Study Title: Building Partnerships with First Responders to Explore Strategies to Improve Delivery and Access of Mental Health Services

NCT Number: NCT03801408

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Support Funding: NIH/NIMH

Date: July 20, 2020

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Background and Rationale

Sentinel events, such as the attacks on September 11, 2001 (9/11), have focused attention on the magnitude of traumatic exposure experienced by first responders (FRs).[11] In the United States (U.S.), firefighters and EMT/paramedics respond to more than 50 million emergency calls annually.[1,2] Although many FRs serve entire careers without responding to events like those of 9/11, the daily operations and experiences they expect and accept as part of their jobs expose them to a myriad of traumatic events (e.g. fatal vehicle accidents, suicides, school shootings). The nature, frequency, and intensity of duty-related traumatic exposures place FRs at significant risk for developing mental health (MH) problems.[3]

An estimated 18-37% of FRs worldwide meet criteria for posttraumatic stress disorder (PTSD),[8] a rate similar to that among military veterans (10-31%),[19] and much higher than that in general populations (8.7%).[4,12,13] MH problems among FRs are not limited to PTSD; prevalence rates for other problems are: 7-22% for depression,[14,15] 4-22% for anxiety,[4,16] 34-56% for binge drinking,[17,18] and 58-70% for sleep problems.[14,19] MH problems can emerge in training[14] and continue long after retirement, with approximately 15% of suicides among FRs occurring in retirees.[20,21] In one study (n=1027), 15.5% of FRs reported at least one suicide attempt during their careers,[5] much higher rates than those in general adult populations (1.9-8.7%).[5,8,22]

However, we were able to locate virtually no published research on rates of help-seeking and service utilization among FRs with MH problems. Less than 40% of the general population who experience MH problems seek help,[6] and help-seeking is expected to be even lower among FRs because of the stigma associated with mental illness and the emphasis that FR culture puts

on strength and self-reliance.[5,7] According to published personal accounts, MH problems are viewed as signs of vulnerability; acknowledging them can lead to mistrust and raise questions about personal safety of others within FR departments.[8] There is apprehension about allowing "outsiders" into the culture, which creates isolation and inhibits help-seeking.[9] Yet, there is minimal research to corroborate these personal testimonies. We urgently need to understand FRs' perspectives about accessing and engaging in MH services to guide development of a MH service model they will be willing to access and use.

Evidence is scarce regarding FRs' barriers to help-seeking. Two recent studies described both structural and cultural barriers, such as cost and availability of resources,[23] perceived accessibly of treatment, and concern about stigma.[24] Hom et al. found that firefighters who experienced suicidal thoughts/behaviors, but did not utilize services reported more concerns about reputation and embarrassment than those who did use services.[25] The literature on U.S. military veterans and law enforcement officers (LEOs), similar cultural groups, provides useful clues.[8] For instance, veterans report barriers to accessing MH services to include concerns about negative consequences of disclosing MH problems, discomfort with help-seeking, and negative values/ beliefs regarding MH treatment.[26,27] Strategies to reduce stigma and improve MH care among veterans suggest the importance of non-stigmatizing language related to MH, anonymity, and peer-to-peer support.[28] LEOs are concerned that help-seeking indicates weakness; they also fear loss of confidentiality and threats of job loss.[29,30] Although literature on veterans and LEOs is suggestive, FRs (as defined by this study) are unique in structural and cultural ways that may influences help-seeking and require tailored approaches to address their MH problems.

The need for research and resources to address MH problems among FRs is well recognized by national FR organizations. The National Fallen Firefighters' Foundation (NFFF), Initiative 13: Psychological Support, emphasizes the need for resources to help FRs cope with duty-related complications, especially regarding emotional and psychological stress. The 2015 National Fire Service Research Agenda recommends research to identify individuals who are at high risk for health problems, especially those related to repeated trauma exposures. In particular, the agenda gives high priority to efforts to "identify, develop, and refine evidence-based tools and approaches for behavioral health screening, assessment, and intervention" (p.17).[31] NFFF also highlights the need for a new model of MH screening and interventions that better reflects the variability in how FRs respond to traumatic incidents. The importance of tools that reflect variability is supported by a survey conducted by National Volunteer Fire Council (n=849). Over 75% of firefighters indicated greater willingness to utilize a program that was tailored to their needs compared to a national suicide hotline.[14] This supports the need for research to develop a tailored MH service model to support early identification and treatment of FRs' MH problems.[31]

Evidence of the effectiveness of MH services commonly available to FRs is lacking. Many FR departments offer limited MH services, with the two most common being Critical Incident Stress Debriefing (CISD) and Employee Assistance Programs (EAPs). However, empirical evidence for these interventions is inconsistent. CISDs are in-house debriefing sessions implemented within 72 hours after an incident; the limited published research on CISD does not provide strong evidence for its effectiveness.[32] Previous studies have shown that CISD can actually increase the risk of PTSD among those that receive debriefing (OR 2.51; 95% CI 1.24 to

5.09).[33,34] Qualitative research regarding this topic is limited to one national study (n=423) that explored firefighters' perceptions about CISD; some FRs reported CISD to be beneficial, others found it to be intrusive and distressing.[35] Still, CISD continues to be used by FRs nationwide.[35] EAPs are outside agencies contracted to provide MH services to FR departments. Although they are widely used, we were unable to find research on FRs' perceptions of EAPs or their effectiveness in meeting FRs' MH needs.

Preliminary Studies (PS)

PS#1: Funded by a UAMS College of Nursing intramural grant (January, 2017). The PI used community engagement to establish partnerships with key FR stakeholders across AR to discuss FRs' MH-related issues, including the: Director of Emergency Medical Services (EMS), AR Department of Health; Fire and EMS Coordinator, AR Department of Emergency Management; President of AR Professional Firefighters Association, local EMS directors, and multiple fire chiefs statewide (see Letters of Support). They expressed concern about the increased prevalence of MH problems among their FRs, and attributed the increase in number of suicides and early retirements over the past decade to MH problems. They also reported a lack of help-seeking even when MH problems were apparent and EAP and/or CISD were available. All community partners were highly motivated to address MH problems among FRs, but have lacked resources and expertise to do so. For example, the President of AR Professional Firefighters Association reported that they have pushed legislation to address MH issues in the fire service for years, but have been unsuccessful. These partnerships will be critical to the successful conduct of the

proposed research as well as future implementation, dissemination, and sustainability of the resulting MH service model for FRs.

PS#2: Funded by an International Society of Psychiatric Nursing Foundation Research grant (March 2017). The specific aims for this ongoing PS are to 1) assess the feasibility of using a community-engaged approach with FRs, 2) characterize the MH profile of Arkansas' FRs, and 3) explore individual FRs' perceptions of MH problems and use of MH services, including barriers and facilitators to help-seeking. *To achieve Aim 1*, the PI collaborated with PS#1 community partners to refine recruitment methods; these methods will be used in the proposed study (described below). Recruitment was successful and resulted in ample and continued access to this population, including presentations at four FR-related state conferences. *To achieve Aim 2*, FRs statewide were invited to complete an anonymous online survey that incorporated brief assessments of various MH problems,[42] as well as questions addressing demographics and factors that can pose as potential risk/protective factors (e.g., marital status, military service).[10,42] A total of 220 FRs started the survey and 87% completed it. Of completers, 86% were male and 95% were Caucasian; the average length of time as a FR was 16.2 years; 23% reported a previous MH diagnosis and 25% reported previous MH treatment. The high rates of self-reported MH problems found were: 26% for PTSD; 28% for moderate to severe anxiety; 14% for major (moderate-severe to severe) depression; 20% for harmful/ hazardous drinking; and, 34% for high-risk for suicidal behaviors, highlighting the need for the proposed study.

To achieve Aim 3, we conducted in-depth, ethnographic interviews with individual FRs. Thirty-two FRs were interviews; of those interviewed, 36% reported a previous MH diagnosis,

and 40% reported previous MH treatment. Experience with Aim 3 demonstrates the willingness of FRs with MH problems to participate in qualitative research. Grounded theory-informed, qualitative analytic methods (as described below) were used to identify common themes. The main the themes included: knowledge, barriers and facilitators to help-seeking, effects of the job and coping with them, non-duty stressors, pros and cons of existing MH services and delivery methods, and novel delivery approaches.

Specific Aims

Based on preliminary data and current literature, there is crucial need to reduce barriers to access and promote engagement in MH services to address FRs' MH needs. To develop an effective MH service model that will be accessed and used by this high-risk group, we must understand and incorporate FRs' preferences for MH service and delivery methods. We propose a two-stage exploratory, qualitative study that will use a statewide community-engagement approach to conceptualize a MH service model that would motivate FRs to be more engaged in services. In Stage 1, we will conduct qualitative focus groups (and individuals interviews, as needed; see below) with firefighters and EMTs/ paramedics across Arkansas. In Stage 2, we will use a product development process grounded in these findings to conceptualize a MH service model feasible for implementation in real world settings. (Protocol for Stage 2 will be submitted for IRB approval at a later time.)

Phase 1-Specific Aim 1: Identify FRs' preferences and priorities regarding MH service and delivery methods, including the feasibility, acceptability, and value of each method. (*Method: Qualitative interviews- focus groups and individual*)

Phase 2, Specific Aim 2: Conceptualize a MH service model, in partnership with FRs statewide, that is applicable, acceptable, and feasible for implementation. (*Method: Virtual Delphi group of consensus formation*)

Through this multi-phase work, we will generate the scientific foundation to develop a comprehensive, MH service model that diverse FRs will be willing to access and use. Based on FRs preferences and priorities, we expect this model will encompass a range of services, such as education and awareness initiatives, prevention and screening strategies, and crisis and maintenance interventions, to meet their MH needs throughout the course of illness.

Study Design and Procedures

This qualitative study will use a statewide community-engagement approach to explore FRs preferences for MH service and delivery methods. In a community-engagement approach, researchers form collaborative partnerships with key stakeholders; together, they identify areas of interest and concern.[45]

Phase 1-Specific Aim 1: Identify FRs' preferences and priorities regarding MH service and delivery methods, including the feasibility, acceptability, and value of each method.

Instruments and Measures

Prior to starting the focus group/interview, the PI or research associate (RA) will distribute a one-page document to reference during the informed consent process; the document will describe the study purpose, procedures, risks, and benefits (Human Subjects Protection); time will be allowed for questions. Participants will be advised that participating implies consent and they

may withdraw at any time. (We received a waiver of documentation of consent for the interviews in PS#2; we will seek the same for this study). Rules of confidentiality will also be discussed.

Following the consent process, participants will be asked to complete a brief form to collect data about demographics (i.e., age group, race/ethnicity, gender) and potential risk/protective factors (e.g., time in service, military service, medical problems).

The PI and/or RA will facilitate the focus group (FG) discussions using a semi-structured question guide (Table 2), which will have undergone review by our community partners. (In addition to content, we will ask them for feedback regarding language, ensuring it is non-stigmatizing.)

To start the group discussion, the PI/RA will use a PowerPoint presentation to highlight the various MH services discussed in the PS interviews. Group participants will be asked to discuss the pros and cons of existing MH services and delivery methods, and novel approaches that emerged during the interviews. They will be asked to discuss their own experiences related to each; based on their experiences, they will be asked to make recommendations for services/delivery methods that would motivate FRs to be more engaged in services. We will ask them "where to start" when implementing a MH service model; follow-up questions will include probes related to

Table 2. Qualitative Question Guide

Main Question	Which of these services and methods of delivery do you recommend?
Probe Questions	What do you like and not like about each of these services and delivery methods?
	Do you foresee any additional barrier to using these services? Barriers to implementing them?
	Could they be modified/adapted to better fit the first responder culture and environment?
	Would you suggest any additional services or methods that we haven't discussed yet?
	What do you think we should start with first?

acceptability and feasibility. (Similar methods were effectively used in a study conducted by Co-investigator Curran and colleagues).[51]

In concluding the FGs, we will offer optional telephone follow-ups to participants who may be reluctant to express their views in the group. Participants will also receive a blank piece of paper, along with a web link to an anonymous form in Survey Monkey. Here, they can add information they may not be comfortable discussing in the FG; text data from these options will be included in data analysis. Additionally, the PI/RA will record field notes during each FG, noting information about context, nonverbal communication, and interactions observed during the FG.[52]

Research Team

The PI is psychiatric advanced practice registered nurse whose qualifications to serve as PI on this project stem from: 1) well-established community partnerships with FRs across the state; 2) having completed a systematic review and pilot studies related to the MH of FRs[36, 37]; 3) previous clinical and research experience with individuals that have experienced trauma; and, 4) interdisciplinary collaboration with experts in the fields of emergency medical services and qualitative research. Co-I McSweeney is an expert in qualitative methods. She will attend monthly team meetings to evaluate the FG processes, including development of the FG question guide and assist in qualitative data analysis (as described in Data Management and Analysis section). Co-I Curran is an expert in implementation science and has conducted multiple qualitative studies related to help-seeking and use of MH services. He will attend monthly team meetings regarding these aspects of study implementation, including the FG method (which was

successfully used in his previous studies). The RA is a licensed social worker (LCSW) with over 10 years' experience, and a local volunteer firefighter.

Study Population

Participants will include a convenience sample of firefighters and EMTs/paramedics from across Arkansas.

Inclusion criteria

- ages 18 and over;
- volunteer and career personnel;
- active, inactive, and retired

Exclusion criteria

- Non-english speaking (due to the nature of FG/interview discussions).

Recruitment

We will use opt-in methods, facilitated by our community partners, to recruit participants. The PI will visit recruitment sites, provide refreshments, distribute promotional materials, and discuss long-term study goals. She will send emails to community partners that include study information, invitations to participate, and suggested text for email reminders.[50] Partners will then distribute the emails throughout their departments; the State EMS Director will distribute through the state EMS registry, which includes all certified EMT/paramedics in the state. Emails and promotional

Figure 2: Arkansas: Regional Map

materials will instruct FRs to contact the PI or research assistant (RA) by telephone for more study information. They will also have the option to follow a web link (available as a Quick Response [QR] code) where they can read more about the study and/or submit their name (first name, last initial), phone number and/or email address to be contacted with more study information. They will also be asked which region of the state they respond in; no additional information will be requested online.

Many community partners are involved in FR-related organizations; she may be invited to present and recruit at state meetings. Some of the departments also distribute monthly/ quarterly newsletters; study information will be published therein (with approval from the administration). The flyer will also be placed on social media sites, such as Facebook and Instagram.

Sampling and Sample Size. An essential part of grounded theory-informed methods is the use of theoretical sampling.[49] In grounded theory research, we do not know the important themes in advance; instead, they emerge and are refined over time as data are collected and analyzed. In general, exploration of a certain theme is stopped when "saturation" is reached, that is, no new themes emerge from the data (discussed below). Therefore, theoretical sampling does not provide a detailed sampling schema or calculation for number of participants beforehand. For this study, we will recruit FRs to participate in up to 25 FGs that will include 5-12 participants per group. Eighteen of these groups will be open to all FRs from different regions across the state. Evidence suggests that call volume and career vs. volunteer service influence FRs' MH.[42] The 2 most populous regions in Arkansas (Central and Northwest) have higher EMS call volumes and a greater number of career fire/ambulance services than the other 4 regions; the

latter are more rural and are served primarily by volunteer fire/ambulance services (Figure 2). Therefore, we propose to conduct 1) five FGs in each of the two most populous regions (total=10), and 2) two FGs in each of the other four regions (total=8).

Since the majority of FRs are white males,[1,62] female and minority FRs may be reluctant to openly discuss MH-related issues in a diverse group. We will conduct a minimum of 2 of the 25 FGs with an ethnically diverse group of females only, and an additional 2 FGs with minorities only (males and females) (total=4). This will ensure that at least 10-15% of participants are females and minorities. We will make every effort to recruit these participants from across AR, but due to the distribution of FRs across AR, we expect these FGs will take place in Central and Northwest AR.

Sample Size

An essential part of qualitative methods is the use of theoretical sampling. Theoretical sampling does not provide a detailed sampling schema or calculation for number of participants beforehand. Instead, exploration of a certain theme is stopped when "saturation" is reached, that is, no new themes emerge from the data (see Analysis section).

Compensation

Participants will receive a $25 Walmart gift card upon completion of the FG or interview.

Limitations

A possible barrier to this study may be recruitment concerns. To date, all chiefs contacted have understood the significance of this study and have agreed to encourage participation. However, individuals may also be reluctant to participate. During recruitment, we will explain

the confidential manner of this study to all potential participants: that is, all data will be unidentifiable and individual responses will not be shared with employers and administrators.

Risks and Benefits

Adult Minimal Risk: Any activity where the probability and magnitude of harm or discomfort anticipated in the research is not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

Participants may experience distress at the time of, or because of the focus group/interview discussions. Prior to starting participation, they will be advised that if this occurs, they can choose to stop meet with the PI/RA individually. They will also be advised that the PI/RA may ask them to discontinue participation or ask to meet afterwards if a significant level of distress is observed. In meeting with the participant individually, the PI, an experienced psychiatric-mental health nurse practitioner, or RA, a licensed social worker (LCSW) with over 10 years' experience, will briefly evaluate him/her and conduct a suicide risk assessment if indicated. Based on the evaluation, the participant may be referred for services, including (but not limited to) a local emergency department (if currently experiencing active suicidal ideations), the locally contracted EAP, or other MH services.

The PI has received permission from various MH providers, including therapists and nurse practitioners, which have agreed to be listed as an available resource for the purposes of this study. This list of compiled resources, along with a list of phone numbers, will be available at all sites and online at the link provided on the flyer. The phone numbers will include 911 (for emergencies), local and/or national suicide hotline numbers, and the PI's phone number. If

called, the PI (or consulting provider) will conduct an appropriate evaluation, including a suicide assessment, and make referrals as appropriate (as mentioned above). Documentation and follow-up will also be completed as applicable. This information (available resources and phone numbers) will also be provided upon completion of the group/interview and maintained online at the link provided in the email.

Suicide Risk Assessment and referral. The PI/RA will use the Suicide Assessment Five-step Evaluation and Triage (SAFE-T) for Mental Health Professionals to assess risk of suicide and make referrals (uploaded in attachments). SAFE-T is a resource recommended by SAMSHA and published by the National Suicide Prevention Lifeline. This 5-step assessment guides the provider to: 1) identify risk factors, 2) identify protective factors, 3) conduct suicide inquiry, 4) determine risk level/ intervention, and 5) document.

To reduce risk of breach of confidentiality, audio-recordings of the focus groups/interviews will be stored in a locked filing cabinet and all transcriptions will be electronically documented. All electronic data will be maintained on a password-protected server to which only the research team will have access. The HIPAA compliant version of SurveyMonkey will be purchased; only aggregate data from the surveys will be reported.

Benefits

There may be no personal benefits to the individual participants at the time of the study. It is possible, however, that participating in this study will increase participants' awareness of, and decrease stigma related to, mental and substance use disorders, which may prompt some to seek services. Further, findings from this study will guide future studies to develop tailored prevention

and treatment strategies that are accessible across Arkansas to improve the overall mental and emotional well-being of FRs.

Data Handling and Recordkeeping

The PI will carefully monitor study procedures to protect the safety of research subjects, the quality of the data and the integrity of the study. All data will be recorded without identifiers and will be anonymous. Audio-recordings will be stored in a locked filing cabinet and all transcriptions will be electronically documented. All electronic data will be maintained o on a password-protected UAMS server, both located behind locked doors in a restricted access area of the UAMS campus. Only the PI, Co-Is, and Research Assistant (to be determined) will have access to the data.

Data Analysis

The RA will enter quantitative participant data (i.e. demographics, risk/protective factors) into SPSS (V24).[53] Data will be analyzed using standard statistical techniques to summarize data distributions and to model associations among risk and status variables. FGs and interviews will be audio recorded, transcribed verbatim, and entered into a professional software program designed to facilitate the data analysis process and produce an audit trail.[54] Data submitted online will also be entered.

We will analyze data using grounded theory-informed methods of content analysis and constant comparison.[43] Content analysis is a systematic, objective analysis designed to identify key words, phrases, and topics, which guides *top-level coding*.[55] This process is followed by constant comparison, *second-level coding*, an iterative process designed to identify common

themes by comparing one set of data to another.[49] We will also use this process to compare data across sub-groups (e.g. urban/rural, male/female). The PI has experience in qualitative methods; both co-Is have expertise in qualitative methods; and the RA will be trained in these methods.

Top-level coding. The PI, co-I (McSweeney), and RA will independently review the transcripts from the first 3 FGs. Using content analysis, similar data from these transcripts will be identified, grouped, and assigned a label, referred to as a code.[47] These codes will reflect the themes and subject areas that, by virtue of their recurrent nature, seem most important to answering the key research questions. The research team will meet to compare coding and reach consensus on coding that differs. This process will continue with additional transcripts until they reach consensus on a set of initial top-level codes and definitions for each code, which will comprise the *code book*. This process will ensure inter-rater reliability, that is, consistency in coding.[56] Thereafter, the PI and RA will individually code the remaining transcripts using the codebook. To ensure coding consistency, they will review each other's work monthly and meet to discuss and resolve any differences. In the event that new themes emerge after the codebook is agreed upon, the research team will meet again to define emerging codes; previously coded transcripts will be recoded to reflect the additions(s).

Second-level coding. Second-level coding is a process to further refine the constructs indicated by top-level codes. The final codebook will be used to "sub-code" data within each code. That is, data within codes will be compared across transcripts to find similarities, differences, associations, and relationships to determine patterns and thematic categories,

creating these sub-themes. The process of inter-rater reliability (discussed above) will be used to establish reliability.

Saturation. In general, exploration of a certain theme is stopped when "saturation" is reached, that is, when no new concepts or properties emerge from the data after the thematic categories are identified. Given the potential size of the overall sample from the FGs (n=132-220) and individual interviews (n=44), we will have no difficulty in achieving overall saturation. Additionally, based on the anticipated diversity of the FGs, we expect to be able to achieve saturation for both urban (n=60-100) and rural (n=48-80) FRs, as well as for female (n=12-20) and minority (n=12-20) FRs. We will use standard qualitative guidelines for trustworthiness by Lincoln and Guba (1985) to maximize the project's validity and reliability.[57] A data table will be constructed to provide an audit trail that identifies the thematic categories, frequencies of explanations, and examples of raw data that exemplify each theme. The field notes recorded by the RA will also be used in this iterative analysis process.

Phase 2, Specific Aim 2: Conceptualize a MH service model, in partnership with FRs statewide, that is applicable, acceptable, and feasible for implementation.

Product development activity: Delphi technique

After all focus groups have been analyzed, we will initiate a series of product development activities. We will use a virtual Delphi technique of consensus formation to conceptualize a MH service model that is acceptable to FRs and feasible to implement in real world settings. This method has been successful in fostering a sense of ownership and the engagement of diverse stakeholders in an iterative decision-making process.[58]

Participants

We will invite individuals from our community partners (i.e., Arkansas Department of Health, Professional Firefighters Association, etc.) to participate in these Delphi groups, as well as a minimum of 12 diverse FRs who participated in the Phase 1 focus groups. We will aim to include participants from all 6 regions across the state (see page 12). In this way, we will capture the perspectives of both administrative and in-line FRs.

Procedures

Due to extended proximities and current COVID related guidelines, all discussions will be conducted virtually using Zoom. The initial meeting with be conducted by the PI and RA. The PI will explain the discussion panel's purpose and procedures, including the process, timeline, and expectations. Then, the RA will distribute a handout that briefly describes existing MH services and delivery methods; she will review the Aim 1 findings, including the recommendations and priorities that arose from the groups. After the first meeting, the PI and RA will compile results of the discussion to conceptualize a MH education program. Then, this information will be disseminated to the FR panel for review prior to the next meeting. To allow all individuals to privately agree or disagree with each, a survey will be distributed via Survey Monkey that includes the essential components discussed in the group. Each individual will indicate if they agree or disagree and be able to write additional comments if needed.

The subsequent meetings will aim at reaching consensus on all components of the program. The RA will lead a series of discussions every other week via Zoom, covering the essential components of a MH service model, including (but not limited to) implementation and

engagement strategies, feasibility, and outcome measures. They will also discuss how to meet the diverse needs within FR populations if differences emerge (e.g. fire vs. ambulance services; urban vs. rural communities) so that the service model will be generalizable to all FRs. Following each meeting, we will aim for consensus on the key components discussed during the group using the survey method discussed above. This technique will allow us to confirm and document that we have reached consensus.

When employing a Delphi technique, each round of discussion will involve up to three iterations of deliberations that will seek agreement on essential components of a MH service model. We will plan to have a minimum of 5 meetings: one for introduction, three for discussion and deliberations, and one for final presentation. Using multiple rounds of deliberation, along with a pre-set percentage of agreement, will facilitate a stable and reliable consensus-building process. In the remote chance that consensus is not reached, we will schedule an additional called meeting to additional to further discuss and deliberate

We estimate to have a total of 22-24 participants in the Delphi activities. Upon inviting participants, we will ask them to agree only if they can commit to all meetings, with an allowance of 1 absence, to assure quorum. Specifically, we will use a minimal consensus level of 75% panel agreement for each component.[60]

Compensation

First responders and associated agencies are already strained with the current pandemic, so we want to adequately compensate them for their time. Those that commit to and attend at least 4/5 meetings will receive a $50 Walmart gift card.

Ethical Considerations

This study will be conducted in accordance with all applicable government regulations and University of Arkansas for Medical Sciences research policies and procedures. This protocol and any amendments will be submitted and approved by the UAMS Institutional Review Board (IRB) to conduct the study. The PI will carefully monitor study procedures to protect the safety of participants, the quality of the data, and the integrity of the study.

A waiver of documentation of consent is also requested. We will use an IRB-approved study information sheet to discuss the study and complete the consent process before beginning the focus groups and interviews. All participants will be provided with an information sheet that describes this study and provides sufficient information in language suitable for them to make an informed decision about their participation in this study. The researcher will thoroughly explain each element of the document and outline the risks and benefits, and requirements of the study. Questions regarding participation will be answered, no coercion or undue influence will be used, and participants can leave the group or stop the interview at any time. The informed consent process will be documented in a process note for each group/interview.

If at any time there is concern that child or elder abuse has possibly occurred, or a participant discloses a desire to harm self or others, it will be reported to the appropriate authorities.

Implications and Dissemination of Data

Based on information generated by this project, we will pursue a multi-stage research agenda. Using this study's findings, the next step will be to develop a tailored MH service model consisting of services and delivery methods that can be generalizable to FRs statewide, and to

pilot test it for feasibility and acceptability. To do so, we will apply for funding, such as an R34 through the NIMH Division of Services and Intervention Research. Future research will include a full-scale trial of the model statewide, revised based on pilot results, and then a hybrid effectiveness-implementation trial.

Results of this study may be used for presentations, posters, or publications. The publications will not contain any identifiable information that could be linked to a participant. Dissemination of findings to FRs and MH providers through publications and conferences can extend to national arenas to better meet the needs of all FRs. With continued efforts and partnerships, findings can be integrated into policy and funding-related decisions to sustain the delivery of high-quality MH services for FRs in Arkansas and across the nation.

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