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|  | **Supplemental Table 1: Standards for Reporting Qualitative Research (SRQR)\*** |  |
|  |  |  |
| **Title and abstract** | | **Page/line no(s).** |
|  | **Title** - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended | Page 1 |
|  | **Abstract** - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions | Page 2 |
|  |  |  |
| **Introduction** | |  |
|  | **Problem formulation** - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement | Pages 4–5 |
|  | **Purpose or research questio**n - Purpose of the study and specific objectives or questions | Pages 4–5 |
|  |  |  |
| **Methods** | |  |
|  | **Qualitative approach and research paradigm** - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale\*\* | Page 5 |
|  | **Researcher characteristics and reflexivity** - Researchers’ characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers’ characteristics and the research questions, approach, methods, results, and/or transferability | Pages 9–10 |
|  | **Context** - Setting/site and salient contextual factors; rationale\*\* | Pages 6–7 |
|  | **Sampling strategy** - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale\*\* | Pages 6–7 |
|  | **Ethical issues pertaining to human subjects** - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues | Page 16 |
|  | **Data collection methods** - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale\*\* | Pages 7–8 |
|  | **Data collection instruments and technologies** - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study | Pages 7–8 |
|  | **Units of study** - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results) | Pages 10–11 |
|  | **Data processing** - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts | Pages 9–10 |
|  | **Data analysis** - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale\*\* | Pages 9–10 |
|  | **Techniques to enhance trustworthiness** - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale\*\* | Pages 9–10 |
|  |  |  |
| **Results/findings** | |  |
|  | **Synthesis and interpretation** - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory | Pages 11–12 |
|  | **Links to empirical data** - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings | Supplemental Tables 3–5 |
|  |  |  |
| **Discussion** | |  |
|  | **Integration with prior work, implications, transferability, and contribution(s) to the field -** Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field | Pages 12–14 |
|  | **Limitations** - Trustworthiness and limitations of findings | Pages 14–15 |
|  |  |  |
| **Other** | |  |
|  | **Conflicts of interest** - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed | Page 16 |
|  | **Funding** - Sources of funding and other support; role of funders in data collection, interpretation, and reporting | Page 16 |
|  |  |  |
|  | \*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research. |  |
|  |  |  |
|  | \*\*The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together. |  |
|  |  |  |
|  | **Reference:** |  |
|  | O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014  DOI: 10.1097/ACM.0000000000000388 |  |
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**Supplemental Table 2: Interview Guides**

**Meeting 1: Identification of barriers and facilitators Adults with Hypertension and Community and CSO Leaders**

**[A] Adults with hypertension, community leaders and CSO representatives**

Thank you so much for your time today. The purpose of this group discussion is to gain insights on patient-level barriers and strategies to improve blood pressure and cardiovascular health in your community. The information you provide will help the study team understand feasible approaches to integrating best practices for finding and treating high blood pressure in Ghana.

1. **What are the challenges and strengths for hypertension diagnosis in your community?**
   * + - * What makes it difficult for people to get diagnosed for hypertension in your community? *(Prompts: knowledge about risk, causes, beliefs).*
       - What helps people get early diagnosis for hypertension in your community?
2. **What are the challenges and strengths for hypertension treatment in your community?**
   * What makes it difficult for people to manage their hypertension in your community?
   * What are things that help people manage their hypertension well?
3. **What are the challenges and strengths for hypertension control in your community?**
   * What makes it difficult people to control their hypertension in your community?
   * What are the things that help people control their hypertension?

**[B] Healthcare Professionals**

1. **How would you describe your patient population?**

* *Prompts: What about in terms of hypertension, blood pressure, and cardiovascular health?*

1. **Who in the community is more prone to have hypertension/high blood pressure?**

* *Prompts: Men or women? Young or old?*

1. **What are the barriers and opportunities for improving hypertension diagnosis in your patient population/community?**
   * + - What makes it difficult to diagnosis hypertension in your patient population?
       - What helps you to diagnosis hypertension in your patients?
2. **What are the barriers and opportunities for improving hypertension treatment in your patient population?**
   * What makes it difficult to treat hypertension in your patient population?
   * What are things that help you to treat hypertension?
3. **What are the barriers and opportunities for improving hypertension control in your patient population?**
   * What makes it difficult to control hypertension in your patient population?
   * What are ways to improve blood pressure control in your patient population – that is, how can we get more people with hypertension in the community to be effectively managed?
4. **The Kaiser bundle**, which comprised a bundle of five interventions has been shown to be one of the most effective interventions for hypertension control. The Kaiser bundle includes 5 components: *1) Creating and maintaining a registry of patients with hypertension; 2) Developing and distributing BP control reports (generated at least quarterly for clinical center directors); 3) Developing and distributing an evidence-based practice guideline for BP control; 4) Medical assistant follow-up visits for BP measurement and management (under physician supervision); 5) Promoting single pill combination therapy.*

**What do you think about the Kaiser Bundle?** (*Moderator to probe for each of the components)*

*Prompts:* (*Beliefs about consequences)*

* + *How will the Kaiser Bundle change patient outcomes? Any benefits to patients?*
  + *How will the Kaiser Bundle benefit your practice? -following guidelines, achieve better BP, etc.*

1. **Do you have any reservations about the Kaiser Bundle?**

*Prompts:*

* *ineffective,*
* *patients do not know how to check BP,*
* *no way to follow up BP in between clinic visits,*
* *providers do not have time/limited staff,*
* *lack of protocols for managing home BP*

1. **What would make it difficult to implement the Kaiser Bundle in your clinic?** *(Prompts: cost, time taken away from other tasks, etc)*
   * + - * Which components of the Kaiser bundle would be most difficult to implement?
2. **What do you see as the pros and cons of implementing the Kaiser bundle in your clinic?**

**[C] Policymakers**

General Policy Landscape on Hypertension

1. **What policies are in place in ensuring access to hypertension screening in Ghana?** *Prompts: insurance coverage, preventive care, etc*.
   * In your opinion, have the policies aimed at addressing hypertension screening been successful?
   * If so, what factors contributed to their success?
   * If not, what do you believe are the reasons for their lack of success?
2. **What policies are in place to address hypertension treatment and control in Ghana?**

*Prompts: insurance coverage, promotion of lifestyle programs, reduced cost of medications, etc*.

* In your opinion, have these policies been successful?
* If so, what factors contributed to their success?
* If not, what do you believe are the reasons for their lack of success?

Kaiser Bundle, Health Coaching and Home BP Monitoring

1. **The Kaiser bundle**, which comprised a bundle of five interventions has been shown to be one of the most effective interventions for hypertension control. The Kaiser bundle includes 5 components: *1) Creating and maintaining a registry of patients with hypertension; 2) Developing and distributing BP control reports (generated at least quarterly for clinical center directors); 3) Developing and distributing an evidence-based practice guideline for BP control; 4) Medical assistant follow-up visits for BP measurement and management (under physician supervision); 5) Promoting single pill combination therapy.*

**What do you think about the Kaiser Bundle?** (*Moderator to probe for each of the components*)

* *Creating and maintaining a registry of patients with hypertension.*
* *Developing and distributing BP control reports (generated at least quarterly for clinical center directors).*
* *Developing and distributing an evidence-based practice guideline for BP control.*
* *Medical assistant follow-up visits for BP measurement and management (under physician supervision).*
* *Promoting single pill combination therapy.*
  + What would make it difficult to integrate the Kaiser bundle into hypertension treatment policies at primary health care facilities in Ghana?

*(Prompts: cost, time taken away from other tasks, etc)*

* + How do current policies play into implementing the Kaiser bundle in primary healthcare settings in Ghana?
  + What policy changes would be needed to implement the Kaiser bundle?

**Meeting 2: Understanding context and generating implementation strategies**

Thank you so much for your time today. We have gained invaluable insights from our previous discussions on hypertension diagnosis, treatment, and control, health coaching and home blood pressure monitoring. Specifically, we've learned a great deal about the challenges and strengths that both you and the broader community experience in these areas. These determinants have been organized by row for clarity. In today's meeting, our goal is to delve deeper into potential strategies that could help overcome some of these challenges. We've already identified a few strategies based on our earlier conversations, and we encourage you to use these as a starting point. However, we also welcome your input on how these strategies might be improved, as well as any additional strategies that you believe are necessary. It's important to remember that multiple determinants may be addressed by multiple strategies, and a single strategy might address several determinants. We're eager to hear your thoughts on how best to approach these challenges.

**[A] Adults with hypertension, community leaders and CSO representatives**

**Policymakers**

1. **From our last meeting, we learned that [DETERMINANT #1] may be a [challenge/strength] to hypertension diagnosis. What do you think might be a strategy that could be used to [overcome this challenge/leverage this strength]?**

*(Continue through all determinants as needed)*

1. **From our last meeting, we learned that [DETERMINANT #1] may be a [challenge/strength] to hypertension treatment. What do you think might be a strategy that could be used to [overcome this challenge/leverage this strength]?**

*(Continue through all determinants as needed)*

1. **From our last meeting, we learned that [DETERMINANT #1] may be a [challenge/strength] to hypertension control. What do you think might be a strategy that could be used to [overcome this challenge/leverage this strength]?**

*(Continue through all determinants as needed)*

1. **From our last meeting, we learned that [DETERMINANT #1] may be a [challenge/strength] to health coaching. What do you think might be a strategy that could be used to [overcome this challenge/leverage this strength]?**

*(Continue through all determinants as needed)*

1. **From our last meeting, we learned that [DETERMINANT #1] may be a [challenge/strength] to home blood pressure monitoring. What do you think might be a strategy that could be used to [overcome this challenge/leverage this strength]?**

*(Continue through all determinants as needed)*

.

**[B] Healthcare Professionals**

1. **What are your current workflows for hypertension diagnosis, management, and control?**

**Prompts:**

* + - * + **BP assessment/evaluation:**

How do you get patient’s BP measurements?

What do you do with the measurements – any calculations, etc?

* + - * + **BP discussion with the patient”**

How do those discussions go?

When are you particularly concerned?

What are positive signs in these discussions?

* + - * + **BP treatment:**

What treatments do you offer to patients? (meds, behavioral/lifestyle change, BP monitoring)?

How do you decide who gets which treatments?

Who is involved in the treatments? (CHWs, nurses, family members, etc).

* + - * **BP control:**
        + What do you do to ensure that patient’s BP is controlled?
  + **Referral process:** 
    - * + What is the referral process like for someone living with hypertension in your facility?
  + What type of hypertensive patients do you refer?
  + Which hospitals/centers do you refer them to?
  + What changes would you like to see with the current referral process in your care facility?

1. **How often do you diagnose new hypertension cases?** 
   * + How many/what proportion of your patients know they have hypertension?
     + Do patients with hypertension know how to treat it effectively?
   * What changes would you like to see to improve the workflow process for hypertension diagnosis, management, and control?
2. **What types of tools and resources do you have available for your patients to support hypertension prevention?** (*Prompts****:*** *dietary counseling, regular checkups, etc.)*
   * What types of tools and resources do you have available for your patients to support hypertension management? (Prompts: patient registries or population health tools).
3. **What types of tools and resources do you have available for your care teams to support hypertension prevention**? *(Prompts: regular checkups and monitoring, patient education, personalized care approach).*
   * What types of tools and resources do you have available for your care teams to support hypertension management? (*Prompts:* performance feedback reports, *hypertension treatment guideline, use of non-physician to prescribe, adjust and intensify medication regimens based on physician orders)*
4. **How can we integrate the Kaiser Bundle into your current clinic workflow?**

*Prompts:*

* + - *Creating and maintaining a registry of patients with hypertension*
    - *Automated (monthly/quarterly) quality and performance feedback reports on hypertension treatment and control- real-time registry dashboard for patient follow-up*
    - *Simplified treatment guideline and national hypertension consensus protocol, use of fixed-dose combinations as first line of treatment.*
    - *Ensuring a reliable, uninterrupted supply of quality blood pressure lowering medicines.*
    - *Empowerment and enablement of CHWs as first line for hypertension diagnosis, treatment, and control.*

**Meeting 3: Determinants-Strategies Linkages Meeting**

In Meetings 1 and 2, we have learned about the strategies we could use to overcome the determinants of hypertension screening, treatment, and control, as well as health coaching and home blood pressure monitoring. Today, we’d like to refine the identified determinants and strategies to make them more conceptually and practically useful. For each strategy, we will like you to confirm the determinants that are addressed by that strategy.

1. **From our past meetings, we learned that [STRATEGY #1] is a strategy to improve hypertension screening. Some challenges that you mentioned for this strategy include [CHALLENGE 1, 2, 3…].** 
   * *Is this accurate?*
   * *Are any determinants (challenges/strengths) or strategies missing from this list?*

*[Continue through all determinants/strategies as needed.]*

1. **From our past meetings, we learned that [STRATEGY #1] is a strategy to improve hypertension treatment. Some challenges that you mentioned for this strategy include [CHALLENGE 1, 2, 3…].**
   * *Is this accurate?*
   * *Are any determinants (challenges/strengths or strategies missing from this list?*

*[Continue through all determinants/strategies as needed.]*

1. **From our past meetings, we learned that [STRATEGY #1] is a strategy to improve hypertension control. Some challenges that you mentioned for this strategy include [CHALLENGE 1, 2, 3…].**
   * *Is this accurate?*
   * *Are any determinants (challenges/strengths) or strategies missing from this list?*

*[Continue through all determinants/strategies as needed.]*

1. **From our past meetings, we learned that [STRATEGY #1] is a strategy to improve health coaching. Some challenges that you mentioned for this strategy include [CHALLENGE 1, 2, 3…].**
   * *Is this accurate?*
   * *Are any determinants (challenges/strengths or strategies missing from this list?*

*[Continue through all determinants/strategies as needed.]*

1. **From our past meetings, we learned that [STRATEGY #1] is a strategy to improve home blood pressure monitoring. Some challenges that you mentioned for this strategy include [CHALLENGE 1, 2, 3…].**
   * *Is this accurate?*
   * *Are any determinants (challenges/strengths) or strategies missing from this list?*

*[Continue through all determinants/strategies as needed.]*

**Meeting 4 (Combined Group): Strategies Identification and Operationalization Meeting**

Last time we met in our individual groups, we learned a lot about the strategies we could use to overcome some of the barriers to hypertension diagnosis/screening, treatment, and control, as well as implementing the Kaiser bundle, health coaching and home blood pressure monitoring. Today, we’d like to define more of the details about how those strategies will work in the real world.We will also rate all the barriers and opportunities for improving hypertension care cascade that were identified in Meetings 1-3. We will ask you to rank-order the specified strategies to provide a measure of strategy prioritization. For each strategy, we will ask you to select the determinants that are addressed by that strategy.

1. **From our past meetings, we learned that [STRATEGY #1] is a strategy to facilitate hypertension diagnosis/screening. Some barriers that you mentioned for this strategy could address include [BARRIER 1, 2, 3…]. We’d like to thoroughly define this strategy.**
   1. Who is responsible for doing this strategy?
   2. What will they be doing?
   3. When will this strategy be used?
   4. What is the frequency of use and time involved in each use of this strategy?
   5. What equity considerations are there for this strategy? Would this differ by populations?
   6. What other considerations are there for using this strategy?
   7. What will be required to maintain these strategies long-term?
   8. What (implementation) outcomes will this strategy address? (e.g. reach, effectiveness, adoption, acceptability, fidelity, cost, sustainability)

*[Continue through all strategies as needed.]*

1. **From our past meetings, we learned that [STRATEGY #1] is a strategy to facilitate hypertension treatment. Some barriers that you mentioned for this strategy could address include [BARRIER 1, 2, 3…]. We’d like to thoroughly define this strategy.**
   1. Who is responsible for doing this strategy?
   2. What will they be doing?
   3. When will this strategy be used?
   4. What is the frequency of use and time involved in each use of this strategy?
   5. What equity considerations are there for this strategy? Would this differ by populations?
   6. What other considerations are there for using this strategy?
   7. What will be required to maintain these strategies long-term?
   8. What (implementation) outcomes will this strategy address? (e.g. reach, effectiveness, adoption, acceptability, fidelity, cost, sustainability)
2. **From our past meetings, we learned that [STRATEGY #1] is a strategy to facilitate hypertension control. Some barriers that you mentioned for this strategy could address include [BARRIER 1, 2, 3…]. We’d like to thoroughly define this strategy.**
   1. Who is responsible for doing this strategy?
   2. What will they be doing?
   3. When will this strategy be used?
   4. What is the frequency of use and time involved in each use of this strategy?
   5. What equity considerations are there for this strategy? Would this differ by populations?
   6. What other considerations are there for using this strategy?
   7. What will be required to maintain these strategies long-term?
   8. What (implementation) outcomes will this strategy address? (e.g. reach, effectiveness, adoption, acceptability, fidelity, cost, sustainability)
3. **From our past meetings, we learned that [STRATEGY #1] is a strategy to facilitate implementation of the Kaiser bundle. Some barriers that you mentioned for this strategy could address include [BARRIER 1, 2, 3…]. We’d like to thoroughly define this strategy.**
   1. Who is responsible for doing this strategy?
   2. What will they be doing?
   3. When will this strategy be used?
   4. What is the frequency of use and time involved in each use of this strategy?
   5. What equity considerations are there for this strategy? Would this differ by populations?
   6. What other considerations are there for using this strategy?
   7. What will be required to maintain these strategies long-term?
   8. What (implementation) outcomes will this strategy address? (e.g. reach, effectiveness, adoption, acceptability, fidelity, cost, sustainability)
4. **From our past meetings, we learned that [STRATEGY #1] is a strategy to facilitate health coaching. Some barriers that you mentioned for this strategy could address include [BARRIER 1, 2, 3…]. We’d like to thoroughly define this strategy.**
   1. Who is responsible for doing this strategy?
   2. What will they be doing?
   3. When will this strategy be used?
   4. What is the frequency of use and time involved in each use of this strategy?
   5. What equity considerations are there for this strategy? Would this differ by populations?
   6. What other considerations are there for using this strategy?
   7. What will be required to maintain these strategies long-term?
   8. What (implementation) outcomes will this strategy address? (e.g. reach, effectiveness, adoption, acceptability, fidelity, cost, sustainability)
5. **From our past meetings, we learned that [STRATEGY #1] is a strategy to facilitate home blood pressure monitoring. Some barriers that you mentioned for this strategy could address include [BARRIER 1, 2, 3…]. We’d like to thoroughly define this strategy.**
   1. Who is responsible for doing this strategy?
   2. What will they be doing?
   3. When will this strategy be used?
   4. What is the frequency of use and time involved in each use of this strategy?
   5. What equity considerations are there for this strategy? Would this differ by populations?
   6. What other considerations are there for using this strategy?
   7. What will be required to maintain these strategies long-term?
   8. What (implementation) outcomes will this strategy address? (e.g. reach, effectiveness, adoption, acceptability, fidelity, cost, sustainability).

**Rating of Determinants and Strategies**

**Determinants**

On a scale of -2 (strong barrier) to +2 (strong facilitator), please rate the following barriers and facilitators for improving hypertension care cascade.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Determinants**  **(CFIR Domains)** | **Strong barrier**  **(-2)** | **Weak barrier**  **(-1)** | **Weak facilitator**  **(+1)** | **Strong facilitator**  **(+2)** |
| Innovation |  |  |  |  |
| Outer setting |  |  |  |  |
| Inner setting |  |  |  |  |
| Individuals |  |  |  |  |
| Implementation process |  |  |  |  |

**Strategies**

Please rate the feasibility, effectiveness, and priority of each strategy on a Likert scale from 1 (not feasible/effective) to 4 (very feasible/effective).

|  |  |  |  |
| --- | --- | --- | --- |
| **Strategy (ERIC Domains)** | **Feasibility** | **Effectiveness** | **Prioritization** |
| Use of evaluative and iterative strategies |  |  |  |
| Provide interactive assistance |  |  |  |
| Adapt and tailor to context |  |  |  |
| Develop stakeholder interrelationships |  |  |  |
| Train and educate stakeholders |  |  |  |
| Support clinicians |  |  |  |
| Engage consumers |  |  |  |
| Utilize financial strategies |  |  |  |
| Change infrastructure |  |  |  |

**Meeting 5: Final meeting and review of Implementation Research Logic Model draft**

We are so grateful for all of the valuable input you've provided up thus far. Your insights have been instrumental in shaping our understanding and approach on how to improve hypertension diagnosis, treatment and control in your patient population. To recap, we've been working together to identify key determinants that impact hypertension diagnosis, treatment, and control within the community and how to implement health coaching and home blood pressure monitoring. Through our discussions, we've gathered crucial information on both the challenges and strengths that you and others face. This information has been essential in guiding our next steps.

**Overview of IRLM:**

The Implementation Research Logic Model (IRLM) is a tool designed to help us systematically plan, execute, and evaluate interventions. The purpose of the IRLM is to ensure that our strategies are grounded in real-world experiences and are tailored to effectively address the specific challenges we've identified. By using the IRLM, we can better align our efforts with the needs of the community, leading to more successful and sustainable outcomes.

Today, we would like to share with you a draft of the adapted hypertension intervention IRLM. This model has been customized based on the insights we've gathered from our discussions. We will focus particularly on the determinants we've identified, and the strategies proposed to address them. As we walk through this draft together, we encourage you to provide feedback on both the determinants and the strategies. We want to ensure that they accurately reflect the realities on the ground and are practical for implementation. Your expertise and experience are invaluable in refining these strategies to make them as effective as possible.

Thank you again for your ongoing collaboration. We're excited to continue working together to develop interventions that truly make a difference in your community.

1. **First, please share your initial thoughts on the IRLM. Does this presentation make sense? Do you see “you” (and the information you’ve provided during the workgroup meetings) in this model? What is still confusing/needs to be better explained?**
2. **More specifically,**
   1. do the determinants make sense? Is anything missing? Is there anything that we should eliminate or merge, now that it’s all put together?
   2. do the strategies make sense? Is anything missing? Is there anything that we should eliminate or merge, now that it’s all put together?
   3. do the linkages between the determinants and strategies make sense? Is anything missing? Is there anything that we should eliminate or merge, now that it’s all put together?
   4. What are the mechanisms of action for each of these strategies?

1. **We are hoping to use the procedures – i.e., the workgroup meetings and activities – as a model for other researchers to engage with community partners. Now that we are at the end of this process, do you have any reflections, feedback, criticism, or recommendations for us to consider?**

**Supplemental Table 4. Discrete strategy specifications identified by stakeholders across workgroup meetings**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Kaiser bundle components** | **Discrete strategy** | **Actor(s)** | **Action(s)** | **Temporality** | **Dosage** |
| **Hypertension registry** | Expand the CHPS compound and PHCs | \* Ministry of Health \* District Assembly Members \* Municipal directors \* Health of the Public Health Unit \* District Health Directorate | \* Secure land/space for CHPS compounds and screening events \* Mobilize funding and standardize training and equipment \* Coordinate logistics and agency partnerships for BP screening | \* Quarterly efforts to coordinate logistics | 1–6 hours (total); quarterly |
| Redistribute care responsibilities | \* District health management team \* Head of Primary Health Care facility \* District directors | \* Organize trainings for lower-level PHC staff \* Have nurses on duty at every consulting room \* Provide logistics, including digital monitors, to PHC facilities | \* Annually \* Daily \* Quarterly inventory taking | \* Half-day training annually \* 8-hour rotation for each nurse (daily) \* 2–3 sessions (quarterly) |
| Strengthen provider training programs | \* PHC facility head | \* Liaise with the in-service coordinator for consumer care training | \* Twice a year | 6 hours/day |
| Strengthen community-based blood pressure screening | \* Assembly member \* District public health nurses | \* Lead the charge in educating other faith leaders to provide the right education on BP screening to their members \* Coordinate nurses to do home visit screening | \*Biannually/Assemble man \* Monthly for PHNs | 6 hours/Assembly man \* 3-5 hours/PHNs |
| Integrate traditional healers into the formal health system | \* Traditional and alternative medicine organization (GHS) \* Ministry of Health \* District-level alternative medicine organization | \* Develop and enforce policy provisions that authorize physicians to prescribe alternative medicines as part of routine treatment options | \* Bi-annually | 2 hours |
| Provide routine blood pressure screening at the PHC | \* Community Health Nurses \* Public Health Nurses | \* Provide regular education on the importance of BP screening at various units with PHCs \* Liaise with RHD to get education materials | \* Twice a week | 45 minutes |
| Use telemedicine for remote care | \* Ghana Health Service \* Ministry of Health | \* Provide laptops/tablets to clinicians to provide care | \* Once a year | 2 hours |
| Support clinicians with staffing and training | \* DDHS- District Director of Health Services \* DDNS- Deputy Director of Nursing Services \* Medical Superintendent | \* Organize internal PHC staff reassignment of duties | \* Monthly | 2 hours |
| Fund provider recruitment and retention | \* Ministry of Health \* International organization partners (WHO, UNDP, WHF) | \* Ensure healthcare worker benefit packages are reviewed regularly | \* Quarterly | 2 hours |
| **Clinical performance feedback reports** | Enhance the BP control report via automation | \* GHS - Policy Planning, Monitoring & Evaluation Department (PPMED) \* Director General of Ghana Health Service | \* Strengthen infrastructure by equipping health facilities with health informatics systems to support data-driven care and decision-making. \* Conduct comprehensive training for all nurses and Health Information Officers (HIOs) to ensure accurate and timely entry of health records into the DHIMS platform | \* Every 6 months | 2 hours |
| Align feedback on BP report with clinic workflows | \* Clinical coordinator | \* Coordinate regular PHC staff meetings | \* Quarterly | 2 hours |
| Integrate BP feedback into leadership | \* Team heads \* PHC facility heads | \* Lead follow-up meetings and coordination efforts, ensuring timely dissemination of relevant information across all departments within the facility, including medical, nursing, and pharmacy units. | \* Quarterly | 3 hours |
| Review the BP report in clinic staff meetings | \* Health Information Officers | \* Collaborate with the in-service training team or unit heads to train health staff on data analysis and interpretation to support evidence-based decision-making. | \* Monthly | 2 hours |
| **Standardized evidence-based treatment protocols** | Strengthen protocol adherence via training | \* In-service training coordinator | \* Conduct training and refresher courses for all cadres of PHC staff | \* Every 6 months | 2 hours |
| Enhance adherence through audits, feedback, and supervision | \* District Health Director \* Med Superintendents  \* Facility heads | \* Establish and enforce a monthly audit process for tracking and reviewing newly diagnosed patients to ensure timely documentation and follow-up care. \* Engage the facility Quality Improvement (QI) officer to provide oversight and supervision of implementation activities to ensure adherence to standards and continuous improvement. | \* Monthly | 3 hours |
| Foster provider buy-in via champions | \* GHS - Policy Planning, Monitoring & Evaluation Department (PPMED)  \* Ministry of Health  \* Ghana Health Service  \* Medical Directors  \* Medical Superintendents  \* Deputy Director of Nursing Services | \* Stakeholder engagement to discuss the guidelines to encourage buy-in | \* Every year | 2 hours |
| Simplify clinical protocols using flowcharts | \* District Health Director | \* Convene healthcare providers to simplify protocols into their specific workflows \* Ongoing review and simplification of protocols | \* One time \* Quarterly | 2 hours |
| Advocate policy for essential hypertension drug coverage | \* National Health Insurance Agency \* Ghana Health Service \* Ministry of Health | \* Ensure inclusion of all essential medication in the National Health Insurance Scheme | \* Ongoing | Ongoing |
| Optimize clinic workflow through task-shifting | \* Clinical coordinators  \* Director of Nursing  \* Ward in-charges  \* Department heads | \* Develop protocols  \* Strengthen roster to ensure participation  \* Capacity building of staff to accept and implement the use of guidelines  \* Develop a roaster for task shifting | \* Monthly | Ongoing |
| Integrate hypertension care into existing chronic disease and referral systems | \* PHC facility in-charge \* Med Superintendent | \* Conduct targeted training for staff on appropriate patient referral pathways to ensure timely and effective continuity of care \* Establish routine monthly data reviews of wellness clinic records to monitor service delivery, identify gaps, and guide quality improvement efforts | \* Monthly | 1 hour |
| Standardize care with clear protocols | \* Ghana Health Service \* Ministry of Health | \* Establish standardized protocols for routine blood pressure (BP) measurement across relevant service delivery points. \* Develop and disseminate Information, Education, and Communication (IEC) materials to promote awareness and proper techniques for BP monitoring | \* Quarterly | 3 Hours |
| **Medical assistant-led BP follow-up visits under supervision** | Build CHN capacity through training | \* Ghana Health Service \* Ministry of Health | \* Conduct Continuous Professional Development (CPD) trainings to encourage participation  \* Conduct in-service training for CHNs | \* Bi-annually | 6 hours |
| Integrate CHN follow-ups in care | \* Community Health Nurses | \* Ensure accurate and consistent capturing of patient data during Child Welfare Clinics (CWCs) \* Streamline the timely entry of captured data into the health information system to support continuity of care and data-driven decision-making. | \* Daily | 8 hours |
| Streamline workflows by task shifting | \* Ghana Health Service | \* Assign Community Health Nurses (CHNs) to monitor a designated number of NCD cases within each CHPS zone to ensure consistent follow-up and support | \* Bi-weekly | 3 hours |
| Incentivize CHN role expansion | \* Ghana Health Service \* Ministry of Health | \* Establish clear performance standards to guide service delivery and accountability. \* Implement recognition and award schemes to motivate staff and reinforce high-quality performance | \* Quarterly | one day |
| Authorize CHN hypertension medication prescriptions | \* Ministry of Health | \* Develop and implement a standardized medical prescription protocol for CHNs to guide safe and effective prescribing practices. | \* Ongoing | Ongoing |
| **Promotion of single pill combination** | Strengthen supply chain coordination | \* Ministry of Health \* Ghana Health Service- PPMED \* Ghana Health Service- Supply department | \* Establish a centralized supply request system requiring all facilities to submit requests directly through the designated coordinating office \* Maintain and regularly update a facility request log to identify non-compliant facilities and conduct follow-up to understand and address barriers to compliance | \* Ongoing | One day |
| Expand NHIS coverage and incentivize providers | \* Ministry of Health \* National Health Insurance Authority \* Ghana Health Service | \* Develop a policy proposal to revise the premium payment structure under the National Health Insurance Scheme to enhance the affordability of single-pill combination medications | \* Once a year | 6 Hours |
| Promote safe combination therapy use | \* Ghana Health Service \* Ministry of Health | \* Establish a coordinated framework between the Ministry of Health and the Ghana Health Service supply divisions to jointly manage and streamline the distribution of essential medicines | \* Once | 3 Hours |

**Supplemental Table 5.** Kaiser Bundle Components × ERIC Domains × Discrete Strategies

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| **Kaiser bundle component** | **ERIC domain** | **Corresponding discrete strategies** |
| **Hypertension patient registries** | Change infrastructure | * Expand CHPS compound and PHCs * Redistribute care responsibilities * Strengthen community-based blood pressure screening * Provide routine blood pressure screening at the PHC * Use telemedicine for remote care |
| Train and educate stakeholders | * Strengthen provider training programs |
| Develop stakeholder interrelationships | * Integrate traditional healers into the formal health system |
| Support clinicians | * Support clinicians with staffing and training |
| Utilize financial strategies | * Fund provider recruitment and retention |
| **Clinical performance feedback reports** | Change infrastructure | * Enhance blood pressure control report via automation |
| Use evaluative and iterative strategies | * Align feedback with clinic workflows; Review BP report in clinic staff meetings |
| Develop stakeholder interrelationships | * Integrate BP feedback into leadership |
| **Standardized evidence-based treatment protocols** | Train and educate stakeholders | * Strengthen protocol adherence via training |
| Use evaluative and iterative strategies | * Enhance adherence through audits, feedback and supervision |
| Develop stakeholder interrelationships | * Foster providers’ buy-in via champions |
| Adapt and tailor to context | * Simplify clinical protocols using flowcharts |
| Change infrastructure | * Optimize clinic workflow through task-shifting; Integrate hypertension care into existing chronic disease and referral systems; Standardize care with clear protocols |
| Utilize financial strategies | * Advocate policy for essential hypertension drug coverage |
| **Medical assistant-led BP follow-up visits under supervision** | Train and educate stakeholders | * Build CHN capacity through training |
| Change infrastructure | * Integrate CHN follow-ups in care; Streamline workflows by task shifting; Authorize CHN hypertension medication prescriptions |
| Utilize financial strategies | * Incentivize CHN role expansion |
| **Promotion of single-pill combination therapy** | Change infrastructure | * Strengthen supply chain coordination |
| Utilize financial strategies | * Expand NHIS coverage and incentivize providers |
| Train and educate stakeholders | * Promote safe combination therapy use |

CHN– Community Health Nurses; CHPs– Community-Based Health Planning and Services; PHC– Primary Healthcare Centers; NHIS– National Health Insurance Scheme