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Rapid Evidence Synthesis (Abridged Report):

What works to find and manage hypertension in high-risk, underserved groups?

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Rapid Evidence Synthesis:

Rapid Evidence Syntheses (RES) are produced by the National Institute for Health and Care Research (NIHR) Applied Research Collaboration Greater Manchester (ARC-GM). The methods used are based on a framework set out in Norman et al. 2022 and previously registered on the Open Science Framework (OSF). [1,2]

RES use evidence synthesis approaches and draws on the GRADE Evidence to Decision framework[3] to provide rapid assessments of the existing evidence and its relevance to specific decision problems. In the first instance, RES focus on evidence from existing evidence syntheses. They are undertaken in a real-time context of decision-making around adoption of innovative health technologies and are designed to provide a "good-enough" answer to inform decision problems in a short timescale. RES methods are flexible and adaptive. They have evolved in response to user feedback and differ depending on the nature of the assessment undertaken.

RES is not intended to serve as a substitute for a full systematic review.

We welcome feedback and are particularly interested to hear how you have used this Rapid Evidence Synthesis.

Please send any queries or comments to:

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Additional information:

This work was undertaken by the National Institute for Health and Care Research (NIHR) Applied Research Collaboration Greater Manchester (ARC-GM). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

[1] Norman, G. *Rapid evidence synthesis to support health system decision making. OSF registration.* 2020 [cited 2023]; Available from: osf.io/hsxk5

[2] Norman, G., et al., *Rapid Evidence Synthesis To Enable Innovation And Adoption in Health and Social Care.* Systematic Reviews, 2022. **11**: p. 250. https://doi.org/10.1186/s13643-022-02106-z

[3] Alonso-Coello, P., et al., *GRADE Evidence to Decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: Introduction.* BMJ, 2016. **353**: p. i2016.

About this report

This report summarises research evidence on approaches that aim to improve the detection, treatment and management of high blood pressure in people who are at higher risk but are often not reached by routine services such as the NHS Health Check.

It focuses on targeted approaches that sit alongside routine services, such as community outreach, pharmacy-based services, targeted invitations and digital support. The aim is to help local decision-makers learn what may be worth considering in their own practice.

This is an accessible and short report. The full report, including detailed methods and evidence, is available on the ARC-GM Rapid Evidence Synthesis webpage.

Executive summary

The overall evidence is **uneven**. Much of the research is directly relevant to UK decision-making, as most of the included studies are from the UK or other high-income settings. However, certainty is often **low**, particularly for community case-finding approaches.

The evidence is stronger for some management approaches, particularly **pharmacist-led interventions** and **remote pharmacist follow-up**, where findings are more consistent, and certainty is moderate (in other words, we are fairly confident that what the research shows is likely close to the truth). For many outreach and community case-finding models, we do not know whether people found to potentially have hypertension go on to receive effective care.

Our key messages are:

- **There is little direct evidence on how people move from outreach testing to diagnosis, treatment and long-term care.** This is an important gap for systems trying to reduce inequalities in blood pressure care for underserved communities, rather than simply increasing the number of blood pressure measurements. Most studies report whether people had their blood pressure checked. They do not report what happens next. Where follow-up was reported, the number of people moving into diagnosis or treatment varied widely and was sometimes low.
- **There is some evidence that targeted approaches can improve access to blood pressure checks**, particularly when services are offered in convenient, trusted community settings such as pharmacies, mobile units, workplaces, community venues and other places people already use.
- **Service design matters as much as location.** People are more likely to get their blood pressure checked when testing is easy to access, and offered in convenient, familiar, and trusted locations with flexible hours. Uptake improves when people understand why the test is offered, what the results mean, and how their information will be used. Endorsement from trusted community organisations, and their involvement and support in planning, helps. Having trained, confident staff deliver blood pressure testing also supports consistency in delivery. Clear referral and data-sharing processes help link community testing with follow-up care in primary care.
- **Some approaches to ongoing management appear consistently effective.** Pharmacist-led support, remote follow-up by pharmacists, and some community outreach worker models

probably improve blood pressure control. Digital approaches may help some disadvantaged groups, but the evidence is less certain.

Why this matters

High blood pressure is common, serious and treatable. It increases the risk of cardiovascular diseases such as stroke. Effective tests and treatments already exist, but they do not reach everyone at risk equally.

Some groups are more likely to have untreated high blood pressure, including people living in deprived areas and some ethnic minority communities. This means local systems may need to go beyond routine services to improve early identification and reduce avoidable disease.

A key point from the evidence is that finding people with elevated blood pressure is only part of the job. If screening is not linked to diagnosis, treatment and long-term support, the benefits may be limited. For decision-makers, the real question is not simply which approaches increase testing, but which approaches help people access effective care.

What we looked at

This was a rapid evidence synthesis of research published until February 2026. It mainly used existing reviews, with some additional primary studies where needed. We focused on adults in the community who may be at higher risk of hypertension and underserved by routine services. We asked two main questions:

- What targeted approaches help find and manage hypertension?
- What helps or hinders delivery?

Full methods, appraisal and detailed evidence tables are available on the ARC-GM Rapid Evidence Synthesis webpage.

What the evidence shows

1) Testing alone is not enough

There is very little evidence about how testing links to diagnosis, treatment, and long-term care.

Across many case-finding studies, follow-up care is poorly reported or not reported at all. Where follow-up was reported, the proportion of people who had a blood pressure test in communities and subsequently received a diagnosis or antihypertensive treatment varied greatly, with a median of 44% [1].

This means we know whether people are tested, but not whether they receive care. Approaches that sit largely outside routine NHS pathways may look attractive as inequality-reduction tools, but they need robust and effective referral to deliver real benefit.

2) Community-based approaches can widen access

Community-based, opportunistic testing can widen access to blood pressure measurement, but we often do not know whether this leads to treatment. The certainty of the evidence is low, so findings may change.

Key community-based approaches include:

Mobile unit-based and pharmacy-based testing: A systematic review of self-screening and community-based blood pressure testing approaches found that **mobile units** (e.g. in the form of "clinics on wheels" using vans to provide local services in convenient locations such as supermarkets, community centres and libraries) and **pharmacy-based testing** could achieve good uptake of hypertension detection among eligible individuals (21%–88% population screened in mobile units, and 40%–90% in pharmacies) [1].

Blood pressure self-testing kiosks: A recent systematic review suggested that self-testing with kiosk devices for automated blood pressure measurement in community elderly centres, pharmacies and workplaces may help improve detection, particularly in settings with constrained resources [2]. Evidence on the uptake and impact of kiosks located in primary care settings is very limited.

Overall, whilst evidence suggests that opportunistic approaches can increase blood pressure measurement, systems must pay close attention to what happens next.

3) Community health worker visits in deprived communities, and using targeted or tailored invitations for the NHS Health Check, may improve uptake

Some strong UK-relevant evidence focuses on increasing the uptake of the NHS Health Check.

Community Health and Wellbeing Workers home visiting. A 2023 non-randomised, controlled study (with 662 households) in a disadvantaged area of London looked at whether visits from Community Health and Wellbeing Workers helped families use more services of vaccination, cancer screening and the NHS Health Check [3]. Households that received visits were more likely to take up NHS Health Checks (35% vs 12%). However, the study design reduced the certainty of the finding.

Targeted or tailored invitations for NHS Health Check: A systematic review of various methods for inviting people to attend the NHS Health Check found that targeted or tailored invitations can improve attendance [4]. Effective approaches included:

- invitations using questionnaires that were designed based on the Question-Behaviour Effect phenomenon for promoting health check invitations with or without a financial incentive (£5). Here, the *Question-Behaviour Effect* refers to a phenomenon in which asking individuals questions about a behaviour may lead to subsequent behaviour change.
- SMS reminders and letters offering testing within a specific time window;
- telephone invitations;
- opportunistic invitations.

Opportunistic invitations appeared particularly helpful for some groups, including men, younger people and people living in more deprived areas.

Using shorter two-page invitation leaflets, compared with four-page NHS Health Check leaflets, did not affect uptake.

Digital NHS Health Check: A UK trial of a digital NHS Health Check also found higher uptake (21%) than standard face-to-face invitation alone (11%) among people aged 40–74 who had not had a Health Check in the previous five years [5]. The digital model was delivered via an online tool comprising: a self-completed health assessment section, an advice and support section, and a section on how to obtain and update follow-up physical measures (blood pressure, cholesterol, glycated haemoglobin). It also linked the information back to primary care systems and signposted users to further services available through pharmacies, leisure centres, kiosks, GP practices, or a home finger-prick blood test kit. This model does more than simply encourage attendance: it begins to connect identification, risk assessment and follow-up. The evidence was judged to have moderate certainty.

Overall, these findings suggest that local systems should consider not only where blood pressure checks are carried out, but also how people are invited and whether digital routes can make it easier for people to engage. However, digital approaches should be used carefully, as not all groups will benefit equally.

4) What helps or hinders delivery?

Case-finding service design is as important as location. Based on the included studies [6-13], factors influencing the successful delivery of targeted case-finding approaches varied across approaches, but several common themes were identified:

First, **services need to be easy to access**. Service uptake was more likely when testing was offered in convenient settings that people already accessed and trusted, such as pharmacies, workplaces, community venues, leisure centres, shopping centres, homes, barbershops, or places of worship. Flexible timing was also important, particularly for people who could not easily attend appointments during working hours, but limited staff availability outside usual working hours restricted flexibility. Testing in private areas helped reduce anxiety, stigma, and gendered concerns associated with public or semi-public blood pressure testing. Self-testing services using kiosks enabled independent use for most people but could exclude those with sensory impairments, learning disabilities, dementia, or some mental health conditions, limiting equitable reach.

Second, **clear communication matters**. The public was more likely to participate when they were aware of testing opportunities, understood why blood pressure checks were being offered, what the results meant, and what would happen with their information. Simple, verbal explanations of blood pressure readings and culturally relevant, accessible materials (printed and digital) helped improve understanding. Clear and visible promotional materials, targeted messaging and imagery, and active invitations from staff were also helpful. Without active promotion, self-testing kiosks were sometimes overlooked. Language, digital literacy, and health literacy barriers limited understanding when information was not tailored or accessible.

Third, **trusted people and trusted organisations matter**. Community endorsement by local gatekeepers, such as, venue managers, barbers, faith leaders or other respected figures, appeared to improve people's awareness of testing opportunities, especially among groups who may be less likely to use routine services. Co-production with people and community organisations helped identify barriers and facilitators before implementation, thereby improving acceptability.

Fourth, **staff confidence and support are important**. Clinically trained staff were generally more confident than non-clinical staff in conducting measurements, interpreting readings, giving advice, and managing referrals, although confidence in communicating with members of the public varied. When non-clinical staff were involved in delivery, training in public engagement, data entry, and clear referral and escalation protocols (such as those aligned with NICE guidelines) was recommended to support continuity of care.

Fifth, **delivery was shaped by resources, partnerships, and incentives**. These factors were important for sustaining community blood pressure testing. Delivery was limited by resource gaps (such as lack of large cuff sizes and translated materials) and competing clinical or business demands, while partnerships with health system organisations and incentives (such as training, financial incentives, practical support and recognition) helped with staff recruitment, retention, and motivation.

Finally, **follow-up pathways and data-sharing are essential**. Evidence suggested that continuity of care was more likely when blood pressure results could be recorded, shared and acted on through clear referral routes and shared IT systems or platforms. Established blood pressure pathways and referral infrastructure supported continuity of care. Without these, community testing risked duplicating effort and increasing primary care workload, especially where services operated partly outside routine NHS settings.

4) Some hypertension management approaches appear effective once people are linked into care

Generally, the evidence suggests that once people are known to have hypertension and are connected to community-focused management approaches, these can help control their blood pressure. All the evidence is **directly relevant** to the UK context. For this evidence, we are fairly confident that what the research shows is likely close to the truth (i.e., **moderate certainty**), unless otherwise specified.

Community pharmacist-facilitated hypertension management services. Four included systematic reviews consistently suggested that pharmacist-facilitated support — delivered alone or with other professionals — probably improves blood pressure control and reduces systolic and diastolic blood pressure [6-9]. These interventions included medication management, lifestyle advice, blood pressure monitoring, adherence support, feedback to other clinicians and reminder systems.

Pharmacist-facilitated hypertension management services that involved the use of digital technologies: Remote follow-up by pharmacists also appears useful [14, 15]. The evidence suggested that pharmacist-led hypertension management with patient follow-up via remote communication tools probably reduces systolic blood pressure in people with hypertension [15]. This matters because remote follow-up may help reduce barriers to ongoing management for some groups, especially where attending services in person is more difficult.

Digital hypertension management approaches. Three systematic reviews reported evidence on digital hypertension management approaches targeting populations experiencing socioeconomic or ethnic disadvantage in high-income countries [12-14]. The digital content included wearables and/or app-connected devices [13]; the integration of electronic health records (EHRs) and mobile health (mHealth) technologies to support early identification, improve access to care, and enable hypertension self-management in primary care settings [12]; and mobile technology-enabled self-management interventions (e.g. smartphone apps, text messaging, or web-based platforms) [14]. The evidence suggested that these digital approaches have the potential to improve blood pressure

control and/or reduce systolic and diastolic blood pressure among disadvantaged groups. However, the evidence is of low certainty.

Community outreach worker-delivered hypertension management: Three systematic reviews suggest that community outreach worker-delivered approaches can help reduce systolic and diastolic blood pressure among populations with a diagnosis of hypertension [15-17].

These approaches include interventions delivered by community health workers and lay advisors offering patient navigation, education, or support, where the intervention detail was reported. However, the relevance of this evidence to specific underserved populations in the UK is not always clear, and much of the literature comes from the USA.

Faith institution-facilitated cardiovascular risk reduction services, including blood pressure tests: Faith-based and digital interventions may also help, but the evidence is uncertain. Faith institution-facilitated activities may reduce systolic blood pressure, but the evidence is limited and of low certainty. Digital interventions aimed at disadvantaged groups may improve blood pressure control or reduce systolic and diastolic blood pressure, but again, the evidence is mostly of low certainty, and the intervention content is described only briefly.

One mixed-methods review suggested that faith institution-facilitated hypertension risk reduction activities may reduce systolic blood pressure in adults by an average of 2.98 mmHg (95% CI -4.39 to -1.57) at three months and by 0.65 mmHg (95% CI -0.91 to -0.39) at 12 months, despite no difference in diastolic blood pressure [21].

Faith institution roles, as reported, largely include cardiovascular health promotion and education. These include promoting, encouraging and facilitating people's engagement in cardiovascular risk-reduction activities. Such roles include:

- health education related to cardiovascular health/disease directly linking to harmful lifestyle behaviours;
- teaching/ encouragement of personal psychological control;
- facilitation of exercise/physical activity as part of a normal lifestyle, changes in nutrition for cardiovascular health, cardiovascular health measurements, and opportunistic blood pressure tests.

Key insights for future service design

Local systems looking to improve hypertension detection and control in underserved populations may want to consider the following evidence-informed insights:

1. Design the whole pathway

Approaches that increase blood pressure testing do not always lead to treatment. Where links between testing and follow-up were reported, less than half of the people who had blood pressure tests in communities received follow-up care.

2. Use trusted settings, but do not rely on trust alone

Trust helps, but does not guarantee follow-up.

3. Embed referral and data-sharing arrangements from the outset

Approaches delivered outside general practice or standard NHS pathways often lacked effective systems for recording results, signposting individuals, and referral. Where integration with clinical systems was limited, community-based blood pressure testing increased measurement, but diagnosis or treatment was sometimes limited, as disclosure of readings relied on individuals in some approaches.

4. Address equity through design

Targeted approaches can address equity when they are accessible, culturally appropriate and easy to use. However, barriers such as language, digital access, privacy, and lack of accessible equipment may limit their reach and reinforce inequalities.

5. Plan for sustainability

Many approaches rely on short-term funding, incentives, partnerships, or additional staff effort and stop when these end.

Conclusion

Targeted approaches can widen access to blood pressure checks among high-risk, underserved populations, especially when they are delivered in convenient, trusted community settings and through tailored invitations and digital routes. However, a key weakness remains: the pathway from detection to care is often unclear and may not work well in practice.

Improving blood pressure control is not just about finding more people with raised blood pressure. It requires services that make it easy for people to move from testing to treatment and to stay in care.

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