



GUIDE FOR MANAGEMENT OF OVERDUE PATIENTS WITH HYPERTENSION



TABLE OF CONTENTS

| | |
|--|-----------|
| Introduction | 3 |
| Purpose of the document | 3 |
| Audience | 3 |
| Definitions of terminologies | 4 |
| Phone calls to overdue patients | 5 |
| Tasks for the program manager..... | 5 |
| Real-world Highlight | 5 |
| Tasks for the health care worker | 9 |
| Call script | 11 |
| Text message reminders for overdue patients | 15 |
| Considerations for text messages to patients..... | 15 |
| When to send a text message reminder | 15 |
| Example message content and cascade | 15 |
| Home visits for overdue patients | 16 |
| Tasks for the Home Health Supervisor | 16 |
| Tasks for the home visit staff | 17 |
| References | 18 |
| Appendix 1. Evidence for overdue patient tracking methods | 19 |
| Appendix 2. Overdue patient line list for digital and non-digital systems | 21 |
| Appendix 3. Prioritization guide | 22 |



Introduction

“Reducing loss to follow-up is a leading way to improve hypertension control and reduce deaths from heart attacks and strokes. Telephone calls, text messages, and home visits keep patients retained in treatment.”

Hypertension is the world’s leading cause of premature death, accounting for 10.7 million deaths annually, with the burden falling most heavily on low- and middle-income countries (LMICs) (1). Only 20% of people with hypertension worldwide have their blood pressure controlled (2). Loss to follow-up often occurs in 50% or more of patients with hypertension and is a significant barrier for controlling hypertension in LMICs (3-9). Effective strategies to keep patients from missing visits are urgently needed to improve hypertension control. Telephone calls, text messages, and home visits improve follow-up visit rates, helping patients get the care they need (See [Appendix 1: Evidence List](#)).

Purpose of the document

This guide supports hypertension programs to more effectively track and manage overdue patients. It clarifies roles, responsibilities, and the steps for patient tracking and management through phone calls, text message reminders, and home visits. This document is primarily intended for programs with digital systems already in place. An example of how these can be adapted for paper-based systems can be found in the [India Hypertension Control Initiative \(IHCI\) Training Manual](#), section 4.6.2 and section 5.

Note: *other patient retention interventions (multi-month refills, decentralizing care to facilities closer to patients’ homes, extended clinic hours, reduced clinic wait times, peer support groups) are outside the scope of this guide focused on overdue patient tracking through phone calls, text messages, and home visits.*



Audience

The intended users of this guide are:

- Hypertension program managers and other parties engaged in the implementation of overdue patient management
- Non-communicable disease program managers and supervisors at subnational and local levels
- Health care workers
- Staff or volunteers involved in community-based hypertension management
- Community Health Workers



Definitions of terminologies

Overdue patient: A patient under care with a scheduled visit date which has passed with no visit or whose last visit date was >30 days*.

Patients under care: Patients diagnosed with hypertension and assigned to a facility who have visited at least once in the last 12 months. *Excludes deceased patients.*

3-month loss to follow-up (LTFU): Patients under care with no visit recorded in the last 3 months.

12-month loss to follow-up (LTFU): Patients diagnosed with hypertension with no visit recorded in the last 12 months. *Excludes deceased patients.*

Tracking: A coordinated effort to contact patients diagnosed with hypertension who miss their follow-up appointment(s), with the aim of returning them to care.

**Time frame should be customized to local context and experience.
Examples are provided throughout this document.*

For further information or assistance please contact us.



Email us at info@resolvetosavelives.org



Fill out our [contact form](#)





Phone calls to overdue patients

Telephone calls to patients overdue for care are an effective way to increase follow-up visits. Based on our experience in several low- and middle-income country hypertension programs, you can expect up to 40% of patients to return to care if called.

Tasks for the program manager

Identify who is overdue: Create easy-to-use line lists of overdue patients

The first step in tracking overdue patients is for the program to generate an overdue patient line list (See [Table 1](#) and [Appendix 2](#) for examples). This is most easily done using a digital health record system but can be done manually for paper systems (For an example, see the [IHCI Training Manual, section 5.2](#)). See [Appendix 3](#) for considerations on when to use phone calls to track patients, and which patients to prioritize.

Patient criteria for overdue line list

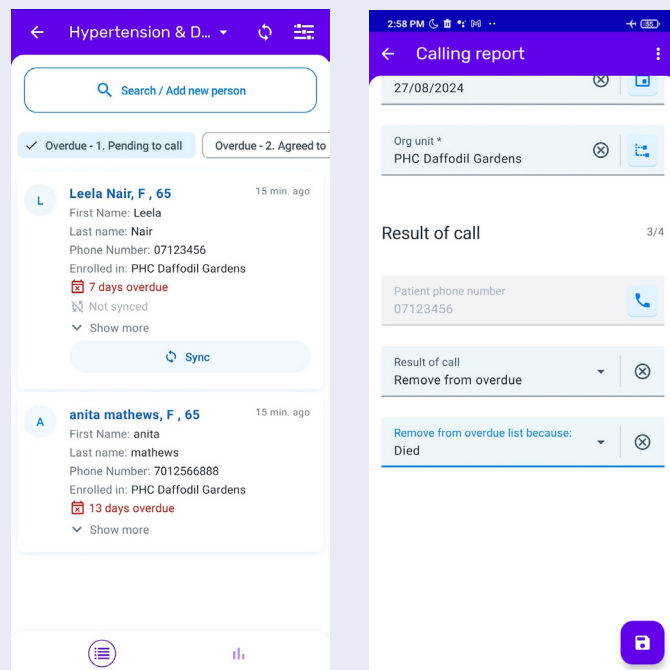
Using a digital health record system, program managers can pull reports and line lists for patients that:

- Are overdue for a scheduled appointment
- Who have not visited in >30 days (or other local return visit interval)

Digital tools (e.g. DHIS2) can be designed to display overdue patients within the tool so health workers can view or access any time without the need to pull and share a separate line list ([See below](#)).

Real-world Highlight

In one hypertension facility in Nigeria, >90% of patients return to care each month. The health worker views the overdue list in the DHIS2 app at the end of each clinic day and calls the patients that are overdue. If they haven't returned within the week, they send a community health worker to visit the patient's home.





Frequency of line list generation

Generate overdue patient lists weekly*.

* Frequency can be customized based on schedule of planned phone calls to overdue patients.

Table 1. Patient information to include in line list

| HYPERTENSION CARE & TREATMENT OVERDUE PATIENT CALL LIST | | | | | | | | | | | | | | | | |
|---|-----|-----|--------------|---------|---------|-----------------|----------------------------|--------------|-------------------|-----------------|--|---------------------|-------------------|---------------------|-------------------|---------------------|
| (To be used by the tracking team for all phone/home visit tracking) | | | | | | | | | | | | | | | | |
| Enter patient tracking information | | | | | | | | | | | | | | | | |
| Patient tracking information | | | | | | Patient status | | | | | Overdue Phone Call Attempt information | | | | | |
| Patient Name | Sex | Age | Phone number | Address | Village | Last visit date | Scheduled appointment date | Days overdue | Registration date | Last BP measure | Call 1 | | Call 2 | | Call 3 | |
| | | | | | | | | | | | Date (dd/mm/year) | Outcome (see Table) | Date (dd/mm/year) | Outcome (see Table) | Date (dd/mm/year) | Outcome (see Table) |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

See [Appendix 2](#) for a more detailed printable line list template.





Line list considerations

- Patients >12 months LTFU could be separated out, as they may require specific actions (e.g., likely to need a home visit if they do not return with a call)
- Patients without a working phone number should be directed to a home visit ([Figure 1](#))
- Patients that have permanently transferred care to another facility (public or private), moved/ relocated, or died should be removed from the overdue list following confirmation and documentation of case closure (For suggestions on selection of outreach methodology and prioritization of patients, see [Appendix 3](#))

Supporting outreach to overdue patients on the line list

Once the line list is generated, a program manager can support outreach calls to overdue patients using the following steps:

- 1 Assign a staff member at each health facility or a centralized call center, if one exists, the role of managing overdue patients (reviewing the line list and calling the patients). This could be done by:



The healthcare worker who provides direct patient care, e.g., nurse, medical officer, other



Any other facility staff involved in patient care, e.g., triage staff, registration staff, pharmacy staff



Designated community outreach worker



Call center staff member

- 2 Determine how often the assigned staff member should contact overdue patients (e.g., daily, weekly*) and how many times the health worker should call a patient before escalating to a home visit (e.g., Call 3 times at least one day apart over 1-2 weeks and then pass on to home visit*; [Figure 1](#))
- 3 If capacity for overdue calling is limited (e.g. Staff are unable to call all overdue patients each month), then define which patients to prioritize for calls. Potential prioritization criteria are listed in [Appendix 2](#).
- 4 Provide the assigned health worker with mobile credit or an office phone to ensure the cost of calls is covered. If using a personal device, consider masking the caller's phone number for security purposes. If using an office phone and the facility has the capacity to receive callbacks from patients, consider leaving the number unmasked. Provide a guide and script for overdue calls to the assigned health worker (see suggested [Call Script](#) below).



5 Monitor key indicators to assess outcomes of the calls. The top two indicators (in bold) are the most important indicators to monitor if the calls are working to bring patients back to care.

- Outcome Indicator:
 - **% of patients with no visit in the past 3 months** (3-month loss-to-follow-up or Missed Visits).
- Process indicators:
 - **% of overdue patients that are called**
 - % of overdue patients called that return to care
 - % of overdue patients that agreed to visit
 - % of patients removed from overdue list (e.g., due to death, relocation, transfer of care; See [Table 3](#) below)



Monitor if the interventions are having the intended impact in returning patients to care.

- Are patients being called? If so, are they returning?
- Is the loss-to-follow-up rate decreasing? If not, assess the reasons why and modify course until improved outcomes are achieved.

6 Provide supportive supervision. If the proportion of overdue calls is low, explore the root causes and support removing barriers to calls, increasing call capacity, providing feedback to health workers and other interventions to increase calls and return visit rates (See [Table 1 in paper](#) by Kannure, et. al for example supervisory checklist). If the percentage of patients removed from the list is very high, follow up with health workers to confirm that patients are being appropriately removed.

**Timing should be customized based on local context and experience*



Tasks for the health care worker

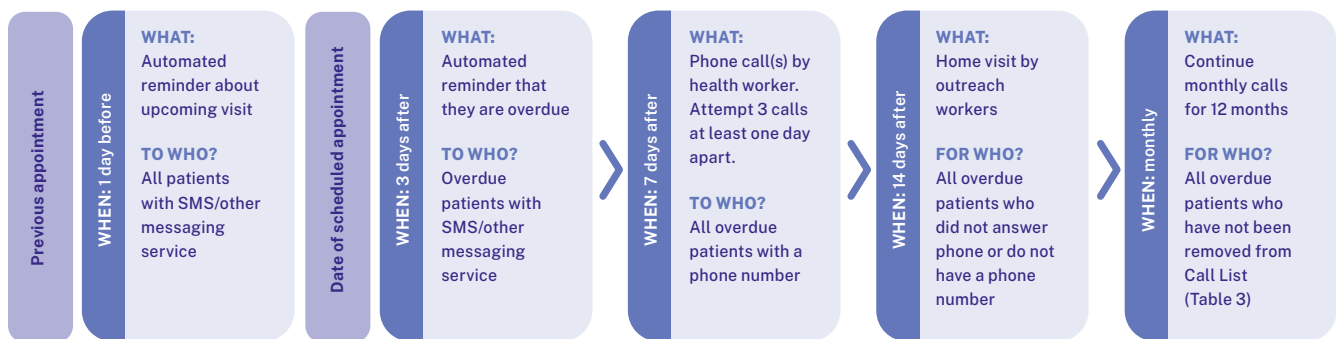
Phone calls to overdue patients:

Phone calls have been shown to be an effective way to return patients to care (see [Appendix 1](#)). The health care worker assigned to manage overdue patients should review the overdue line list and begin by calling each patient with a documented phone number on the list. If capacity is limited, see [Appendix 3](#) for guidance on which patients to prioritize.

Timing and frequency of calls

The health care worker should contact overdue patients one week after a missed visit*. If the patient is not available, the health worker should call that patient at least 3 times on different days before escalating to a home visit ([Figure 1](#)).

Figure 1. Suggested timeline* summary for patient outreach



*timeline and outreach methods should be adapted to local context and prioritization based on capacity





Tips for making successful calls

- Effective outreach calls should:
 - 1 Explain why you are reaching out to the individual
 - 2 Explain why addressing high blood pressure is important
 - 3 Include follow-up action(s) the patient should take (e.g. see a team member within the facility for a BP measurement, remind and encourage patient to take their medication as prescribed)
 - 4 Consider patient privacy requirements in your country when responding
- Your goal is to convince patients to return to care. Please try to listen to patients to understand their concerns. Friendly communication, empathy and concern for patients is very important for a successful call. Avoid shaming or blaming.
- If the patient is unable to visit the facility, recommend they have a care supporter collect medications from the facility on their behalf if this is permitted in the program.

Other helpful tips include:



Call at a time when patients are usually at home*.



Call from a quiet space with good network connectivity.



Take short breaks while calling as it can be tiring.

**Timing should be customized based on local context and experience*

Call flow

Figure 2. Call and Home Visit Flow Chart

| | |
|--|---|
| 1. INTRODUCE YOURSELF | Introduce yourself, your facility, and the reason you are calling. Ask to speak with the patient |
| 2. PROVIDE BACKGROUND | Provide background on why a visit to get their blood pressure checked is important and the goal of the call (get the patient to return to care) |
| 3. REASON FOR MISSED VISIT & ADDRESS CONCERNS | Ask why the patient missed their visit. Address any concerns the patient has about coming for a visit. |
| 4. SCHEDULE THE VISIT | Advise patient to come for follow-up. Let them know which days/times they can visit the NCD clinic |
| 5. PREPARE PATIENT FOR VISIT | Advise patient to take their medications before coming to the facility and to bring any required items with them |
| 6. WRAP UP CALL/VISIT | Thank patient for their time |



Call script

Step 1: Share your name and the name of the health facility that you are calling from. You can say you're calling from the facility where the patient last visited. In many places, patients who do not have a phone may provide the facility with someone else's phone number, so be sure to check that you are speaking to the patient, as sometimes family members or a care supporter will answer the call.

Say: *"Hello, this is [your name] calling from [name of facility patient last visited]. Can I please speak with [patient name]?"*

If the patient is not available, tell the responder the purpose of the call and ask if there is a better time to call or better phone number to reach the patient. If appropriate, you can also ask if the responder can relay the message that the patient is overdue for a follow-up visit and has the following options:

- 1 Call back at phone number XXXX XXXXX
- 2 Come to the [name of facility] to discuss their health condition and follow-ups

Step 2: If you successfully reach the patient, provide background information on why it's important to visit the clinic.

Say: *"I appreciate your time, and hope that you are doing well. The reason for my call is that you are overdue for your appointment [mention number of days overdue or missed appointment date], and your doctor says it's important for you to come for a follow-up visit to measure your blood pressure and receive your medications."*

Step 3: Ask why they missed their appointment, and document the reason. **If they are unsure about scheduling a new appointment**, ask them about their concerns. Listen and respond with empathy (See [Table 2](#) below).

Step 4: Advise patient to come for follow-up as soon as possible. Provide them with dates and times they can visit the clinic.

Step 5: Advise the patient to take their medications before coming to the facility and to bring any required items with them (e.g. medications, patient health ID Card or Medical Registration Number, Passport). If medicines are free, mention they can collect free medicines at the facility as that is likely to motivate patients to return.

Step 6: In closing, say: Thank you for your time.

Step 7: Record the outcome of the call (See [Table 3](#) in the "Record the Result of Every Call" section below)



Responding to incoming calls script

- Step 1:** Introduce yourself by work address and responsibility
- Step 2:** Ask caller's name
- Step 3:** Place caller on a brief hold to check your records and confirm the caller is a hypertension patient and overdue for a follow-up
- Step 4:** Assess the reason for the call and respond to the caller's concerns
- Step 5:** Follow steps 2-7 in the above [Call Script](#)

Voicemail script (if available)

Hello, this is [your name] from [facility name]. Your doctor asked me to call you because you are overdue for your appointment. Please visit [facility name] as soon as possible to measure your blood pressure and receive medications. I will try to reach you again later.

**Program managers should confirm patient privacy requirements before recommending that call staff leave voicemails*

Record the reason for the missed visit

After each call, document the reason why the patient missed their visit. Reasons may include:

- Out-of-pocket costs too high
- Too sick to visit
- Distance or lack of transport to the facility
- Medications not available
- Side effects of medication
- Lack of perceived need for ongoing hypertension treatment / Asymptomatic
- Do not trust facility/ poor service
- Natural treatment/uses local healers
- Transferred hypertension care to another facility (record whether public/private and confirm if visited in past month)
- Relocated
- Died
- Other reason -specify



Table 2. Providing support for common reasons patients miss their visits: responses and interventions

| Reason for missed visit | Response or intervention |
|---|--|
| Patient says: “I feel fine and don’t need medicine” | Remind them that they may not feel any symptoms with hypertension. It is, however, important to take their medicines regularly to prevent heart attacks or strokes. |
| Patient says: “The hospital is too far away and has long lines” | Suggest that they visit a smaller facility providing care that is close to their home (if feasible) |
| Patient says: “The medicine is not working for me” or are having side effects | Suggest that they meet with the doctor to discuss possible reasons and solutions |
| Patient says: “The medications are too expensive” | Explore if there are options to obtain free/ reduced-cost medications. Offer support to enroll in health insurance (if applicable) |
| Patient says: “I forgot about my appointment” | Suggest that, in the future, the patient set a calendar reminder or inquire about a support person who can remind them about their appointments. |
| Patient says: “I went to a local healer/ tried a natural treatment” | Inform the patient they can continue to see a local healer/ take natural treatment but should also keep taking their hypertension medications at the same time to prevent heart attacks and strokes |
| Patient says: “I have enough medicine with me still” | Acknowledge that the patient has extra medication to take and thank them for taking their medication. Remind them that, even if they have extra pills, it is still important to come for their follow-up appointment to check their blood pressure and see if their medication is working. |
| Patient says: “I am busy or traveling” | Tell the patient they can visit a different health facility in the areas where they are traveling. The patient can tell the facility they need medical follow-up for high blood pressure and the medication they take. Remind the patient it is important to visit their usual facility for follow-up as soon as they return/ are available. |
| Patient says: “I am too sick” | Tell the patient they need to seek medical care for the sickness and while they are doing this, they can also have their blood pressure checked. Ask them to please get medical care as soon as possible. |

Record the result of every call

After each call, record the outcome of the call (See [Table 3](#), column 1: Call Outcome). When the overdue list is initially created, all patients will be listed as “pending to call”. If using a digital system, the digital tool can further sort the overdue list into four categories based on the call outcome: Pending to call, Agreed to visit, Remind to call later, and Remove from call list (See [Table 3](#), Column 2). Patients will be automatically removed from the digital overdue list when they visit. Patients who were marked as “Remove from call list” can still be visible in the digital overdue list in the case program managers want to pursue further action for these patients. If using a paper log, the health care worker should manually record the call outcome (Column 1), ideally using a standardized list of options. Based on the call outcome, the health care worker should also manually remove patients from future overdue call lists.



Table 3. Recording call outcomes

| Call outcome | Overdue list category | Next Step |
|--|---|---|
| — | Pending to call | Health worker to call patient and then mark call outcome |
| Agreed to visit | Agreed to visit | Monitor and if patient still has not returned after one week, call again Digital tool can be programmed to automatically add patients back to “Pending to call” list after two weeks |
| No answer/ couldn’t reach patient directly | Remind to call later Then add to home visit list | Make at least 3 attempts on different days to call patient. If still unable to reach, move to home visit list |
| Wrong phone number | Remove from call list Add to home visit list | Flag to correct phone number if patient visits facility, and move to home visit list |
| Already visited facility | Remove from call list | |
| Moved to another location | Remove from call list | |
| Permanently transferred care to another facility | Remove from call list | |
| Opted out of reminder calls | Remove from call list | |
| Declined to return | Remove from call list | |
| Died | Remove from call list | |

Impact on key indicators

A patient removed from the overdue call list can remain in the denominator for key indicators (blood pressure control and loss-to-follow-up rates). Many programs decide to keep these patients in the denominator as the program is still accountable for their outcomes and so as not to incentivize staff to mark patients as “remove from call list” to make indicators look better. However, programs may opt to look at the indicators both ways:

- 1 % of patients with no visit in past 3 months out of denominator of all registered hypertension patients with a visit in past 12 months, excluding dead patients, and
- 2 % of patients with no visit in past 3 months out of denominator of registered hypertension patients with a visit in past 12 months, excluding patients who have moved, permanently transferred care, or died.



Text message reminders for overdue patients

Text message reminders through SMS or another messaging service can also successfully return patients to care. We recommend that a digital tool automatically send text reminders to overdue patients to reduce health worker time and effort. Our experience suggests that you can expect about a 4-6% increase in follow-up visits by messaging patients after they are overdue for a visit. This is a modest benefit, but, at scale, can return many patients to care with a relatively low-cost intervention that requires no extra work for health care workers. For further details on setting up this type of system, please [contact us](#).

Considerations for text messages to patients

Some considerations when texting important information to patients include:

- Avoid sending long messages (>160 characters) that will split into multiple texts
- Messages should be sent in the local language
- Be concise. Too much information may make the message difficult to understand.
- Identify yourself. This will help patients recognize the text message is not spam. Ideally, send text reminders with variables so you can customize information like Patient Name, Health facility name, and Appointment Date.
- Do a small test for yourself or your staff before sending widely.
- Whenever possible, use automated bulk text messaging through a local 3rd party SMS provider to save health workers' time. If this is not feasible in your context, health workers can send individual or group messages through SMS, WhatsApp, or other messaging platform.
- Consider patient privacy considerations as they apply to your local context.

When to send a text message reminder

If visit nonattendance is high:

- Send a text message reminder 1 day before and 3 days after the appointment (See [Figure 1](#)), and then call on the phone 7 days after the missed appointment if the patient has not yet visited.

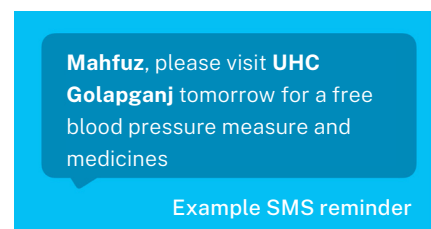
If the baseline patient visit rate is high (e.g. If 70% or more of patients attend their monthly appts):

- Consider waiting to send a text message reminder until 3 days after the visit, as it may be more cost-effective to send a reminder only to the smaller proportion of patients who do not attend their follow-up visit.

Example message content and cascade

Table 4. Text message reminders for overdue patients

| | |
|---------------------|--|
| 1 st SMS | <Patient name>, please visit <Facility> on <Date> for a blood pressure measure and medicines |
| 2 nd SMS | You are late for your blood pressure medicines. <Patient name>, please visit <Facility> as soon as possible for a blood pressure measure and medicines |





Home visits for overdue patients

In places with robust community health worker programs, home follow-up visits can be very effective for improving patient retention in care.

Tasks for the Home Health Supervisor

Home visit line lists

When a list of overdue patients is pulled, it should include their residential addresses, which should be descriptive using popular landmarks and local compound names for easy identification and tracking by the community health workers. Community health workers are often assigned to villages, so identifying which overdue patients reside in a specific village is very useful. Include the patient's village in the line list, making it easier to group patients by village to create a specific line list for each village health worker.

The list for home visits should include only those patients who meet the home visit criteria listed below (See [Appendix 2](#) for an example).

Patient criteria for overdue line list for home visits:

- Patients who are overdue and do not have a documented phone number
- Patients that have not answered their phone after 3 calls* or 14 days*
- Patients who have not been reached after 3 call attempts, including using phone numbers of care supporter/ next of kin
- Patients who agreed to visit during phone call but have still not returned after 2 weeks*
- Patients that have been overdue for a long period of time (e.g. 12-month LTFU patients)

**Number of calls and length of return time before referring patient to home visit should be adapted based on local context and experience*

Line list generation frequency

Select a frequency (e.g. weekly*) to generate the list of overdue patients who require a personal home visit.

** Frequency should be adapted based on local context and experience*

Who conducts the home visit?

Home visits can be conducted by health workers, outreach workers or volunteers.



Tasks for the home visit staff

Tips for a successful visit

- Effective home visits should:
 - 1 Explain why you are reaching out to the individual
 - 2 Explain why addressing high blood pressure is important
 - 3 Include follow-up action(s) the patient should take (e.g. see a team member within the facility for a BP measurement, remind and encourage patient to take their medication as prescribed)
- Your goal is to understand and alleviate patients' concerns and convince patients to return to care. Throughout the home visit, show empathy and understanding. Avoid shaming, blaming, or being judgmental.
- The home visit staff should bring facility identification to verify their role to the patient.

Home visit flow and script

For visit flow and script, refer to [Figure 2](#) and "[Call Script](#)" above. When the visit is over, the outreach worker should send the report back to the supervisor (e.g. health worker at the facility responsible for HTN, such as the NCD focal person) and the overdue patient log should be updated by the next working day.

For this guide, the scope focuses only on overdue patient tracking and returning patients to care. However, in many programs health workers may perform additional functions during home visits, such as blood pressure measurements, medication dispensing, and other components of care.

Program managers can adapt and customize home visit scripts and counseling guides based on the scope of the home visit functions.

For further information or assistance please contact us.



Email us at info@resolvetosavelives.org



Fill out our [contact form](#)





References

- 1 World Health Organization. Cardiovascular diseases (CVDs) 2021. [https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-\(cvds\)](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)). (Accessed 23 February 2023)
- 2 Global report on hypertension: the race against a silent killer. Geneva: World Health Organization; 2023.
- 3 Vedanthan R, Kumar A, Kamano JH, Chang H, Raymond S, Too K, Tulienge D, Wambui C, Bagiella E, Fuster V, Kimaiyo S. Effect of Nurse-Based Management of Hypertension in Rural Western Kenya. *Glob Heart*. 2020 Dec 1;15(1):77. doi: 10.5334/gh.856. PMID: 33299773; PMCID: PMC7716784.
- 4 Nikpour Hernandez N, Ismail S, Heang H, van Pelt M, Witham MD, Davies JI. An innovative model for management of cardiovascular disease risk factors in the low resource setting of Cambodia. *Health Policy Plan*. 2021 May 17;36(4):397-406. doi: 10.1093/heapol/czaa176. PMID: 33367513; PMCID: PMC8128014.
- 5 Kaur P, Kunwar A, Sharma M, Mitra J, Das C, Swasticharan L, et al. India Hypertension Control Initiative-Hypertension treatment and blood pressure control in a cohort in 24 sentinel site clinics. *J Clin Hypertens (Greenwich)*. 2021 Apr;23(4):720-729. doi: 10.1111/jch.14141. Epub 2020 Dec 23. PMID: 33369074; PMCID: PMC8678731.
- 6 Mbau L, Harrison R, Kizito W, et al. Case identification, retention and blood pressure control in Kenya. *Public Health Action*. 2022 Jun;12(2):58-63. DOI: 10.5588/pha.21.0051. PMID: 35734002; PMCID: PMC9176190.
- 7 Ye J, Orji IA, Baldrige AS, Ojo TM, Shedul G, et al. Hypertension Treatment in Nigeria Program Investigators. Characteristics and Patterns of Retention in Hypertension Care in Primary Care Settings From the Hypertension Treatment in Nigeria Program. *JAMA Netw Open*. 2022 Sep 1;5(9):e2230025. doi: 10.1001/jamanetworkopen.2022.30025. PMID: 36066896; PMCID: PMC9449788..
- 8 Guy R, Hocking J, Wand H, Stott S, Ali H, Kaldor J. How effective are short message service reminders at increasing clinic attendance? A meta-analysis and systematic review. Vol. 47, *Health Services Research*. 2012. p. 614–32.
- 9 Hamilton W, Round A, Sharp D. Patient, hospital, and general practitioner characteristics associated with non-attendance: a cohort study. *Br J Gen Pract*. 2002 Apr;52(477):317-9. PMID: 11942451; PMCID: PMC1314275.



Appendix 1. Evidence for overdue patient tracking methods

| Citation | Bottom Line |
|---|--|
| The need for overdue patient tracking | |
| <p>1. Kaur P, Kunwar A, Sharma M, et al. India Hypertension Control Initiative-Hypertension treatment and blood pressure control in a cohort in 24 sentinel site clinics. J Clin Hypertens (Greenwich). 2021 Apr;23(4):720-729.</p> | <p>This study demonstrates that a scalable public health hypertension control program can yield substantial improvements in BP control, especially in primary care settings. However, high loss to follow-up limits population health impact; future efforts should focus on improving systems to increase the likelihood that patients will return to the clinic for routine hypertension care.</p> |
| <p>2. Mbau LK, Harisson R, Kizito W, Timire C, Namusonge T, Muhula S, et al. Case identification, retention and blood pressure control: lessons from a large-scale hypertension programme in Kenya. Preprint. 2019.</p> | <p>Retention in care was poor (12%), especially among younger patients and those enrolled at higher-level facilities. However, nearly half of the patients retained in care attained blood pressure control by one year. Hypertension programs should target high-risk populations, decentralize care and include retention and follow-up strategies.</p> |
| <p>3. Ye J, Orji IA, Baldrige AS, Ojo TM, Shedul G, Ugwunjeji EN, et al. Characteristics and patterns of retention in hypertension care in primary care settings from the hypertension treatment in Nigeria program. JAMA Netw Open. 2022.</p> | <p>The findings suggest that retention in hypertension care is suboptimal in primary health care centers in Nigeria. Factors associated with retention were identified and may inform implementation strategies to improve retention.</p> |
| Phone call reminders | |
| <p>1. Parikh A, Gupta K, Wilson AC, et al. The effectiveness of outpatient appointment reminder systems in reducing no-show rates. Am J Med. 2010 Jun;123(6):542-8..</p> | <p>Reminder phone calls from live clinic staff are more effective than outpatient automated reminder systems in reducing no-show rates.</p> |
| <p>2. Kannure M, Hegde A, Khungar-Pathni A, et al. Phone calls for improving blood pressure control among hypertensive patients attending private medical practitioners in India: Findings from Mumbai hypertension project. J Clin Hypertens. 2021;23:730-737.</p> | <p>Participation in a telephone call intervention can improve patient retention in care and, subsequently, blood pressure control among hypertensive patients attending urban private sector clinics in India.</p> |
| Text message reminders | |
| <p>1. Jubayer, S., Akhtar, J., Abrar, A.K. et al. Text messaging to improve retention in hypertension care in Bangladesh. J Hum Hypertens (2024).</p> | <p>Text message reminders are an effective strategy for improving retention of patients in hypertension treatment in LMICs, especially for patients overdue to care.</p> |
| <p>2. Leong KC, Chen WS, Leong KW, et al. The use of text messaging to improve attendance in primary care: A randomized controlled trial. Family Practice. 2006 Dec 1;23(6):699-705.</p> | <p>An SMS reminder system was effective in improving attendance rate in primary care clinics in Malaysia. It was more cost-effective than mobile phone reminders.</p> |



| | |
|--|--|
| <p>3. Guy R, Hocking J, Wand H, et al. How effective are short message service reminders at increasing clinic attendance? A meta-analysis and systematic review. Vol. 47, Health Services Research. 2012. p. 614–32.</p> | <p>SMS reminders in health care settings substantially increase the likelihood of attending clinic appointments. SMS reminders seem to be a simple and efficient option for health services to improve service delivery and result in health benefits for the patients who receive them.</p> |
| <p>4. Chen ZW, Fang LZ, Chen LY, Dai HL. Comparison of an SMS text messaging and phone reminder to improve attendance at a health promotion center: a randomized controlled trial. J Zhejiang Univ Sci B. 2008 Jan;9(1):34-8. doi: 10.1631/jzus. B071464. PMID: 18196610; PMCID: PMC2170466.</p> | <p>SMS and telephone calls are effective reminder methods for improving attendance rates at a health promotion center. SMS reminders may be more cost-effective than telephone reminders.</p> |
| <p>Home visits</p> | |
| <p>1. McMahon JH, Elliott JH, Hong SY, et al. Effects of physical tracing on estimates of loss to follow-up, mortality and retention in low and middle income country antiretroviral therapy programs: a systematic review. PLoS One. 2013;8(2):e56047.</p> | <p>Physical tracing may lead to increased re-engagement of patients in care.</p> |
| <p>2. Law S, Daftary A, O'Donnell M, et al. Interventions to improve retention-in-care and treatment adherence among patients with drug-resistant tuberculosis: a systematic review. European Respiratory Journal Jan 2019, 53 (1) 1801030.</p> | <p>Individual counselling support and home visits by health workers, provided throughout treatment, were associated with fewer losses to follow-up than when they were provided only at the start of treatment, or not at all.</p> |



Appendix 2. Overdue patient line list for digital and non-digital systems

Consider the following information when using and adapting the line list below:

- This template provides a list of all patients with hypertension overdue for a health visit who meet overdue criteria
- Print weekly
- If this form will be used for home visits, modify in the following ways:
 - Limit the list to only the patients who require a home visit
 - Outreach worker should confirm patient phone number and update sheet with any new information at every visit
 - Organize the list by village or region specific to each outreach worker

Print out done by: [responsible health worker’s name]

Date:

| HYPERTENSION CARE & TREATMENT OVERDUE PATIENT LINE LIST (To be used by the tracking team for all phone/home visit tracking) | | | | | | | | | | | | | | |
|--|-----|-----|--------------|---------|---------|-----------------|----------------------------|--------------|-------------------|--|--|---|---|---|
| Enter patient tracking information | | | | | | | | | | | | | | |
| Patient tracking information | | | | | | Patient status | | | | Overdue Phone Tracking Attempt information | | | | |
| | | | | | | | | | | Outreach Status | Outreach Outcome | Reason for missing scheduled visit | Next step | |
| Patient Name | Sex | Age | Phone number | Address | Village | Last visit date | Scheduled appointment date | Days overdue | Registration date | Last BP measure | #Call pending #Unreachable by phone, home visits pending #Unreachable at home #Reached by cal/SMS/home -visit #Opted out | #Agreed to a visit #No answer #Wrong phone number #Already visited #Moved to another location #Permanently transferred to another facility #Opted out of reminder calls #Opted out of follow-up or care #Died | #Distance #Asymptomatic #Side effects #Too expensive #Relocated #Visited other facility (public/private) #Too sick #Died #Don't trust facility/poor service #Meds not available/perceived poor drug quality #Natural treatment/local healers #No one to accompany patient to visit #Have sufficient medication #Other reason - specify | #Remove from overdue list (if already visited, transferred out, moved or died) #Declined to visit (if opted out of reminder or follow up/care) #Follow up again on date |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Outreach by: [responsible health worker’s name]



Appendix 3. Prioritization guide

- Assess overarching infrastructure and capacity to decide which tracking method(s) to implement.
- If your facility has the capacity to call all patients on the overdue list, then all patients should be called. However, if capacity is limited, see below for guidance on how to prioritize.

| METHOD | WHO TO TRACK | PROS | CONS | WHO TO PRIORITIZE |
|---|---|---|---|---|
| Tracking via phone call | Patients with a registered, valid telephone number | <ul style="list-style-type: none"> • Effective for getting patients to return to care • Can be more effective in reducing non-attendance than text message reminders | <ul style="list-style-type: none"> • Requires capacity for staff to make phone calls • Can be considered intrusive • Patients may ignore masked/unknown phone numbers • May require purchasing of equipment if calls from personal phones are acceptable to the staff | <ul style="list-style-type: none"> • Patients with higher BP (eg SBP >160) at last visit • Patients who are >14 days but <6 months overdue (to provide time for patients who would return without a call to return, and to not focus efforts on patients who are very overdue and a single call may not be effective) • Patients at facilities with adequate drug stock • Patients who are pending to call • Patients who agreed to return during a prior call but have not yet returned. |
| Tracking via text messaging: | Patients with a registered valid telephone number | <ul style="list-style-type: none"> • Effective for getting patients to return to care • Good for high-volume • Quick delivery • Minimal intrusion • Bulk messaging allows large numbers of messages to be delivered simultaneously and automatically at low cost with minimal labor. | <ul style="list-style-type: none"> • Requires technology and funding • Patients may ignore or consider message spam • May not be a sufficient intervention for patients more distantly overdue (e.g. over 90 days) | |
| Tracking in-person via home visits | Overdue patients with no phone number, not responding to multiple calls and unreachable with phone number in patient record | <ul style="list-style-type: none"> • Only way to reach patients without a valid phone number • May result in higher return visit than phone call or SMS • Provides opportunity for integration with other health conditions | <ul style="list-style-type: none"> • Intrusive • Not good for high volume of patients as it requires lots of time from health workers • Requires documentation of complete address in patient's record, which is often missing | <ul style="list-style-type: none"> • Patients who the health worker can't reach via telephone call or SMS system • Patients that have been overdue for a long period of time (e.g. 12-month LTFU patients) |

