


# Team-Based Qualitative Rapid Analysis: Approach and Considerations for Conducting Developmental Formative Evaluation for Intervention Design

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## Abstract

Qualitative rapid analysis is one of many rapid research approaches that offer a solution to the problem of time constrained health services evaluations and avoids sacrificing the richness of qualitative data that is needed for intervention design. We describe modifications to an established team-based, rapid analysis approach that we used to rapidly collect and analyze semi-structured interview data for a developmental formative evaluation of a cardiovascular disease prevention intervention. Over 18 weeks, we conducted and analyzed 35 semi-structured interviews that were conducted with patients and health care providers in the Veterans Health Administration to identify targets for adapting the intervention in preparation for a clinical trial. We identified 12 key themes describing actionable targets for intervention modification. We highlight important methodological decisions that allowed us to maintain rigor when using qualitative rapid analysis for intervention adaptation and we provide practical guidance on the resources needed to execute similar qualitative studies. We additionally reflect on the benefits and challenges of the described approach when working within a remote research team environment.

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## Keywords

formative evaluation, qualitative rapid analysis, team-based qualitative research, intervention adaptation, cardiovascular disease prevention

## Background

Qualitative methods are ideal for gathering rich information about health and health care experiences. Nevertheless, long-standing qualitative approaches for conducting and analyzing interview data require extensive time and resources, making them difficult to leverage in fast-paced health services evaluations (Abraham et al., 2021). As a result of these time and resource constraints, several rapid research approaches have been developed, with recent experimentation among researchers to adapt rapid qualitative and mixed methods approaches for use in implementation research and clinical trials (Palinkas & Zatzick, 2019). We use the term rapid research approaches to describe a range of qualitative and mixed method research approaches that share key characteristics, including rapid study timeframes, multidisciplinary team-based analysis, engagement with relevant

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stakeholders, use of multiple data sources, and iterative data collection and analysis (McNall & Foster-Fishman, 2007; Vindrola-Padros et al., 2021). In general, the rapid research approaches used in implementation research attempt to shorten the timeline for inquiry through a selection of processes to reduce time spent on data collection, data management, and/or data analysis (Vindrola-Padros & Johnson, 2020). Studies comparing outputs of qualitative rapid research approaches report considerable overlap in research findings when compared to results of more traditional qualitative methods (Gale et al., 2019; Greenwood et al., 2017; Taylor et al., 2018). Given their potential to reduce the time needed to conduct a study (and therefore reduce the research to practice gap) and to involve key stakeholders in evaluation design and execution, rapid qualitative research approaches are well suited to implementation research applications (QUALRIS Group, 2018), including in developmental formative evaluations (DFEs). In developmental formative evaluations, evaluation efforts occur pre-implementation and can aid researchers in understanding and responding to potential intervention problems prior to wide-spread initiation of the intervention at study sites (Elwy et al., 2020). The focus of inquiry is on understanding of current health care practices, the context that the intervention will operate in, potential barriers and facilitators to practice change, and the feasibility of implementing the intervention as initially designed (Stetler et al., 2006). A key feature of DFE is that it allows for timely modifications to the intervention or planned implementation strategies prior to intervention deployment. Koenig et al. (2016) provide an example of how a DFE using rapid qualitative analysis can identify targets for intervention tailoring and guide modifications to intervention study design. We used team-based qualitative rapid analysis in a multisite DFE to (1) identify key features of existing cardiovascular disease preventative care for Veterans Health Administration (VHA) patients with HIV and (2) to discriminate contextual factors at the patient, provider, and systems levels that were likely to affect implementation of an evidence-based cardiovascular disease preventative care intervention in the Veterans Health Administration. Our decision to use a team-based qualitative rapid analysis was based on an aggressive timeline required to support human-centered intervention design workshops as part of our VHA-funded parent study (IIR-19-418). In planning our DFE study procedures, we found limited guidance on which team-based rapid qualitative analysis techniques are best suited to DFEs, particularly when the purpose of inquiry is to adapt an evidence-based intervention to a new setting or population prior to study. Accordingly, there is a continued need to share DFE practices when using qualitative rapid analysis for this purpose. Understanding the methodological decisions made by

researchers using qualitative rapid analysis can contribute to the validity of the method (Luciani et al., 2021; Vindrola-Padros & Johnson, 2020) and lead to methodological refinements. The aim of this article is to provide an overview of key methodological decisions made during a team-based qualitative rapid analysis of cardiovascular disease preventative care for people with human immunodeficiency virus (HIV) in the VHA and to present our approaches for enhancing the trustworthiness of our findings as a multidisciplinary research team working in a virtual environment. We begin by providing an overview of our study design and methods. We then identify considerations when using this team-based approach, which are based on our lessons learned from this example.

### *Enhancing Cardiovascular Disease Prevention in Veterans With HIV*

Atherosclerotic cardiovascular disease is an important and growing cause of mortality in people living with HIV (D. Hanna et al., 2016). People living with HIV have up to twice the risk for atherosclerotic cardiovascular disease compared to people without HIV infection (Shah et al., 2018). Although HIV disease-specific factors play a contributory role, traditional risk factors (e.g., hypertension, elevated lipid levels, and smoking) account for most population level cardiovascular disease risk (Feinstein et al., 2019).

Veterans with HIV represent a vulnerable group that faces structural and economic barriers to optimal health care services (Peterson et al., 2018). Understanding and addressing their cardiovascular disease risk factors requires attention to both lifestyle factors and health systems barriers that perpetuate disparities in care delivery. Within the VHA, Veterans with HIV typically receive cardiovascular disease preventative care in the primary care setting. Primary care services may be provided by HIV primary care providers, by generalist primary care providers, or through shared care wherein a HIV subspecialist and a primary care provider collaboratively manage Veterans' primary care needs (Fix et al., 2014). Studies examining differences in cardiovascular disease preventative care in the VHA have not identified a superior care model (Bokhour et al., 2021). Yet, there is a demonstrated need for enhanced cardiovascular disease prevention efforts in people with HIV, particularly for Veterans from underrepresented racial and ethnic groups (Richardson et al., 2016).

The proposed intervention was designed to address the need for expanded cardiovascular disease preventative care among people living with HIV to improve management of hypertension and hypercholesterolemia—two highly prevalent cardiovascular disease risk factors

observed in people with HIV (Okeke et al., 2019). The intervention is organized around four core components: (1) provider use of evidence-based medication algorithms for treating hypertension and hypercholesterolemia; (2) care coordination; (3) home blood pressure monitoring; and (4) hypertension self-management support. This intervention approach was developed, and is currently being tested, in a non-VHA, civilian population. In the non-VHA model, a nurse housed within each participating study clinic delivers the intervention during in-person study visits and telephone “check-in” encounters that are scheduled based on participants’ ability to maintain blood pressure goals (Okeke et al., 2019). Because the nurses are in the study clinics, they communicate with providers through usual communication channels.

To address differences in the way primary care services are provided to people living with HIV in the VHA, the intervention was adapted a priori such that centralized nurse and pharmacist health coaches could deliver the intervention to Veterans using telehealth modalities and communicate with providers primarily through the VHA’s electronic health records system. Prior to trialing the adapted intervention in three VHA medical centers, the research team planned for a formal DFE using qualitative methods to identify additional targets for intervention modifications. Due to the aggressive timelines dictated by our funding and use of research staff who were geographically dispersed, we used a team-based rapid analysis approach.

### **Rapid Team-Based Qualitative Analysis for DFE: Summary of Methods**

Our qualitative rapid analysis approach combined elements from multiple rapid research methods (i.e., rapid evaluation and rapid assessment) (McNall & Foster-Fishman, 2007). Our design was descriptive in nature and was guided by constructs from the Information-Motivation-Behavioral Skills (IMB) model (Fisher & Fisher, 1992). The IMB model emphasizes the need for risk reduction interventions that are conceptually based and that target specific needs for information, motivation, and behavioral skills development (Fisher & Fisher, 1992). In this study, the IMB model concepts were adapted to the study of multilevel behavior change (Figure 1). The intervention aims to improve Veteran self-management and to reduce clinical inertia in cardiovascular disease prevention through delivery of intervention components to address knowledge, motivation, and behavioral skills gaps in Veterans and their primary care providers. Specific areas of inquiry included Veteran and health care providers usual cardiovascular disease risk reduction practices, including management of

hypertension and hyperlipidemia, and their perceptions of the core intervention components (Figure 1).

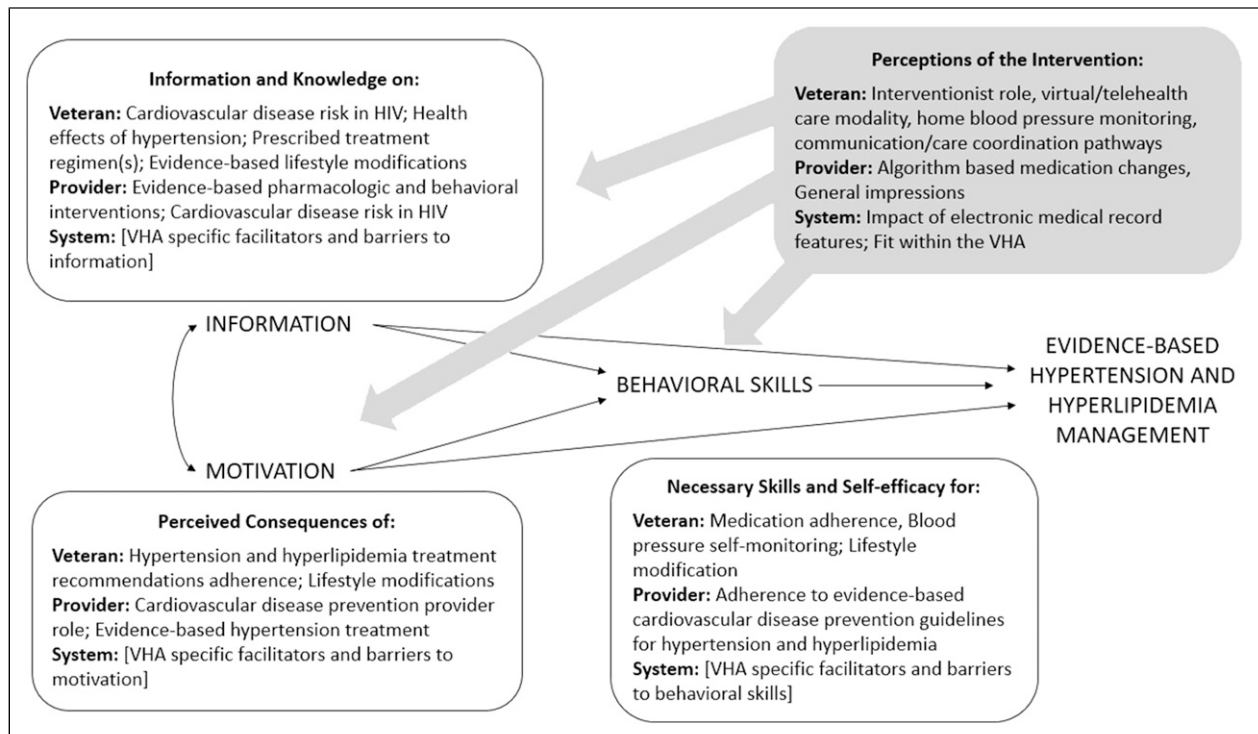
### **Sample and Participants**

Our study was approved by the Veterans Affairs (VA) Central Institutional Review Board for Multisite Studies (approval no. 20–26). A waiver of documentation of informed consent was obtained for this study. All participants provided verbal informed consent prior to study enrollment.

The study was conducted in three ambulatory HIV clinics in North Carolina, Maryland, and Ohio VHA facilities. We purposefully sampled health care providers from each study site who provided care to Veterans with HIV (Palinkas et al., 2015). We recruited a variety of professional roles, backgrounds, and levels of clinical experience, prioritizing health care providers that were identified by site investigators as integral to medication management or care coordination programs at their site. We used the electronic health record to identify Veteran patients with evidence of HIV viral suppression (i.e., evidence of well-controlled HIV) and hypertension at each of the three VHA sites. All participants completed verbal informed consent and demographic surveys prior to interview scheduling. Semi-structured interviews were completed with 17 health care providers and 18 patients. Health care providers included nine physicians, five nurse practitioners, a registered nurse, a pharmacist, and a health psychologist. Participating health care providers and patients were distributed equally across study sites.

### **Data Collection**

Data were collected from in-depth interviews completed between February 1, 2021, and April 6, 2021. Our seven-person rapid analysis qualitative team consisted of VHA research professionals from two of the three proposed trial sites. Interviews were conducted by an interview/notetaker dyad using a secure VHA approved version of Cisco Webex Meetings. Interviewers included an experienced, Master’s prepared qualitative analyst and a postdoctoral research fellow. Notetakers ranged in qualitative experience from none to highly experienced and included postdoctoral research fellows, research coordinators, qualitative analysts, and the lead qualitative investigator. Interviews followed semi-structured interview guides that were tailored to health care provider and patient experiences with hypertension management. We collaboratively developed the interview guides with HIV specialists and Veterans living with HIV who served on our study’s Veteran patient advisory panel. We prioritized interview questions that (1) addressed major concepts of IMB model and/or (2) were expected to elicit actionable



**Figure 1.** Adapted Information-Motivation-Behavioral Skills model and related interview topics.

feedback for intervention adaptation or clarify the intervention's compatibility with existing HIV care practices within the VHA setting. Guides included a presentation of the core features of the intervention, a discussion of the core intervention components, and discussion of the participant's hypertension care experiences (see [Appendix](#)).

Interviews were digitally audio-recorded with the participant's permission and downloaded into protected study files. Due to project time constraints, we did not submit the audio-recordings for transcription; rather, we relied on the native audio files as needed for later referencing. Instead, for each question in the interview guide, notetakers took real-time summary descriptions of participant responses using a templated form during the interview, consistent with previously described approaches for generating interview summaries from interview audio-recordings ([Neal et al., 2015](#)) or in real time during interviews ([Lewinski et al., 2021](#); [Nevedal et al., 2021](#)). Our interview summary templates included a notes section for each question in the interview guide, and mapped questions to theoretical concepts associated with our guiding conceptual model to facilitate entry into data matrices and subsequent analysis ([Gale et al., 2013](#); [Hamilton, 2013, 2020](#)).

We used a multistep process to support quality and credibility of the data captured in the interview summaries

([Patton, 1999](#)). First, the lead qualitative investigator and a postdoctoral fellow with advanced training in qualitative methods piloted the summary templates and provided examples of the completed forms to the qualitative rapid analysis study team. All study team members were asked to review the audio-recording and summary template examples as a training exercise. The summary template examples were intended to provide a range of acceptable detail and interpretation in notetaking. All team members were provided an opportunity to review the interview audio-recording and the example summary template forms. Questions regarding notetaking were addressed during group review and discussion of the completed study template examples. This exercise was sufficient to address the training needs of staff without prior interviewing or notetaking experience. Next, notetakers were encouraged to ask questions as needed to clarify participants' responses during the interviews. Additionally, notetakers conducted real-time member checking at the conclusion of each call. The member checking process included a review of major discussion points and an opportunity for participants to make corrections or additions to summary information gathered during the interview. Finally, as soon as possible after the interviews, the interviewer/notetaker dyads met to complete a structured debriefing. The debriefing was designed to lead the interview/notetaker dyad through a series of reflective

questions, with a goal of capturing their overall interview impressions and highlighting discussion points that may indicate a need for intervention adaptations. Results of the member checking and debriefing steps were also captured in the summary interview template and submitted for entry into data matrices once the interviewer and notetaker reached agreement on the final summary content. All data collection, member checking, and debriefing procedures were clearly outlined in a standard operating procedures (SOPs) document.

### Analysis Plan

Our analysis plan was based on a qualitative rapid analysis approach described by Hamilton (2013; 2020). In this approach, matrix or table-based analysis methods (Averill, 2002; Gale et al., 2019) are used to summarize major discussion points across the templated summaries of participant interviews. Figure 2 provides a high-level summary of our process. Weekly, our senior qualitative analyst reviewed the submitted interview summary forms and extracted their content into Microsoft Excel-based data matrices. Data entry by an experienced qualitative researcher allowed for interim quality checks to ensure completeness of summary forms and consistency in the level of detail provided by notetakers. We created separate matrices for health care provider and patient data. Matrices were organized such that each row represented a respondent, and columns represented a specific question from the interview guide, organized by associated IMB construct or core intervention component characteristic (e.g., medication algorithms, care coordination, and home blood pressure monitoring), respectively.

Weekly, two analysts independently reviewed any new matrix data, compared it against prior weeks' entries, and created a succinct narrative summary of the major discussion points in each column to date. The analysts presented their work to the seven-person qualitative research team in weekly Cisco Webex meetings. During these meetings, our team of analysts reviewed the weekly data matrix summary updates and discussed emerging patterns in the data. Weekly analysis meetings followed a structured analytic memo template. This memo included a section for tracking completion of interviews and data in the matrix, questions to prompt discussion of challenges in data collection or analysis, and questions to guide analytic discussions. These meetings facilitated rapid data reduction through discussion and resolution of data interpretation discrepancies and identification of differences in participant responses between the three study sites.

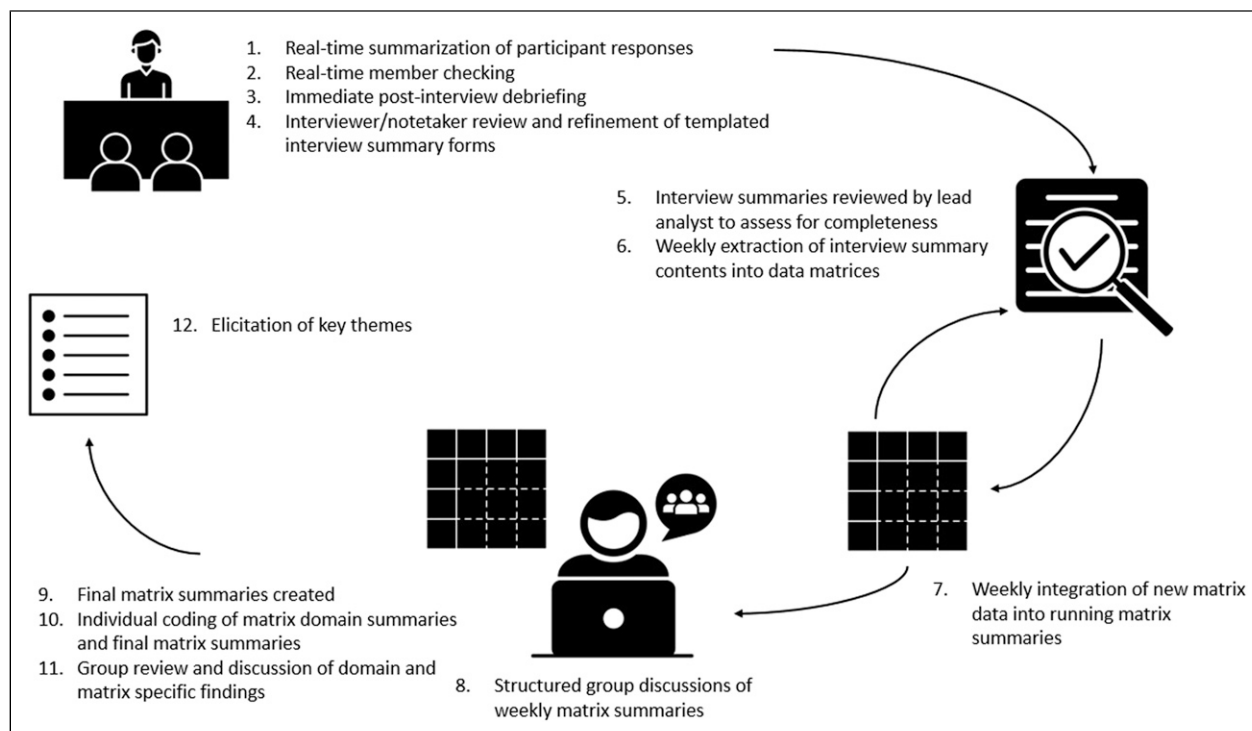
Once weekly matrix summarization was completed, three experienced analysts were assigned to create a final

matrix summary of patient and health care provider findings for each study site. The final matrix summaries maintained the same narrative structure as earlier summaries (i.e., succinct descriptions of all prior matrix summaries *by matrix domain*) but also included a final data reduction phase wherein key discussion points *across matrix domains* were summarized. This step aided in validating site differences that emerged in weekly group discussions and resulted in site characterizations of intervention acceptability and fit with current practices. Finally, members of the analysis team inductively coded each domain of the final matrix summary, guided by weekly analysis memos. The individual analysts then presented their domain-specific codes (these effectively served as preliminary themes) to the full analysis team. A description of each code was a required element in their presentation slides. The aggregation of presentation slides served as a proxy for a formal codebook. Theme importance (i.e., theme categorization as major or minor) was determined based on participant prioritization of discussion points as described within the interview summaries and the relative breadth and depth of team analysis discussions related to each theme as documented in our weekly analysis memos. The senior qualitative investigator and lead analyst reviewed and refined the domain-specific code descriptions to produce the final set of key themes as it related to intervention design and delivery. Analysis was performed concurrently with data collection between February 1, 2021, and May 14, 2021.

Notably, this process reflects a variation on how coding is typically performed when using Hamilton's (2013) qualitative rapid analysis approach. The latter typically involves analysis of the fully constructed data matrices, such as with producing a detailed coding framework to fully represent the matrixed dataset. For this project, matrices were deductively constructed, but we did not code the individual participant matrix data directly, rather we continuously summarized new findings in the matrices with a focus on content that could inform intervention adaptation by our human-centered intervention design team. We identified the presence of key themes within and across matrix domains after the final stages of data reduction were completed, and generated key theme descriptions for presentation to our intervention co-design participants. As a result, our analysis shares similarities with qualitative rapid analyses conducted using RAP or RREAL sheets (Vindrola-Padros et al., 2020).

### Findings

Our process identified six key themes that were salient to intervention design in the patient matrix and six themes that were salient to intervention design in the health care provider matrix (Table 1). These themes reflected patient



**Figure 2.** Process of data collection and analysis.

and health care provider characteristics that were likely to influence engagement with the intervention and contextual factors associated with VHA HIV clinics that served as potential barriers or facilitators to delivering the intervention as proposed. Themes were presented to our multidisciplinary intervention design team in a one-hour presentation wherein co-design participants were encouraged to consider how our findings could be used to adapt the original intervention design to improve engagement and outcomes. We used a similar approach to human-centered design as in our other studies; details are reported elsewhere (Aifah et al., 2021).

### Considerations for Qualitative Rapid Analysis in DFE

During and after the DFE, our research team reflected on the qualitative data collection and analysis techniques used, with attention to the ease or difficulty of data collection, the richness of qualitative data obtained, differences between the described approach and our experiences with non-DFE-related rapid analysis projects, and the perceived impact of our work on intervention modifications. The challenges we experienced were captured in our weekly team meeting memos and were integrated into the following considerations on planning

DFE teams, working remotely, and maintaining a focus on intervention design when using qualitative rapid analysis (Table 2).

### Planning Rapid Analysis Teams for DFE

Team-based analysis was a key feature of this and many other rapid research approaches (McNall & Foster-Fishman, 2007; Vindrola-Padros et al., 2021). The data reduction and analysis procedures in our study proved efficient, yet we required a large team to hasten the DFE timeline. This was, in part, because no one on the team was fully allocated to this project. Across team members, project effort ranged from 5% to 20% to ensure that we could evaluate cardiovascular disease preventative care practices, draw comparisons across our three study sites, and deliver a timely report to our human-centered design team within 18 weeks. The two team members contributing the greatest effort (15%–20% each) were our lead analyst and a postdoctoral research fellow with clinical HIV expertise and advanced training in qualitative research. For all team members, this project was one of many that they were actively working on over the 18 weeks.

In this context, having a well-coordinated team that is willing to work concurrently to achieve timeline goals is

**Table 1.** Key Themes.

Participant group	Theme	Description	Theme importance
Patients	Telehealth experience	Descriptions of Veterans' prior video telehealth experience and their preferences for in-person versus video-delivered care	Major
	Communicating home blood pressure values	Attitudes towards Veteran use of SMS text messages for communicating blood pressure values; concerns for Veteran burden related to text messaging	
	Tri-directional communication	Veteran preferences for communication between the interventionist, provider, and patient regarding changes in care and expectations for messaging consistency	
	The provider's role	Veteran preferences for which health care providers are initiating medication changes and which health care providers will be needed to support patient engagement in the intervention	
	Veteran privacy and confidentiality	Veteran concerns regarding disclosure of medical information outside of the usual care team or during telemedicine encounters	Minor
	Demonstrating interventionist competency	Descriptions of which skills (including soft skills) and/or training interventionists will be needed for patients to develop trust in their care recommendations	
Health care providers	Balancing brevity and clarity in study notes	Preferences on which components to include in interventionist's study notes (e.g., suggested changes in care; rationale for suggested changes in care; specific provider "to do" lists)	Major
	Working around electronic medical record limitations	Electronic medical record access and patterns of use that may hinder intervention success; also includes suggested approaches to mitigate electronic communications barriers (e.g., copying other providers on study notes)	
	Overlap of intervention components with existing care	The overlap of intervention components with services already in use and the influence of overlap on providers' valuations of the intervention	
	Attention to lifestyle modification in self-management support	The importance of supporting lifestyle modifications as part of the intervention	
	Veteran patient engagement	Description of patients who are most and least likely to be engaged with the intervention; the need to assess and draw on Veteran motivations for self-management	Minor
	Developing trust in the interventionist	Relationship building and descriptions of competencies that interventionists must demonstrate for health care providers to develop trust in their clinical recommendations	

essential, though it is also important to consider the burden of concurrent data collection and analysis on the research team, regardless of team size and particularly during periods of high-volume interviewing (Ash et al., 2008). For example, by the end of the second weekly analysis meeting, nine Veteran interviews had been completed, debriefed, and discussed among the group. As we were already approaching data redundancy in the Veteran patient dataset, team members felt that a break in reviewing new interview summaries would be needed to allow for thoughtful consideration of the nuances present in the existing Veteran patient dataset.

The diversity of our rapid analysis team is consistent with trends in the composition of health-related

implementation science teams (QUALRIS Group, 2018), and contributed significantly to the project's success. A team-based rapid research approach can promote a fuller understanding of health services problems by leveraging the expertise of researchers from differing epistemological orientations (Milford et al., 2017). In this example, our team included a senior analyst who was an expert in traditional qualitative methodologies, a second analyst with expertise in rapid qualitative analysis, and content experts in health behavior change and HIV clinical care. Our varied lenses resulted in a critical review of the rapid analysis procedures prior to use and rich discussions of emerging themes and their implications for intervention development. Our team also included other research

**Table 2.** Considerations when Planning Developmental Formative Evaluations of Health Services Interventions Using Team-Based Qualitative Rapid Analysis.**Key points**

- Rapid research approaches align with recommendations for the inclusion of diverse stakeholders in implementation-focused research
- The breadth of available rapid data collection and analysis techniques provides flexibility to address a range of project scopes, deadlines, and research team experience
- Interviewers must be conversant on major features of the intervention being evaluated to elicit rich discussions of intervention fit
- Table-based analysis methods offer technological and project management benefits to virtual DFE teams
- Presentation of DFE findings to guide intervention adaptation may not require use of extensive participant quotes

professionals who had limited to no prior qualitative experience but who had worked in health services research as research staff. Their lived experience with implementing other research studies was also harnessed to enrich our structured weekly team debriefing sessions.

Forming such diverse qualitative research teams may not be feasible for all DFE projects. To assist in planning DFE research teams, we offer guidance on qualitative rapid analysis team selection based on specific knowledge and skill sets, acknowledging that our guidance is similar to others' guidance for planning rapid qualitative analysis teams for the broader category of health services evaluations (Wanat et al., 2022). First, although the matrix method is appropriate for use in research teams involving members without prior qualitative research experience (Gale et al., 2013), we found it necessary to have at least one experienced qualitative analyst on the rapid analysis team. We found that expertise in rapid research approaches proved less important than having an analyst on the team who was familiar with matrix or table-based qualitative analyses, who was skilled in developing SOPs to ensure rigor, and who could lead strategies to promote trustworthiness in team-based data collection and analysis. We additionally found that including an analyst with content expertise on HIV and HIV clinical care was critical to data sensemaking given the nature of our inquiry.

Regardless of team composition, preparation of all DFE team members should include a thorough introduction to the intervention of interest and to the general characteristics of the targeted study sites. Notably, only two of the three study sites were represented in our research team. Ideally, we would have preferred representation by all three sites to ensure our knowledge of the study sites was sufficient to support data interpretation regarding intervention fit. We tried to overcome this gap by meeting with site investigators before the interviews began. During these informal sessions, we obtained a contextual description of the clinic (e.g., description of staff and roles, usual workflow procedures). The analysis team was able to access these notes as needed during

weekly analysis discussions. In our case, assigning a data collection and analysis team to each study site would have been possible given our large team size and may have supported increased awareness of site differences through site immersion. For smaller teams, completing and analyzing interviews by site, or creating site-specific matrix summary for coding may be sufficient to overcome such representation challenges.

### *Compatibility With Web-Based Operations*

We found team-based qualitative rapid analysis to be highly compatible with remote, web-based DFE activities, as others have found (Graetz et al., 2022). Our ability to work remotely was supported by two features that are common among rapid research approaches—highly structured data collection and use of matrix or table-based analysis methods. Our data collection and analysis procedures were clearly outlined in an SOP document. Having well-developed SOPs ensured that all research team members could access detailed guidance on interview notetaking, member checking, debriefing, creating matrix summaries, and completing weekly debriefing memos. This structure was further supported through inclusion of in-document instructions on the interview notetaking template and the debriefing memo template. Less experienced members of our analysis team valued the highly structured nature of the project and later identified these documents as a critical source of informational support, particularly during periods of asynchronous research activities.

Our study adds to a growing number of studies that employ matrix or table-based analysis methods (Averill, 2002; Gale et al., 2013; Graetz et al., 2022; G. Hanna et al., 2012; Madsen et al., 2022; Rushton et al., 2023). The web-based matrices used to analyze data in this example included both continuous matrix summaries and interview summaries for each interview participant. Although our approach resulted in large and sometimes cumbersome matrices, by including each participant interview summary, our lead analyst was able to effectively



monitor team workflows, and the study team could easily scan the matrix domains to ensure that all relevant content was included in the final matrix summaries. Further, because our data matrices were spreadsheet based, they were accessible to analysts across VHA locations. Such web-based spreadsheets may be more accessible to remote analysis teams than traditional qualitative data analysis software (QDAS) packages (Graetz et al., 2022; Watkins, 2017), although some QDAS programs (e.g., Dedoose) are web-based and can support real-time team-based analyses, these programs are not commonly used within the VHA. The use of Microsoft Excel-based matrices also avoided the need for specialized QDAS training. Microsoft Teams storage of working data matrix files, allowed for concurrent, real-time matrix data entry and data summarization by various team members across the VHA. Today, multiple file storage programs are available to research teams (e.g., Google Docs, Dropbox, and Box) and can facilitate real-time exchange of qualitative data to support remote work. Yet, an understanding of the data security of these “cloud-based” storage sites should be carefully considered; they should only be considered if they meet compliance with information and privacy security guidance at research sites, and as approved by human subject ethics review boards.

These asynchronous file sharing features augmented but could not replace, frequent web-based meetings. We had weekly two-hour meetings of our seven-person team for group data analysis and for quickly formatting our research findings for human-centered design applications. As rapid analysis techniques are often utilized in the context of compressed evaluation timelines (McNall & Foster-Fishman, 2007; Vindrola-Padros et al., 2021; Vindrola-Padros & Johnson, 2020), DFE teams must balance the challenges of finding accessible meeting times (especially for more geographically disbursed teams) with the needs for intensive data collection and analysis.

### *Maintaining a Focus on Intervention Design*

As the goal of DFEs is to identify potential problems with an intervention prior to its implementation, the utility of rapid analysis approaches for DFEs is dependent on their success in identifying potential barriers to intervention effectiveness and identifying potential adaptations to intervention design or delivery to overcome those barriers. Our process identified 12 potential barriers to intervention effectiveness that could be addressed by human-centered design modifications prior to trial. Additional research is needed to compare reliability and outputs of different rapid analysis techniques. Yet, we believe our rapid analysis approach was useful for identifying salient points for intervention adaptation as evidenced by a productive human-centered design process which produced an adapted intervention, customized for the VHA setting.

Therefore, we offer the following reflections on optimizing data richness and maintaining an intervention design focus when using our approach to rapid analysis in DFEs.

First, DFE participants are likely to require orientation to any proposed interventions during the interview. Interviewers will require in-depth knowledge of the planned intervention components and an understanding of how the intervention components will be delivered to successfully describe the intervention to a variety of stakeholders. Being able to describe how the intervention would be delivered within our study sites enabled richer discussions of the intervention’s fit with existing HIV care practices and Veteran routines.

For complex health services interventions, including very targeted questions on each intervention component as part of the intervention orientation may be useful. This approach allowed us to verify the participant’s understanding of the intervention design, elicit feedback on a range on intervention characteristics, and appeared to reduce the cognitive burden of parsing the complex intervention design associated with our study.

Next, we specifically asked interviewers and notetakers to reflect on the main points of each interview as it related to intervention design during the interview debriefing process, and later to present their “top of mind” reflections on the intervention design based on the updated matrix summaries that were reviewed during weekly analysis meetings. Retrospectively, we reviewed the contents of our weekly analysis memos and found that intervention adaptations were considered for each of the key themes presented in Table 1. Lastly, we found that inclusion of detailed participant quotes in our findings was not needed to prompt engagement in intervention refinement activities within our human-centered design team. Rather, a brief description of each theme and high-level overview of CVD preventative care practices at each site was used to initiate stakeholder discussions on how to improve the proposed study intervention. The success of this format may be dependent on context. Our co-design participants were patients and health care workers who were intimately familiar with the delivery of health services at each of the study sites. Although others have disseminated formative evaluation results without inclusion of verbatim participant quotes (Schoster et al., 2012), contemporary thought leaders continue to advocate for the inclusion of participant quotes in the presentation of qualitative findings in implementation research (QUALRIS Group, 2018). Thus, additional research is needed to determine whether our chosen dissemination format is likely to serve as a barrier or facilitator to integrating DFE findings in the adaptation of interventions and clinical trials.

### **Conclusion**

Qualitative rapid analysis approaches can be successfully leveraged to inform intervention design and delivery in

clinical trials, particularly when adapting an intervention to a new population or setting. This article provides a methodological description of our 18-week team-based qualitative rapid analysis approach along with practical considerations for its use in implementation-focused DFEs. We provide guidance on the resources needed to successfully execute time-limited projects and offer potential strategies for overcoming the challenges associated with this approach. Our goal is to support other researchers to leverage rapid research approaches in DFEs, and to generate discussion of methodological variations that could enhance rapid research for the purposes of implementation-focused intervention design.

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### Ethical Statement

Our study was approved by the Veterans Affairs (VA) Central Institutional Review Board for Multisite Studies (approval no. 20-26). A waiver of documentation of informed consent was obtained for this study. All participants provided verbal informed consent prior to study enrollment.

### Disclaimer

The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States government.

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### Supplemental Material

Supplemental material for this article is available online.

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