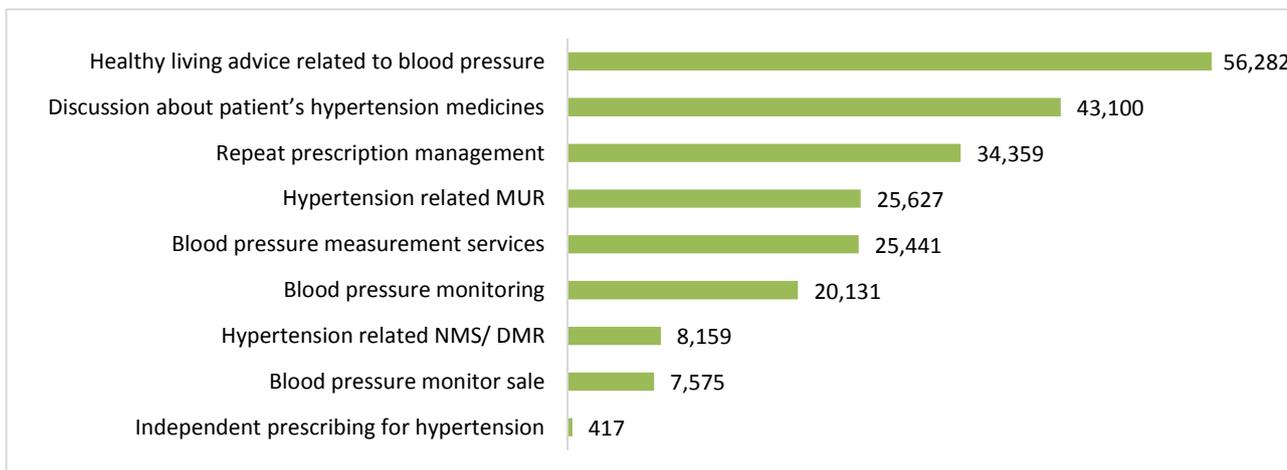
Figure 3 – Proportion of patients that interacted with pharmacy teams that were already diagnosed with high blood pressure



Of the interactions that occurred between pharmacy teams and patients during the audit period, nearly three quarters of these involved patients already diagnosed with high blood pressure (74.07%). This figure indicates the role that community pharmacies play in supporting patients with hypertension.

Although only 20% of the patients that interacted with pharmacy teams about blood pressure were not already diagnosed with hypertension (21.10%), this accounted for 19,393 patients. Each of these patients represents an opportunity for the pharmacy team to increase awareness and understanding of high blood pressure and to aid prevention and early detection. Cautious extrapolation of these data suggests that over the course of a year, community pharmacies in Great Britain discuss blood pressure with over two and a half million patients who have not been diagnosed with hypertension (n=2,625,410).

Figure 4 - Total number of times patients interacted with pharmacy teams about blood pressure during the audit period



The most common type of patient interaction related to blood pressure that occurred in the pharmacies was the provision of healthy living advice. Over 56,000 interactions of this type occurred (n=56,282) accounting for over a quarter of all interactions (25.45%).

Patient interactions which can be assumed to have taken place exclusively with those patients already diagnosed with hypertension (discussions about patient's hypertension medications, repeat prescription management, hypertension related MUR, blood pressure monitoring and hypertension related NMS/DMR) collectively accounted for over half of the total number of interactions that occurred in the pharmacies (59.42%).

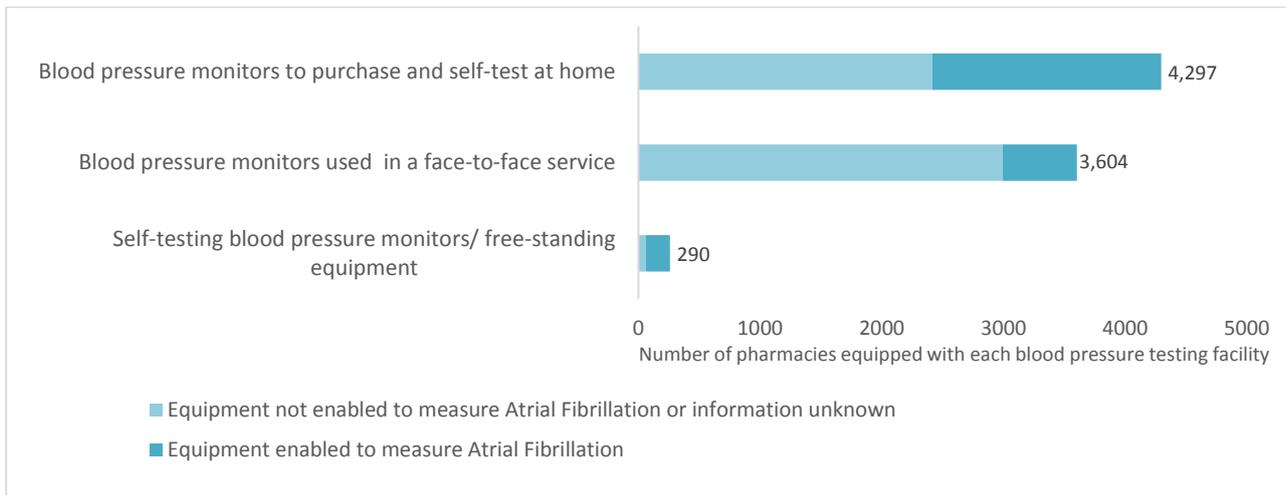
Despite the fact that medication is not always required following a hypertension diagnosis, in England in 2017, 71,532,003 items were dispensed for the management of hypertension and heart failure, making it the second most common type of item dispensed in the community. One explanation for the large number of dispensed items is that around 80% of people taking medication for hypertension require two or more drugs to achieve blood pressure control and some need up to four agents<sup>11</sup>. The reason for increasing the number of agents rather than the dose is that, to keep the risks of side effects to a minimum, the optimum effect on blood pressure is achieved at low to medium dose.

As experts in medicines, pharmacy teams are exceptionally well placed to support patients who are prescribed a range of antihypertensive medicines. Providing pharmacists with access to fuller patient records and information about the combinations of antihypertensive drugs that a patient is prescribed, would also allow them to provide better support for patients and to intervene where necessary. Improving the prevalence of community pharmacist independent prescribing by addressing some of the current barriers around access to prescribing budgets would also allow pharmacists to alter a patient's medication to enhance clinical efficacy and alleviate adverse drug reactions.

In the 5,220 pharmacies audited, pharmacy teams only interacted with patients about independent prescribing for hypertension 417 times. Funding routes and service models will need to change to enable Pharmacist Independent Prescribers in community pharmacies to actively use their skills to alleviate pressures and demands within their local health economies and maintain prescribing competence.

### Type of blood pressure testing facilities

Figure 5 - Type of blood pressure testing facilities available across the pharmacies audited



Over 80% of the pharmacies audited had blood pressure monitors available for customers to purchase (82.31%). This was the most abundant blood pressure testing facility available, with over 4,000 pharmacies having this type of monitor (n=4,297). Of these monitors, around 43% were enabled to measure atrial fibrillation (43.77%). Interactions relating to the sale of blood pressure monitors only accounted for 3.43% of the 221,091 total patient interactions (n=7,575). These data suggest that despite the availability of monitors on sale, pharmacy teams more frequently interact with patients in the pharmacy, providing advice, guidance and opportunistic testing, rather than encouraging the sale of self-test at home monitors. Monitors for patients to purchase and use to self-test at home are only worthwhile if people are engaged in conversation about blood pressure and are provided with practical advice on how to use the machine and how often.

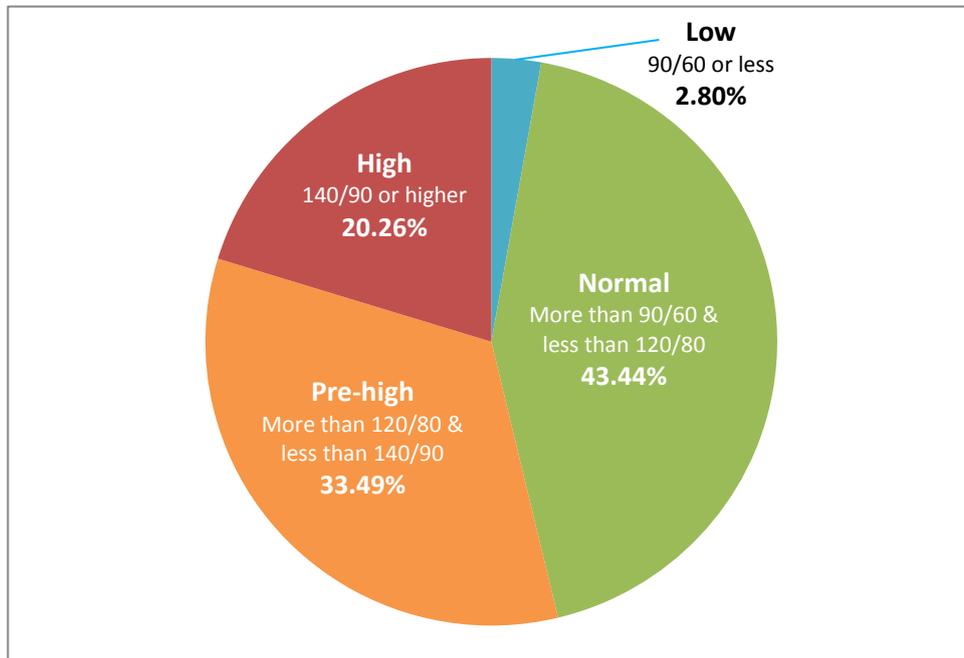
Roughly 70% of pharmacies had blood pressure monitors used in a face-to-face service (69.04%). These monitors are crucial for the diagnosis and monitoring of hypertension in pharmacies as they are often the precursors leading to patient interactions with pharmacy teams about prevention, medication and management of hypertension.

Around 17% of the monitors used in a face-to-face service were recorded as having the capability to measure atrial fibrillation (AF) (16.93%). However, it is worth noting that in responding to this question, nearly half of the pharmacy teams were unaware whether their blood pressure monitors used in a face-to-face service were equipped to measure AF or not (48.43%). This raises a question about the awareness

and understanding of atrial fibrillation and its close links to blood pressure. Considering this, action could be taken to ensure that a greater proportion of blood pressure monitors for use or sale in community pharmacies have the capability to detect AF and pharmacy team members are afforded further training to help them understand the importance of AF identification.

### Blood pressure measurements

Figure 6 - Classification of the blood pressure measurements that were taken in the pharmacies audited



Collectively, high and pre-high measurements accounted for over half of the 30,169 blood pressure measurements that were recorded (53.75%), and about 40% of blood pressure readings were categorised as being normal (43.44%).

The data did not distinguish whether the blood pressure measurement was as part of a monitoring service, in which the patient had already been diagnosed with hypertension.

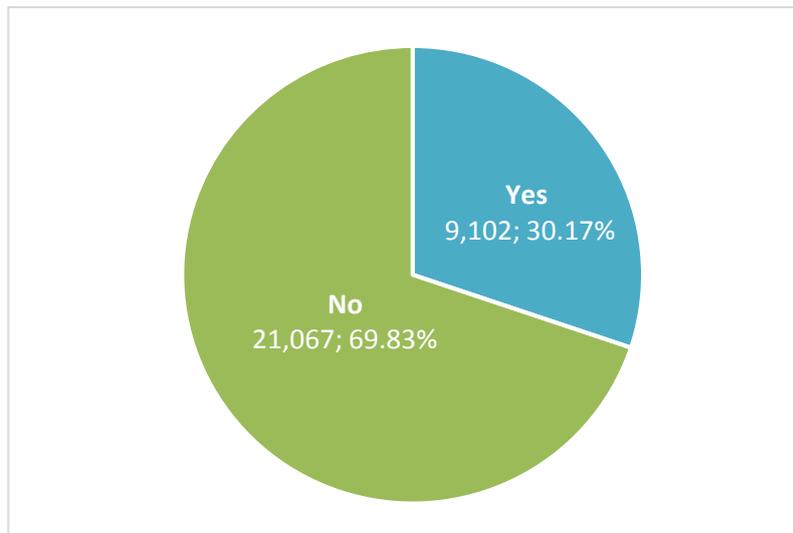
The audit data collection did not involve any categorisation of the types of patients that interacted with pharmacy teams. Non-modifiable risk factors associated with high blood pressure include age, gender, ethnicity and genetics. While modifiable risk factors include salt and alcohol intake, level of physical activity, economic status and mental health. Studies have found women to be more likely to visit community pharmacies than men<sup>12</sup>, and since, the prevalence of high blood pressure is less common among women, this may be one hypothesis to explain why the audit data reveals a level of hypertension which is lower than that demonstrated in nationwide statistics. However, limitations in the audit design mean we are unable to effectively analyse contributory risk factors, such as gender, given pharmacy teams did not record patient demographic information.

Pre-high blood pressure was more common than high blood pressure, with roughly one in every third patient tested exhibiting a pre-high reading (33.49%). The detection of pre-high blood pressure is a crucial step in the prevention of hypertension. These instances provide a crucial opportunity for pharmacy teams to engage with the patient to ensure greater understanding of the risks associated with hypertension and to give advice and guidance. In PHE's report on blood pressure<sup>13</sup>, it was proposed that a pathway be created aimed at patients identified as pre-hypertensive for lifestyle improvement.

Although much less common, it is important for the few patients that exhibited low blood pressure (2.80%), that advice is given about hypotension. Although, it is usually not a cause for concern, a diagnosis of hypotension can be important in the safe prescribing of drugs. Some medications can lower blood pressure, for example, drugs for Parkinson's disease and certain types of antidepressants. As community pharmacists are experts in medicines, a diagnosis of hypotension may lead to an intervention to prevent the prescribing of a medication, that may cause the patient increased risk of harm.

## Onward referral

Figure 7 – Proportion of patients that were referred to their GP following a blood pressure measurement in the pharmacy



As part of the audit, pharmacy teams recorded referrals of 9,102 patients to their GP. Considering that the majority of patients with whom the pharmacy teams interacted were already diagnosed with hypertension (74.07%), it could be assumed that these patients were already on stable medication or were aware of the steps necessary to manage their blood pressure, and therefore would not require a GP referral. For the other patients however, this onward referral illustrates the important public health interventions that pharmacy teams make every day, detecting where people may be unstable on their medication or where they may need further support or clinical diagnosis.

These referrals demonstrate the effective assessment and triage role that community pharmacy teams provide, ensuring patients who need to see appropriate healthcare professionals to help them get better have been directed to do so, when they otherwise may have waited until their symptoms or condition had become more serious.

Considering the low number of instances of independent prescribing for hypertension (n=417) highlighted through the audit, a general view may be that changing service models and funding frameworks to remove barriers which limit active independent prescribing in community pharmacy (e.g. allowing community PIPs to access local prescribing budgets as part of the wider multidisciplinary team) is needed to reduce the necessity for a GP referral, for instance where a pharmacist can see that a dose should be altered.

## Conclusions and next steps

- **Further commissioning of blood pressure measurement services**

These findings provide further evidence of the prevalence of high blood pressure and the need to address this public health issue using a targeted multi-professional approach. A seemingly simple way for community pharmacies to contribute more fully to tackling high blood pressure, is to ensure that all pharmacies have blood pressure monitors available that can be used by pharmacy teams to take measurements as part of local or nationally commissioned measurement services. Increased commissioning of these services, either alone or as part of other NHS services (e.g. an NHS Health Check) will allow community pharmacy teams to detect pre-high and high blood pressure and provide personalised lifestyle advice as early as possible, to support the prevention agenda.

The audit demonstrates the important role of community pharmacies as a first port of call for many patients accessing healthcare and highlights the very prominent role that community pharmacy teams currently play in supporting patients with managing their hypertension. The findings also demonstrate the unique role and potential that community pharmacy teams have in the opportunistic detection of 'pre-high' blood pressure, and the provision of healthy living advice to prevent the development of hypertension in at-risk groups.

- **Better information sharing and digital referral pathways**

As well as maximising interventions that occur in community pharmacies to improve early detection and management of high blood pressure, better data sharing and collaboration between pharmacy teams and general practices will lead to effective follow-up appointments. This can be achieved by ensuring that community pharmacy is seen as an integral part of the local public health and primary care workforce, integrated within agreed local care pathways. Allowing community pharmacists to have both 'read' and 'write' access to the GP record would enable more effective sharing of blood pressure monitoring results and recommendations, to reduce duplication in the GP practice and expedite follow-up activity.

In line with recommendations made in the recently published NICE guideline on *community pharmacies: promoting health and wellbeing*<sup>14</sup> - local authorities, clinical commissioning groups, health and wellbeing boards, community pharmacies and their representatives need to work together to help pharmacies gradually integrate into existing care and referral pathways as health and wellbeing hubs. This should include arrangements for formal inward and outward referrals, so that community pharmacy teams can triage people effectively to reduce multiple assessments and waiting times. If these organisations are not already working together, or community pharmacies are not involved in these planning discussions, then these arrangements should be considered as part of the establishment of Primary Care Networks over the coming months.

- **Increased atrial fibrillation detection**

In addition to making blood pressure monitors available for use as part of commissioned services in more pharmacies, it is important to address the low proportion of those monitors (as demonstrated through the audit) that are understood to measure atrial fibrillation. Technology enables blood pressure monitors which have an integrated AF algorithm to increase the opportunistic diagnoses of AF during the monitoring of hypertension. More widespread uptake of this equipment in community pharmacies in line with a national or locally commissioned model will increase the awareness and detection of AF and help explain anomalous blood pressure measurements which can be caused by AF. Community pharmacies can play an important role in AF identification and stroke prevention and there is significant potential to expand or test commissioned AF screening programmes through community pharmacies to increase awareness of the risks. Pharmacy teams should be encouraged to undertake further Continuing Professional Development (CPD) in blood pressure measurement/management and AF detection, so they are better equipped to support patients and talk to them about the risks associated with AF and hypertension.

- **Independent prescribing role for community pharmacists**

Detecting, prescribing and monitoring a patient's hypertension in the same pharmacy with the same pharmacy team creates a more consistent journey of patient care and could increase the confidence of the patient in the pharmacy team, leading to more effective medicines adherence and uptake on lifestyle advice, ultimately leading to a better clinical outcome. Increasing the proportion of pharmacies which have a pharmacist independent prescriber as part of this team, who can *actively* use their skills to help people with hypertension could reduce the pressure on GP practices and other healthcare services.

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- <sup>1</sup> **Public Health England** (2017) Health matters: combating high blood pressure. <https://www.gov.uk/government/publications/health-matters-combating-high-blood-pressure/health-matters-combating-high-blood-pressure>
- <sup>2</sup> *Ibid*
- <sup>3</sup> *Ibid*
- <sup>4</sup> **Todd, A et al.** (2014) The positive pharmacy care law: an area-level analysis of the relationship between community pharmacy distribution, urbanity and social deprivation in England. *BMJ Open*. <https://bmjopen.bmj.com/content/4/8/e005764.info>
- <sup>5</sup> **PHE** (2017) Health matters: combating high blood pressure. <https://www.gov.uk/government/publications/health-matters-combating-high-blood-pressure/health-matters-combating-high-blood-pressure>
- <sup>6</sup> **National Audit Office** (2001) Tackling Obesity in England. <https://www.nao.org.uk/wp-content/uploads/2001/02/0001220.pdf>
- <sup>7</sup> **NICE** (2011) Hypertension in adults: diagnosis and management. <https://www.nice.org.uk/guidance/cg127>
- <sup>8</sup> **Buck, D** (2018) Local government spending on public health: death by a thousand cuts. King's Fund blog. <https://www.kingsfund.org.uk/blog/2018/01/local-government-spending-public-health-cuts>
- <sup>9</sup> **PHE** (2014) Tackling high blood pressure: from evidence to action. Creative Development Research for PHE marketing pilot (unpublished)
- <sup>10</sup> **Noyes, J.** (2017) Heartbeats on the High Street: How Community Pharmacy can transform Britain's Health, Wealth and Wellbeing. ResPublica. <https://www.respublica.org.uk/wp-content/uploads/2017/11/ResPublica-Report-Heartbeats-on-the-High-Street.pdf>
- <sup>11</sup> **Dahlöf, B et al.** (2005) Prevention of cardiovascular events with an antihypertensive regimen of amlodipine adding perindopril as required versus atenolol adding bendroflumethiazide as required, in the Anglo-Scandinavian Cardiac Outcomes Trial-Blood Pressure Lowering Arm (ASCOT-BPLA): a multicentre randomised controlled trial. *Lancet*. <https://www.ncbi.nlm.nih.gov/pubmed/16154016>
- <sup>12</sup> **Boardman, H et al.** (2005) Use of community pharmacies: a population-based survey. *Journal of Public Health*. <https://academic.oup.com/jpubhealth/article/27/3/254/1511105#22071677>.
- <sup>13</sup> **PHE** (2014) Tackling high blood pressure: from evidence to action. <https://www.gov.uk/government/publications/high-blood-pressure-action-plan>.
- <sup>14</sup> **NICE** (2018) Community pharmacies: promoting health and wellbeing. <https://www.nice.org.uk/guidance/ng102>.