



# The benefits of a team-based care approach to improve drug adherence in hypertension

Michel Burnier\* 

Faculty of Biology and Medicine, University of Lausanne, Lausanne 1011, Switzerland

**\*Correspondence:** Michel Burnier, Faculty of Biology and Medicine, University of Lausanne, Lausanne 1011, Switzerland. [michel.burnier@netplus.ch](mailto:michel.burnier@netplus.ch)

**Academic Editor:** Maria Paz Ocaranza, Pontificia Universidad Católica de Chile, Chile

**Received:** November 11, 2024 **Accepted:** January 26, 2025 **Published:** February 18, 2025

**Cite this article:** Burnier M. The benefits of a team-based care approach to improve drug adherence in hypertension. *Explor Med.* 2025;6:1001285. <https://doi.org/10.37349/emed.2025.1001285>

## Abstract

Team-based care is a patient management strategy involving a team of at least two healthcare professionals working collaboratively toward a shared clinical goal. This approach is now increasingly recommended by international hypertension guidelines mainly to improve medication adherence and hence, blood pressure control. The goal of this paper was to review the most recent evidence on the benefits of a team-based care approach in the management of hypertension. The results show that in recent years, numerous controlled clinical trials have demonstrated the efficacy of this strategy to lower blood pressure, achieve blood pressure targets more rapidly, and obtain more hypertensive patients under control. These improvements are due essentially to two factors: improved drug adherence/persistence and a reduction of therapeutic inertia. Best results are obtained when physicians collaborate with pharmacists and/or nurses, but other healthcare professionals may be involved successfully as well. Recent data have also demonstrated that the team-based care approach is cost-effective. These observations should be a strong incentive for hypertension centers to engage in the development of a team-based care strategy.

## Keywords

Adherence, medication, nurses, pharmacists, health care providers, blood pressure, cost-effectiveness

## Introduction

Arterial hypertension, or elevated blood pressure, is highly prevalent worldwide and remains the leading cause of cardiovascular diseases and mortality despite the fact that it is relatively easy to detect and can often be controlled with effective low-cost medications [1]. In this respect, a recent survey has shown that both the detection and the control of hypertension are low in most regions of the world, particularly in low-income countries, although some improvements have been noticed mainly in high-income countries [1]. Several reasons have been evoked to explain these rather poor results including weaknesses in healthcare systems and problems of access to care in some countries. In developed countries, other issues have been identified as major factors resulting in poor blood pressure control, the most prevalent being poor



adherence and persistence to prescribed medications and therapeutic inertia. In a meta-analysis involving 27 million patients with elevated blood pressure, non-adherence to medications was found to be the leading cause of uncontrolled hypertension and once again, the problem was more prevalent in low-income countries [2]. Yet, even in high-income areas of the world, the prevalence of non-adherence to antihypertensive drugs ranged between 25% and 40% depending on the methodology used to measure adherence. A lower prevalence of non-adherence (8–9%) has been reported in some groups of patients with apparent resistant hypertension using determinations of plasma or urine drug levels [3, 4]. In fact, these lower percentages reveal the major challenge of medication adherence research, i.e. the reliability of methods used to assess non-adherence. Indeed, as reported previously, simple and cheap methods e.g., patient interviews or questionnaires are unreliable and overestimate medication adherence [5, 6]. More expensive methods such as dosing of drugs in plasma or urine can ascertain drug intake but they do not provide any information on the dosing history. The same is true for the percentage of days covered by the prescriptions, a method generally used in epidemiological studies. Thus, in one of the studies reported above, patients were informed that drug adherence would be measured during each term [4]. In the other study, the low percentage is probably explained by the “white coat” adherence phenomenon according to which patients tend to improve their adherence before clinical terms [5]. Hence, drug adherence may look perfect even though it is low between consultations. Therefore, the true prevalence of non-adherence remains unprecise. Of note, figures reported with non-objective methods are generally underestimated because non-adherence is under-reported by patients [7]. Regarding the prevalence of therapeutic inertia, defined as the failure to intensify treatment when the targets are not achieved, several national surveys reported prevalence of therapeutic inertia ranging between 50% and 60% in patients with uncontrolled hypertension [8–10].

Considering the high prevalence of both non-adherence and therapeutic inertia, it is important to develop clinical strategies to fight against these two major limiting factors in the management of hypertensive patients. In the last decade, international hypertension guidelines have strongly emphasized the need to consider non-adherence and inertia as important topics to improve blood pressure control in the population and have proposed clear suggestions on how physicians, health care systems, and patients themselves could contribute to reducing nonadherence and therapeutic inertia [11–14]. Table 1 illustrates the recommendations from the European Society of Hypertension and European Society of Cardiology in 2018. These recommendations include easy to implement and effective strategies such as simplifying treatments using single-pill combinations or promoting the share-decision processes [15–17]. Published in 2018, they were maintained by both Societies in their most recent guidelines [13, 18].

Among the various approaches proposed by these guidelines, one of them implies the collaboration between healthcare providers in the concept of team-based care [19]. The purpose of this small review is to discuss the evidence, and the potential benefits of the team-based care approach based on recent publications.

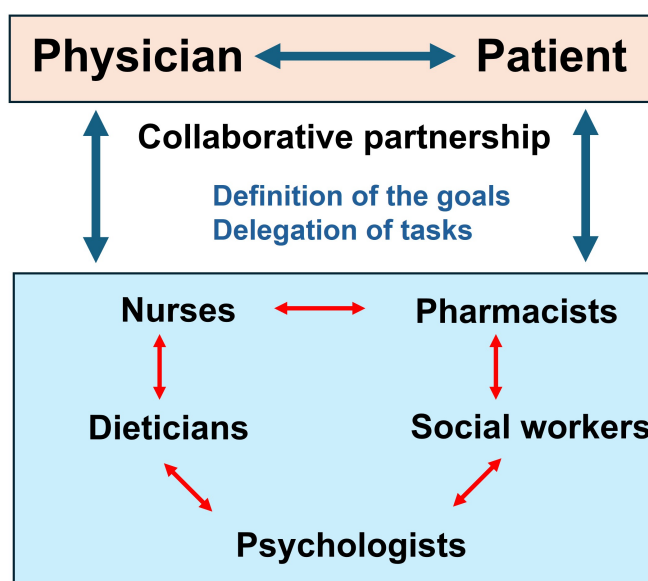
## What is team-based care?

Team-based care is usually defined as the provision of health services to individuals or families by at least two healthcare professionals who work collaboratively with patients and their caregivers to accomplish shared goals within and across settings to achieve coordinated, high-quality care. The concept is designed to unload physicians delegating several of their tasks to other healthcare providers and should enhance efficiency and access to care, improve quality, and increase the satisfaction of all stakeholders involved in medical care (physicians, employees, and patients). Figure 1 illustrates one of the possible structures of a team. In this example, the patient-physician partnership is the basis of the team-based care structure. Once the therapeutic goals are defined by the physician in agreement with the patient, tasks can be delegated to various healthcare providers. These latter should coordinate their efforts sharing their results in regular encounters. The composition of the team may vary depending on the clinical setting (hospital, ambulatory care), the type of hypertensive patients (with or without hypertensive complications such as heart failure, stroke, or chronic kidney disease), and the structure of the local healthcare system. In most cases, the team

**Table 1. Recommendations from the European Society of Hypertension and European Society of Cardiology to improve drug adherence in hypertensive patients (from [11])**

Level of action	Recommendations
Physician level	<ul style="list-style-type: none"> <li>• Provide information on the risks of hypertension and the benefits of treatment, as well as agreeing on a treatment strategy to achieve and maintain blood pressure control using lifestyle measures and a single-pill-based treatment strategy when possible (information material, programmed learning, and computer-aided counseling)</li> <li>• Empowerment of the patient</li> <li>• Feedback on behavioral and clinical improvements</li> <li>• Assessment and resolution of individual barriers to adherence</li> <li>• Collaboration with other healthcare providers, especially nurses and pharmacists</li> </ul>
Patient level	<ul style="list-style-type: none"> <li>• Self-monitoring of blood pressure (including telemonitoring)</li> <li>• Group sessions</li> <li>• Instruction combined with motivational strategies</li> <li>• Self-management with simple patient-guided systems</li> <li>• Use of reminders</li> <li>• Obtain family, social, or nurse support</li> <li>• Provision of drugs at worksite</li> </ul>
Treatment level	<ul style="list-style-type: none"> <li>• Simplification of the drug regimen favoring the use of single-pill therapy</li> <li>• Reminder packaging</li> </ul>
Health system level	<ul style="list-style-type: none"> <li>• Supporting the development of monitoring systems (telephone follow-up, home visits, telemonitoring of home blood pressure, and electronic health records)</li> <li>• Financially supporting the collaboration between healthcare providers (e.g., pharmacists and nurses)</li> <li>• Reimbursement of single-pill combination pills</li> <li>• Development of national databases, including prescription data, available for physicians and pharmacists</li> <li>• Accessibility to drugs</li> </ul>

is coordinated by a physician and involves registered nurses or nurse practitioners and pharmacists who can handle medications. In some cases, the team is led by a nurse or a pharmacist. The group may also include other healthcare professionals such as dietitians, psychologists, physiotherapists, and social workers. In 2018, the World Health Organization published recommendations for the implementation of team-based care in the management of cardiovascular diseases in primary health care [20].



**Figure 1. Example of a team-based care structure based on the physician-patient partnership**

For the detection of hypertension and sometimes for the follow-up of patients with low resources, other settings have been developed with some success such as barbershops [21, 22], hairdressers [23], faith-based organizations [24], and pharmacies [25]. Interestingly, these latter opportunities to get access to patients not consulting regularly, such as Black patients or patients of Hispanic origin, have been shown to provide sustained and cost-effective improvements in blood pressure control when compared to a standard management of hypertension [24, 26–29].

There are several important rules and conditions for a team to work effectively. The first is undoubtedly effective communication between partners. Today, patients are often sent to the different members of the team without sufficient communication between the disciplines. As suggested recently, the scheme of interdisciplinary teams working around the patient should evolve [30]. Another important condition is the trust and the respect between the disciplines. The role of each participant should be well defined, and a goal of care should be agreed upon and accepted unanimously to improve the patient's health. Further, all partners of the team follow evidence-based protocols. The team may also reinforce the engagement of patients in their own care and provide health behavior counseling, coaching, and education to empower patients and support blood pressure management. In this respect, both nurses and pharmacists have areas of expertise that might help support and improve medication adherence, for example [31]. In the future, the team-based work may also include statistical assessments and cost-effectiveness evaluations as well as interactive artificial intelligence means to support patients and promote recommendations. One important aspect of the team-based care approach is the improved follow-up and monitoring of clinical results. Indeed, today, because of the heavy load of physicians, the number of terms with general practitioners tends to decrease. The opportunity to meet on a more regular basis with either a practicing nurse or a pharmacist increases the number of encounters, in which issues linked to drug therapy (unwanted side effects, missed doses, drug interactions, etc.) can be discussed. Moreover, clinical parameters can be monitored more regularly providing useful information to treating physicians on how to adapt or eventually modify the drug prescription to ensure long-term persistence with good clinical control. In this respect, the use of electronic health records accessible to all team members is important. These records should contain information on demographics, medical history, and clinical data such as blood pressure, heart rate, body weight, medications and allergies, immunization status, and laboratory test results.

Finally, the collaboration with social workers, home visiting nurses and psychologists provides a unique opportunity to gather useful information on the social determinants of health, which are known to play an important role in the successful management of hypertensive patients [32]. This includes the quality of the neighborhood, economic security, food security, the social and community context, and the level of education. More recently, other factors such as noise or air pollution and the access to green spaces have also been shown to affect blood pressure control and to increase the cardiovascular risk in exposed populations [33].

Taken together, all these aspects tend to demonstrate that team-based care is advantageous and may improve both patient and physician satisfaction [34]. Yet, team-based care can also confront barriers. Patients may develop a negative attitude with the feeling of being treated only by non-physicians. In addition, physicians' attitudes and reactions may not be supportive. Finally, depending on country legislations, regulatory aspects may limit the management opportunities by nurses due to their impossibility to prescribe.

## **Does team-based care improve adherence and blood pressure control in hypertension?**

In the last two decades, several systematic reviews and meta-analyses have assessed the capacity of the team-based care approach to improve blood pressure control and medication adherence [9, 29, 35–44]. From these reviews, it appears that among all clinical strategies developed to improve medication adherence and hence blood pressure control, team-based care has the largest effect size resulting in

significant reductions in blood pressure when compared to usual care. In an early meta-analysis of controlled clinical trials involving a nurse or a pharmacist by Carter et al. [35], team-based care was the most effective way to lower systolic blood pressure with a mean effect of  $-8.7$  to  $-3.6$  mmHg. Interestingly, however, the individual components of the team had also a large effect size on systolic blood pressure including pharmacist treatment recommendations ( $-9.30$  mmHg), intervention by nurses ( $-4.80$  mmHg), and use of a treatment algorithm ( $-4.00$  mmHg). The odds ratios (95% confidence intervals) for controlled blood pressure were: nurses, 1.69 (1.48–1.93); pharmacists within primary care clinics, 2.17 (1.75–2.68); and community pharmacists, 2.89 (1.83–4.55). In a more recent meta-analysis of 19 studies comprising 5,993 adult patients with uncontrolled hypertension, the team-based care-induced 12-month systolic blood pressure change versus usual care was  $-5.0$  mmHg ( $-7.9$  to  $-2.2$  mmHg) for team-based care with physician titration [29]. Interestingly, when treatments were titrated by a non-physician the reduction in systolic blood pressure with team-based care was even greater at  $-10.5$  mmHg ( $-16.2$  to  $-4.8$  mmHg) [29]. These findings confirm earlier observations on the benefits of the teamwork even when drug titration is not performed by a physician. However, a strict drug management protocol must be followed by non-physicians.

In general, the improvement of blood pressure when patients are managed by a team of healthcare professionals is attributed to better medication adherence and persistence and to a reduction of therapeutic inertia. In a randomized controlled study among older patients with high cardiovascular risk and taking at least 4 drugs, a comprehensive pharmacy care system has reported a significant improvement in drug adherence and persistence along with improvements in clinical parameters including blood pressure and the lipid profile [45]. Sometimes, ameliorations of drug adherence are modest, but this may be due to the lack of sensitivity of the method used to monitor drug adherence [46].

Team-based care also prevents therapeutic inertia. In the analyses performed by Bryant et al. [29], the time for blood pressure control was significantly shorter when patients were handled by team with a nurse or a pharmacist leading the team and adapting medications. A reduction of therapeutic inertia when implementing the team-based care strategy has been demonstrated in a study of uninsured patients [47]. This study included 377 patients. The median time to BP goal was 36 days in the physician-pharmacist collaboration group and 259 days in the usual care cohort ( $p < 0.001$ ). At 12 months, blood pressure control was 81% in the team-based care group and 44% in the usual care cohort, respectively ( $p < 0.001$ ) and therapeutic inertia was lower in the collaborative cohort (27.6%) than in the usual care group (43.7%) ( $p < 0.0001$ ).

As mentioned above, the problem of poor adherence to medications and uncontrolled blood pressure is particularly prominent in middle- and low-income countries and in low-resource patients [41, 48]. Ogungbe et al. [40] have performed another systematic review and meta-analysis testing team-based care efficacy at different levels of hypertension team-based care complexity in low- and middle-income countries. In their analysis, the mean effect of team-based care versus usual care on blood pressure was  $-4.6$  mmHg ( $-5.8$  to  $-3.4$  mmHg). The greatest reduction in systolic blood pressure was observed in team-based care involving pharmacists ( $-7.3$  mmHg;  $-9.2$  to  $-5.4$  mmHg) followed by nurses ( $-5.1$  mmHg;  $-8.0$  to  $-2.2$  mmHg). Significant decreases in blood pressure were also observed with the interventions of dietitians ( $-4.7$  mmHg) or community health workers ( $-3.3$  mmHg). The results clearly show that a team-based care approach can be implemented successfully in low- and middle-income countries.

Besides interventions involving pharmacists, several studies have demonstrated the impact of nurse interventions [36]. In a systematic review of randomized controlled trials of nursing interventions for hypertension compared with usual care in adults, Clark et al. [36] showed that nurse interventions that included the use of a stepped treatment algorithm showed greater reductions in systolic blood pressure than usual care (weighted mean difference  $-8.2$  mmHg,  $-11.5$  to  $-4.9$  mmHg). Nurse prescribing showed also greater reductions in blood pressure (systolic  $-8.9$  mmHg,  $-12.5$  to  $-5.3$  mmHg and diastolic  $-4.0$  mmHg,  $-5.3$  to  $-2.7$  mmHg) than usual care [36]. In addition, recent evidence has demonstrated that medication management by nurses or registered dietitian nutritionists leads to clinically significant

improvements in the management of patients with diabetes, dyslipidemia, or hypertension when using physician-approved protocols or treatment algorithms [49]. These findings further support the collaboration with nurses and other healthcare professionals in the management of hypertension.

## Conclusions

There is now increasing evidence supporting the management of hypertensive patients using a team-based care approach, particularly in those patients with uncontrolled hypertension. The main mechanisms resulting in faster and better control of blood pressure with team-based care are an improvement in medication adherence and persistence and a reduction of therapeutic inertia. This latter is probably due to a stricter application of therapeutic protocols by non-physicians [50].

In addition, increased implementation of home blood pressure monitoring and a greater use of single-pill combinations may contribute to the success of the team-based care strategy [5, 17, 51]. It is therefore not surprising that medical associations and international guidelines now strongly recommend approaches involving several healthcare professionals [12–14, 19, 52, 53].

With the actual development of new tools (electronic monitoring, eHealth, telehealth, artificial intelligence, etc.), opportunities to involve more healthcare partners, without increasing the workload and the costs, are becoming possible [54, 55]. In addition, recent analyses of hypertension have demonstrated that team-based care is cost-effective [28, 29, 56]. Therefore, hypertension centers should engage in the development of this strategy. In this context, the hypertension community could learn from other fields of medicine such as HIV or oncology, in which team-based care programs have been implemented successfully within outpatient departments resulting in an improved medication adherence and clinical outcomes [31, 57–59].

## Declarations

### Author contributions

MB: Conceptualization, Formal analysis, Investigation, Writing—original draft, Writing—review & editing.

### Conflicts of interest

The author declares that there are no conflicts of interest.

### Ethical approval

Not applicable.

### Consent to participate

Not applicable.

### Consent to publication

Not applicable.

### Availability of data and materials

Not applicable.

### Funding

Not applicable.

### Copyright

© The Author(s) 2025.

## Publisher's note

Open Exploration maintains a neutral stance on jurisdictional claims in published institutional affiliations and maps. All opinions expressed in this article are the personal views of the author(s) and do not represent the stance of the editorial team or the publisher.

## References

1. NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participants. *Lancet*. 2021;398:957–80. [DOI] [PubMed] [PMC]
2. Lee EKP, Poon P, Yip BHK, Bo Y, Zhu MT, Yu CP, et al. Global Burden, Regional Differences, Trends, and Health Consequences of Medication Nonadherence for Hypertension During 2010 to 2020: A Meta-Analysis Involving 27 Million Patients. *J Am Heart Assoc*. 2022;11:e026582. [DOI] [PubMed] [PMC]
3. Bergland OU, Halvorsen LV, Søråas CL, Hjørnholm U, Kjær VN, Rognstad S, et al. Detection of Nonadherence to Antihypertensive Treatment by Measurements of Serum Drug Concentrations. *Hypertension*. 2021;78:617–28. [DOI] [PubMed]
4. Hamdidouche I, Jullien V, Boutouyrie P, Billaud E, Azizi M, Laurent S. Routine urinary detection of antihypertensive drugs for systematic evaluation of adherence to treatment in hypertensive patients. *J Hypertens*. 2017;35:1891–8. [DOI] [PubMed]
5. Burnier M, Egan BM. Adherence in Hypertension: A Review of Prevalence, Risk Factors, Impact, and Management. *Circ Res*. 2019;124:1124–40. [DOI] [PubMed]
6. Robberechts T, Stoeniu MS, Burnier M, Persu A. Optimizing drug adherence in hypertension: More than a mind game. *Kardiol Pol*. 2024;82:259–66. [DOI] [PubMed]
7. Abegaz TM, Shehab A, Gebreyohannes EA, Bhagavathula AS, Elnour AA. Nonadherence to antihypertensive drugs: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2017;96:e5641. [DOI] [PubMed] [PMC]
8. Darricarrere C, Jacquot E, Bricout S, Louis C, Bénard M, Poulter NR. Uncontrolled blood pressure and therapeutic inertia in treated hypertensive patients: A retrospective cohort study using a UK general practice database. *J Clin Hypertens (Greenwich)*. 2023;25:895–904. [DOI] [PubMed] [PMC]
9. Milman T, Joundi RA, Alotaibi NM, Saposnik G. Clinical inertia in the pharmacological management of hypertension: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2018;97:e11121. [DOI] [PubMed] [PMC]
10. Zheutlin AR, Mondesir FL, Derington CG, King JB, Zhang C, Cohen JB, et al. Analysis of Therapeutic Inertia and Race and Ethnicity in the Systolic Blood Pressure Intervention Trial: A Secondary Analysis of a Randomized Clinical Trial. *JAMA Netw Open*. 2022;5:e2143001. [DOI] [PubMed] [PMC]
11. Williams B, Mancia G, Spiering W, Agabiti Rosei E, Azizi M, Burnier M, et al. 2018 ESC/ESH Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Cardiology and the European Society of Hypertension. *J Hypertens*. 2018;36:1953–2041. [DOI] [PubMed]
12. Unger T, Borghi C, Charchar F, Khan NA, Poulter NR, Prabhakaran D, et al. 2020 International Society of Hypertension global hypertension practice guidelines. *J Hypertens*. 2020;38:982–1004. [DOI] [PubMed]
13. Mancia G, Kreutz R, Brunström M, Burnier M, Grassi G, Januszewicz A, et al. 2023 ESH Guidelines for the management of arterial hypertension *The Task Force for the management of arterial hypertension of the European Society of Hypertension*: Endorsed by the International Society of Hypertension (ISH) and the European Renal Association (ERA). *J Hypertens*. 2023;41:1874–2071. [DOI] [PubMed]

14. Whelton PK, Carey RM, Aronow WS, Casey DE Jr, Collins KJ, Dennison Himmelfarb C, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Hypertension*. 2018;71:e13–115. [DOI] [PubMed]
15. Egan BM, Kjeldsen SE, Narkiewicz K, Kreutz R, Burnier M. Single-pill combinations, hypertension control and clinical outcomes: potential, pitfalls and solutions. *Blood Press*. 2022;31:164–8. [DOI] [PubMed]
16. Pathak A, Poulter NR, Kavanagh M, Kreutz R, Burnier M. Improving the Management of Hypertension by Tackling Awareness, Adherence, and Clinical Inertia: A Symposium Report. *Am J Cardiovasc Drugs*. 2022;22:251–61. [DOI] [PubMed] [PMC]
17. Parati G, Kjeldsen S, Coca A, Cushman WC, Wang J. Adherence to Single-Pill Versus Free-Equivalent Combination Therapy in Hypertension: A Systematic Review and Meta-Analysis. *Hypertension*. 2021;77:692–705. [DOI] [PubMed]
18. McEvoy JW, McCarthy CP, Bruno RM, Brouwers S, Canavan MD, Ceconi C, et al.; ESC Scientific Document Group. 2024 ESC Guidelines for the management of elevated blood pressure and hypertension: Developed by the task force on the management of elevated blood pressure and hypertension of the European Society of Cardiology (ESC) and endorsed by the European Society of Endocrinology (ESE) and the European Stroke Organisation (ESO). *Eur Heart J*. 2024;45:3912–4018. [DOI] [PubMed]
19. Abdalla M, Bolen SD, Brettler J, Egan BM, Ferdinand KC, Ford CD, et al.; American Heart Association and American Medical Association. Implementation Strategies to Improve Blood Pressure Control in the United States: A Scientific Statement From the American Heart Association and American Medical Association. *Hypertension*. 2023;80:e143–57. [DOI] [PubMed] [PMC]
20. HEARTS Technical package for cardiovascular disease management in primary health care: access to essential medicines and technology [Internet]. Geneva: World Health Organization; c2018 [cited 2025 Jan 20]. Available from: <https://iris.who.int/bitstream/handle/10665/260420/WHO-NMH-NVI-18.3-eng.pdf>
21. Victor RG, Blyler C, Elashoff RM. A Trial of Blood-Pressure Reduction in Black Barbershops. *N Engl J Med*. 2018;379:200–1. [DOI] [PubMed]
22. Victor RG, Lynch K, Li N, Blyler C, Muhammad E, Handler J, et al. A Cluster-Randomized Trial of Blood-Pressure Reduction in Black Barbershops. *N Engl J Med*. 2018;378:1291–301. [DOI] [PubMed] [PMC]
23. Boivin JM, Risse J, Laurière E, Burnier M. Screening for hypertension at the hairdresser: a feasibility study in France and Morocco. *Blood Press*. 2020;29:202–8. [DOI] [PubMed]
24. Schoenthaler AM, Lancaster KJ, Chaplin W, Butler M, Forsyth J, Ogedegbe G. Cluster Randomized Clinical Trial of FAITH (Faith-Based Approaches in the Treatment of Hypertension) in Blacks: Main Trial Results. *Circ Cardiovasc Qual Outcomes*. 2018;11:e004691. [DOI] [PubMed]
25. Santschi V, Chiolero A, Burnand B, Colosimo AL, Paradis G. Impact of pharmacist care in the management of cardiovascular disease risk factors: a systematic review and meta-analysis of randomized trials. *Arch Intern Med*. 2011;171:1441–53. [DOI] [PubMed]
26. Blyler CA, Ebinger J, Rashid M, Moy NP, Cheng S, Albert CM, et al. Improving Efficiency of the Barbershop Model of Hypertension Care for Black Men With Virtual Visits. *J Am Heart Assoc*. 2021;10:e020796. [DOI] [PubMed] [PMC]
27. Blyler CA, Rader F. Sustainability of blood pressure reduction in black barbershops. *Curr Opin Cardiol*. 2019;34:693–9. [DOI] [PubMed] [PMC]
28. Bryant KB, Moran AE, Kazi DS, Zhang Y, Penko J, Ruiz-Negrón N, et al. Cost-Effectiveness of Hypertension Treatment by Pharmacists in Black Barbershops. *Circulation*. 2021;143:2384–94. [DOI] [PubMed] [PMC]



29. Bryant KB, Rao AS, Cohen LP, Dandan N, Kronish IM, Barai N, et al. Effectiveness and Cost-Effectiveness of Team-Based Care for Hypertension: A Meta-Analysis and Simulation Study. *Hypertension*. 2023;80:1199–208. [DOI] [PubMed] [PMC]
30. Choi BC, Pak AW. Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness. *Clin Invest Med*. 2006;29:351–64. [PubMed]
31. Celio J, Ninane F, Bugnon O, Schneider MP. Pharmacist-nurse collaborations in medication adherence-enhancing interventions: A review. *Patient Educ Couns*. 2018;101:1175–92. [DOI] [PubMed]
32. Chaturvedi A, Zhu A, Gadela NV, Prabhakaran D, Jafar TH. Social Determinants of Health and Disparities in Hypertension and Cardiovascular Diseases. *Hypertension*. 2024;81:387–99. [DOI] [PubMed] [PMC]
33. Hahad O, Rajagopalan S, Lelieveld J, Sørensen M, Frenis K, Daiber A, et al. Noise and Air Pollution as Risk Factors for Hypertension: Part I—Epidemiology. *Hypertension*. 2023;80:1375–83. [DOI] [PubMed] [PMC]
34. Will KK, Johnson ML, Lamb G. Team-Based Care and Patient Satisfaction in the Hospital Setting: A Systematic Review. *J Patient Cent Res Rev*. 2019;6:158–71. [DOI] [PubMed] [PMC]
35. Carter BL, Rogers M, Daly J, Zheng S, James PA. The potency of team-based care interventions for hypertension: a meta-analysis. *Arch Intern Med*. 2009;169:1748–55. [DOI] [PubMed] [PMC]
36. Clark CE, Smith LF, Taylor RS, Campbell JL. Nurse led interventions to improve control of blood pressure in people with hypertension: systematic review and meta-analysis. *BMJ*. 2010;341:c3995. [DOI] [PubMed] [PMC]
37. Mills KT, Obst KM, Shen W, Molina S, Zhang HJ, He H, et al. Comparative Effectiveness of Implementation Strategies for Blood Pressure Control in Hypertensive Patients: A Systematic Review and Meta-analysis. *Ann Intern Med*. 2018;168:110–20. [DOI] [PubMed] [PMC]
38. Nieuwlaat R, Wilczynski N, Navarro T, Hobson N, Jeffery R, Keepanasseril A, et al. Interventions for enhancing medication adherence. *Cochrane Database Syst Rev*. 2014;2014:CD000011. [DOI] [PubMed] [PMC]
39. Ogungbe O, Byiringiro S, Adedokun-Afolayan A, Seal SM, Dennison Himmelfarb CR, Davidson PM, et al. Medication Adherence Interventions for Cardiovascular Disease in Low- and Middle-Income Countries: A Systematic Review. *Patient Prefer Adherence*. 2021;15:885–97. [DOI] [PubMed] [PMC]
40. Ogungbe O, Cazabon D, Ajenikoko A, Jeemon P, Moran AE, Commodore-Mensah Y. Determining the frequency and level of task-sharing for hypertension management in LMICs: A systematic review and meta-analysis. *EClinicalMedicine*. 2022;47:101388. [DOI] [PubMed] [PMC]
41. Pasha M, Brewer LC, Sennhauser S, Alsawas M, Murad MH. Health Care Delivery Interventions for Hypertension Management in Underserved Populations in the United States: A Systematic Review. *Hypertension*. 2021;78:955–65. [DOI] [PubMed]
42. Proia KK, Thota AB, Njie GJ, Finnie RK, Hopkins DP, Mukhtar Q, et al. Team-based care and improved blood pressure control: a community guide systematic review. *Am J Prev Med*. 2014;47:86–99. [DOI] [PubMed] [PMC]
43. Santschi V, Chiolero A, Colosimo AL, Platt RW, Taffé P, Burnier M, et al. Improving blood pressure control through pharmacist interventions: a meta-analysis of randomized controlled trials. *J Am Heart Assoc*. 2014;3:e000718. [DOI] [PubMed] [PMC]
44. Baral N, Volgman AS, Seri A, Chelikani V, Isa S, Javvadi SLP, et al. Adding Pharmacist-Led Home Blood Pressure Telemonitoring to Usual Care for Blood Pressure Control: A Systematic Review and Meta-Analysis. *Am J Cardiol*. 2023;203:161–8. [DOI] [PubMed]
45. Lee JK, Grace KA, Taylor AJ. Effect of a pharmacy care program on medication adherence and persistence, blood pressure, and low-density lipoprotein cholesterol: a randomized controlled trial. *JAMA*. 2006;296:2563–71. [DOI] [PubMed]

46. Hunt JS, Siemieniczuk J, Pape G, Rozenfeld Y, MacKay J, LeBlanc BH, et al. A randomized controlled trial of team-based care: impact of physician-pharmacist collaboration on uncontrolled hypertension. *J Gen Intern Med.* 2008;23:1966–72. [DOI] [PubMed] [PMC]
47. Dixon DL, Sisson EM, Parod ED, Van Tassell BW, Nadpara PA, Carl D, et al. Pharmacist-physician collaborative care model and time to goal blood pressure in the uninsured population. *J Clin Hypertens (Greenwich).* 2018;20:88–95. [DOI] [PubMed] [PMC]
48. Hinneh T, Boakye H, Metlock F, Ogungbe O, Kruahong S, Byiringiro S, et al. Effectiveness of team-based care interventions in improving blood pressure outcomes among adults with hypertension in Africa: a systematic review and meta-analysis. *BMJ Open.* 2024;14:e080987. [DOI] [PubMed] [PMC]
49. Benson G, Hayes J, Bunkers-Lawson T, Sidebottom A, Boucher J. Leveraging Registered Dietitian Nutritionists and Registered Nurses in Medication Management to Reduce Therapeutic Inertia. *Diabetes Spectr.* 2022;35:491–503. [DOI] [PubMed] [PMC]
50. Burnier M. Poor Physician Adherence to Clinical Guidelines in Hypertension—Time for Physicians to Face Clinical Inertia. *JAMA Netw Open.* 2024;7:e2426830. [DOI] [PubMed]
51. Nakanishi M, Mizuno T, Mizokami F, Koseki T, Takahashi K, Tsuboi N, et al. Impact of pharmacist intervention for blood pressure control in patients with chronic kidney disease: A meta-analysis of randomized clinical trials. *J Clin Pharm Ther.* 2021;46:114–20. [DOI] [PubMed]
52. Jafar TH, Shirore RM. Team-Based Care With Nonphysician Titration of Antihypertensive Medications in Collaboration With Physicians: A Cost-Effective Way to Control Blood Pressure? *Hypertension.* 2023;80:1209–12. [DOI] [PubMed]
53. Nickel WK, Weinberger SE, Guze PA; Patient Partnership in Healthcare Committee of the American College of Physicians; Carney J, Ende J, Hoy E, Myerson S, Rothholz M, Sands D, et al. Principles for Patient and Family Partnership in Care: An American College of Physicians Position Paper. *Ann Intern Med.* 2018;169:796–9. [DOI] [PubMed]
54. Murry LT, Kennelty K. Opportunity for Pharmacists in Telehealth, Team-Based Care: Clinical Inertia. *Telemed J E Health.* 2020;26:1199–201. [DOI] [PubMed] [PMC]
55. Ishak AM, Mukamal KJ, Wood JM, Vyavahare M, Cluett JL, Juraschek SP. Pharmacist-led rapid medication titration for hypertension management by telehealth: A quality improvement initiative. *J Clin Hypertens (Greenwich).* 2024;26:217–20. [DOI] [PubMed] [PMC]
56. Jacob V, Reynolds JA, Chattopadhyay SK, Nowak K, Hopkins DP, Fulmer E, et al. Economics of Team-Based Care for Blood Pressure Control: Updated Community Guide Systematic Review. *Am J Prev Med.* 2023;65:735–54. [DOI] [PubMed] [PMC]
57. Bandiera C, Cardoso E, Locatelli I, Zaman K, Diciolla A, Digkila A, et al. A pharmacist-led interprofessional medication adherence program improved adherence to oral anticancer therapies: The OpTAT randomized controlled trial. *PLoS One.* 2024;19:e0304573. [DOI] [PubMed] [PMC]
58. Lelubre M, Clerc O, Grosjean M, Amighi K, De Vriese C, Bugnon O, et al. Implementation study of an interprofessional medication adherence program for HIV patients in Switzerland: quantitative and qualitative implementation results. *BMC Health Serv Res.* 2018;18:874. [DOI] [PubMed] [PMC]
59. Lelubre M, Kamal S, Genre N, Celio J, Gorgerat S, Hugentobler Hampai D, et al. Interdisciplinary Medication Adherence Program: The Example of a University Community Pharmacy in Switzerland. *Biomed Res Int.* 2015;2015:103546. [DOI] [PubMed] [PMC]