BOUNDARIES AND INFOMEDIARIES: A QUALITATIVE STUDY OF THE INFORMATION PRACTICES OF COMMUNITY HEALTH WORKERS

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BOUNDARIES AND INFOMEDIARIES: A QUALITATIVE STUDY OF THE INFORMATION PRACTICES OF COMMUNITY HEALTH WORKERS

DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Communication & Information at the University of Kentucky

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2020

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ABSTRACT OF DISSERTATION

BOUNDARIES AND INFOMEDIARIES: A QUALITATIVE STUDY OF THE INFORMATION PRACTICES OF COMMUNITY HEALTH WORKERS

Despite successful efforts to treat and manage diseases, public health officials have recently begun a campaign to refocus efforts toward initiatives to alleviate the pressures that are often referred to as social determinants of health. In eastern Kentucky, and in other geographical regions labeled as health professional shortage areas or medically underserved areas, issues stemming from social determinants are compounded with health care systems that are often lacking the human resources to meet basic medical needs. One strategy has been to utilize volunteers and paraprofessionals such as community health workers to lessen the burden on the primary care and hospital systems. Community health workers are frontline public health workers who are trusted members of their communities and who serve to connect their clients to health and social services (American Public Health Association, 2009). Now more than ever, community health workers are seen as an integral piece to providing comprehensive and patient-centered care. The purpose of this study is to, ultimately, better understand the information practices of community health workers in Eastern Kentucky in order for the health science and public library communities to position themselves to better serve this population of health professionals. Two research questions will serve to inform this overall goal: (1) what are the information practices of the Kentucky Homeplace community health workers? And, (2) what is the role of information communication technologies - such as mobile phones, computers, and the internet - in the access and management of information by Kentucky Homeplace community health workers?

This study is a qualitative investigation, utilizing multiple methods, seeking to understand the information practices of Kentucky Homeplace community health workers. Semi-structured, in-depth interviews and participant observation with community health workers have been conducted. Conceiving information needs, seeking, barriers, and uses as practices requires the recognition that social practices are located within microcosms which, in turn, situated within meso- and macrocosmic communities, and as such, practices are socio-cultural and political. To understand the socio-cultural context and political ecology in which community health workers operate, semi-structured, in-depth
interviews have been conducted with community health worker administrators, state public health officials, and leaders from the statewide community health worker association. To further understand the socio-cultural and political context, this study has conducted thematic content analysis with documents critical to the construction of community health workers’ roles, responsibilities, and authority. Finally, to fully understand the information environment in which community health workers operate, semi-structured interviews have been conducted with directors of public libraries in the 30-county area Kentucky Homeplace covers as well as librarians from regional academic and health science libraries. In total, 6 interviews were conducted with community health workers, 3 interviews were conducted with library directors and/or librarians, and 4 interviews, combined, were conducted with community health worker administrators and individuals from the Kentucky Department for Public Health. A total of 8 hours, 39 minutes, and 47 seconds of interview time was recorded. 16 hours of participant observation was conducted with two community health workers, across two days.

The community health workers in this study articulated information needs that related to client information, information about services and resources in their communities, information about services and resources available independent of location, and health information for themselves and for their clients or clients’ caregivers. While some of this information was sought after through information communication technologies, community health workers also indicated that they often seek information through interaction with other community health workers, and with representatives from community organizations. Community health workers function as interstitial agents, crossing boundaries between organizations, or between societal levels. The information that they create, seek, process, and disseminate functions as a boundary object. To do this, community health workers utilize a wide range of information communication technologies including modern modalities such as computers, the world wide web, email listservs, and shared servers, in addition to conventional modes of communication such as the phone, business cards, and printed pamphlets. Ultimately, the role of the community health worker is as an infomediary, positioned to facilitate the flow or exchange of information from one body to another.

KEYWORDS: Community Health Workers, Information Practices, Kentucky, Qualitative Research

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BOUNDARIES AND INFOMEDIARIES: A QUALITATIVE STUDY OF THE INFORMATION PRACTICES OF COMMUNITY HEALTH WORKERS

By
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DEDICATION

To Meghan, Sylvan and Dorothy. For everything.
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This dissertation would not have been possible without the support of several people and organizations. First, my thanks to the chair of my committee, Dr. Jeffrey Huber for his time and commitment to this project, for the opportunity to learn from his experience, and for his endless encouragement. Next, to my committee, Dr. Allison Gordon, Dr. David Nemer, and Dr. F. Douglas Scutchfield, for the time and energy to guide me through this project and for their unwavering support. My thanks to Kentucky Homeplace, the Kentucky Department for Public Health, the Kentucky Association for Community Health Workers, and librarians across the commonwealth for their generosity and willingness to offer their time and experiences. To the community health workers at Kentucky Homeplace who showed me that some jobs are vocations. I can only hope that wherever my life takes me, I am able to approach it with the same passion you all bring to your positions and the same dedication to serving others. And of course, to my friends and family who have been an infinite source of inspiration and positive energy.
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CHAPTER 1. INTRODUCTION

1.1 Introduction

This study tells the story of a group of community health workers and their information practices. A community health worker is “a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served” (American Public Health Association, 2009). The community health workers in this study are all located in Eastern Kentucky, so in one sense this study and the stories within are local. And yet, as qualitative research tends to do, this study will speak to broader themes - themes that will reference social, political, and economic conditions that community health workers must navigate in order to impact the health and wellbeing of their clients and communities.

This study investigates information practices. Community health workers operate in a dense information environment in which they are perpetually assessing, seeking, gathering, synthesizing, and disseminating information for themselves and their clients. These information practices are situated, embodied, and enacted as social and professional practices. This study acknowledges that information practices are co-constructed through socio-technical arrays and recognizes that information communication technologies both enable and restrict information practices.

This study interrogates the public health and health care systems that help to form the contextual boundaries of community health workers, their professional responsibilities, and their clients’ needs. Both the public health and health care systems are in the midst of a tumultuous period, where uncertainty is commonplace. Yet, despite this uncertainty, policy makers, researchers, and the health workforce are working tirelessly to address the immediate, sometimes clinical, factors contributing to health and well-being, as well as their social determinants.
This study is about organizations such as public and health science libraries that sit at the points of confluence in the social, political, and economic network formed by the creation and distribution of information. This study encourages the reader to think of information organizations not as separate, but as integral parts of the public and health care systems.

1.2 Problem Statement

Despite successful efforts to treat and manage diseases, public health officials have recently begun a campaign to refocus efforts toward initiatives to alleviate the pressures that are often referred to as social determinants of health (Braveman et al., 2011; M. Marmot, 2005; Michael Marmot et al., 2008). In eastern Kentucky, and in other geographical regions labeled as health professional shortage areas (Health Professional Shortage Areas (HPSAs) | Bureau of Health Workforce, n.d.) or medically underserved areas (Medically Underserved Areas and Populations (MUA/Ps) | Bureau of Health Workforce, n.d.), issues stemming from social determinants are compounded with health care systems that are often lacking the human resources to meet basic medical needs. One strategy has been to utilize volunteers and paraprofessionals such as community health workers to lessen the burden on the primary care and hospital systems. Community health workers are frontline public health workers who are trusted members of their communities and who serve to connect their clients to health and social services (American Public Health Association, 2009). Now, community health workers are seen as an integral piece to providing comprehensive and patient-centered care. Kentucky Homeplace is an organization that operates in 30 counties in eastern Kentucky and employs 22 community health workers to provide such care. Indeed, their mission is to “provide access to medical,
social, and environmental services for the citizens of the Commonwealth” (About Kentucky Homeplace | Center of Excellence in Rural Health, n.d.). While much is known about the efficacy and effectiveness of community health workers, less is known about their information practices (particularly those working in high-income countries), or how information organizations can assist, or are already assisting, in alleviating barriers to authoritative health information.

Therefore, this study seeks to provide an understanding of community health workers’ information practices with the hope that information organizations such as public and health science libraries can accommodate information needs and mitigate barriers to information. “Information practices” is an umbrella term used to describe a constructionist approach to information behavior research (Savolainen, 2007). As such, information practices represent the larger body of research on information needs, barriers, and seeking, understanding that these activities are situated, embodied, and enacted through language, talk, and interaction (Savolainen, 2007). This study will be undertaken with three intended audiences, with three, mutually non-exclusive outcomes. The audiences are practice communities, policy-makers, and scholars, each with respective outcomes.

There are at least two practice communities that may benefit from this study: information professionals and community health workers. This project has the potential to impact information professionals by providing the necessary information about community health workers information practices in order to tailor outreach services, and structure information systems in order to improve access and reduce barriers. Information practices are learned social practices that are often difficult to change, and it has been argued that outreach structured to “meet the audience where they are” (as opposed to simply
advocating for behavior change) should be considered a best practice (Whitney et al., 2013). Other best practices include conducting a community needs assessment with the hope that outreach efforts will be better tailored to the community’s needs (Ottoson & Green, 2005; Whitney et al., 2013). Indeed, at the core of information outreach programs is an understanding of the community to be served. Ideally, both information professionals and community health workers will find areas to build relationships, learn from each other, and establish practices that are mutually beneficial.

Community health workers, as the second community that could benefit from this study, have the potential to gain awareness of resources, to establish reliable and convenient access to them, and to develop sustainable and meaningful relationships with other community organizations.

This study has the potential to provide evidence for policy change in information access and dissemination, and for the roles and responsibilities of community health workers. It is conceivable that community health worker information practices could be constrained by information access policies, their scope of practice (determined by the state and insurance companies), whether or not they have certifications (awarded by professional associations and ancillary organizations), or expectations from supervisors or employers. A rich understanding of information practices will provide advocates with evidence for policy changes if such a thing is desired by the community.

This study will seek to, broadly, unpack and understand the influence of information and information communication technologies on the health and wellbeing of communities and the individuals that reside in them. Despite being at the core of health science librarianship, the ability of the existing research to make this connection is tenuous
at best. Although a substantial body of research exists for information behavior, there are less studies that have taken an information practice approach, and thus, our understanding of information needs, seeking, barriers, and uses as embodied practices is incomplete.

1.3 Purpose of the Study

The purpose of this study is to, ultimately, better understand the information practices of community health workers in Eastern Kentucky in order for the health science and public library communities to position themselves to better serve this population of health professionals. Two research questions will serve to inform this overall goal.

1.4 Research Questions

R1: What are the information practices of the Kentucky Homeplace community health workers?

R2: What is the role of information communication technologies - such as mobile phones, computers, and the internet - in the access and management of information by Kentucky Homeplace community health workers?

1.5 Conceptual Framework

From the broadest perspective, this work is situated in the context of science and technology studies. As an interdisciplinary field, science and technology studies (or science, technology, and society research) incorporates scholarship from natural and biological science, human-computer interaction and computer sciences, arts and humanities, health and medicine, and of course, information science. Yet, science and technology studies “is constituted more by its oppositions and debates than by a single
theoretical paradigm, set of research questions, or canon of readings” (Roosth & Silbey, 2009). This theoretical and practical tension works well in the current context, because, as is described above, the current study sits at the confluence of three disciplines, lacking, for the most part, in any common or unifying theoretical foundation. Understanding the current study in the context of science and technology studies provides the ability to consider not only the socio-economic and socio-political spheres that help shape the construction of the community health worker, but also the socio-technical. It also allows for the recognition that information communication technologies possess agency, and that any complete understanding of a phenomenon would require the documentation of the relationship between those technologies and human actors. Lucy Suchman’s work, and that of her students, encourages us to investigate technologies, not as independent entities in labs, but situated in real life, as technologies-in-use (Suchman et al., 1999).

Below science and technology studies, we could place practice theories. Practice theories, social practice theory, or theories of social practice, (Reckwitz, 2002) provide an alternative to classical social theories that situate action within the individual. Social practice theory has historically been hard to clearly define (Cox, 2012) but, as a broad paradigm it, “decentres mind, text and conversation. Simultaneously, it shifts bodily movements, things, practical knowledge and routine to the centre of its vocabulary” (Reckwitz, 2002). Scholars such as Gherardi (Gherardi, 2009) and Cetina, Schatzki, and Savigny (Cetina et al., 2005) have done much to summarize and describe the common characteristics of practice theories. They describe a field which turns away from cognitive, rational decision making to one that gives primacy to routinized behavior shaped by bodily activities, forms of mental activities, things, and knowledge formed through understanding.
In other words: “A practice is thus a routinized way in which bodies are moved, objects are handled, subjects are treated, things are described and the world is understood...A practice is social, as it is a ‘type’ of behaving and understanding that appears at different locales and at different points of time and is carried out by different body/minds ” (Reckwitz, 2002). Social practice theory finds its origins in Bourdieu’s “praxeology” (Bourdieu, 1977), in Giddens’ theory of structuration (Giddens, 1979, 2013), and in Foucault’s later structuralism and post-structuralism works (Foucault, 2012; Reckwitz, 2002). Reckwitz places Garfinkel’s ethnomethodology work (Garfinkel, 1991), Butler’s performative gender studies (Butler, 2011), and Latour’s science studies (Latour, 2012), within the context of social practice theories, to which Cox (Cox, 2012) adds the community of practice literature of Lave, Wenger, Brown, and Duguid (Cox, 2012; Lave & Wenger, 1991; Wenger, 1999). Situating the current study within the context of social practice theory provides an understanding of the information practices of community health workers as routinized activities, manifested as professional practice, and which co-construct ways of knowing and being.

**Social Practice Theory**: a way of knowing and understanding which “decentres mind, text and conversation [and simultaneously] shifts bodily movements, things, practical knowledge and routine to the centre of its vocabulary” (Reckwitz, 2002).

Jean Lave and Etienne Wenger’s community of practice has been called the most familiar concept from social practice theory applied in information science (Cox, 2012). This framework will help unpack what it means to be a community health worker, in addition to how that community defines itself and its practice. While communities of practice were developed within learning communities, the framework has been applied, again, to a
diverse body of scholarship. Lave and Wenger describe three characteristics of communities of practice: a domain, a community, and a practice (Lave, 2011). The domain, according to them, is a continually negotiated and contested collective enterprise. That is, what defines the boundaries of the community of practice is “fluid” and constantly in flux. The community must have a common practice that binds or connects them to something what they call a “social entity,” and communities of practice must have a collection of shared resources, which they describe as routines, artifacts, vocabulary, or ways of acting.

Communities of practice: “...groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 1999).

Domain: “A community of practice...has an identity defined by a shared domain of interest. Membership therefore implies a commitment to the domain, and therefore a shared competence that distinguishes members from other people” (Wenger-Trayner & Wenger-Trayner, n.d.).

Community: “In pursuing their interest in their domain, members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other; they care about their standing with each other” (Wenger-Trayner & Wenger-Trayner, n.d.).

Practice: “A community of practice is not merely a community of interest-people who like certain kinds of movies, for instance. Members of a community of
practice are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems - in short, a shared practice” (Wenger-‐Trayner & Wenger-‐Trayner, n.d.).

Related to community of practice scholarship, and again, situated under science and technology studies, is the work defined by the concept “boundary objects.” Boundary objects are, according to Huvila and colleagues, translational devices that work to create boundaries within communities, and facilitate communication across communities (Huvila et al., 2017). Star and Griesemer’s claim that boundary objects make visible the sociotechnical contexts in which information practices take place is a direct contribution to the research being proposed with the information practices of community health workers, and is one in which highlights the connection to science and technology studies (Star & Griesemer, 1989). Boundary work is the ongoing process of maintaining and negotiating boundaries in a given context. Reynolds research on enacting notions of “community” shows that while physical geography is important to boundary work, so too are conceptualizations of identity (Reynolds, 2018). For community health workers, boundary work constitutes both their actual labor and identity maintenance. The very nature of the work community health workers do requires them to operate between the health care system and the community and thus work across boundaries.

*Boundary object:* “…objects which are both plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identify across sites. They are weakly structured in common use, and become strongly structured in individual-site use. They may be abstract of concrete. They have different meanings in different social worlds but their structure
is common enough to make them recognizable, a means of translation” (Star & Griesemer, 1989).

The concept of infomediaries, (alternatively, information mediaries, and info(r)mediaries) is a concept that recognizes much of the consumption of health information is through another individual. That is, information that is searched for, accessed, and disseminated by one individual, for another. Latour (Latour, 2005) defines mediators in relation to another class of individuals, intermediaries, which he describes as transport agents – as black boxes, serving only the one purpose, which is to transport. Mediators, on the other hand, “transform, translate, distort, and modify the meaning of the elements they are supposed to carry” (Latour, 2005). Wyatt, Harris, and Wathen (Wathen et al., 2008) extend this notion, and conceptualize “info(r)mediators” to “draw attention to those situations in which the human mediators convey information in order to effect change in the behavior or actions of those looking for information.” Examples of info(r)mediators could be socio-technical manifestations such as software or applications, family members or loved ones, or individuals serving in professional roles such as librarians or community health workers. Conceptualizing community health workers as infomediaries provide an interesting foundation for considering the information mediation activities in their roles as care workers and in providing a deep description of their information practices.

Infomediary: (also referred to as information mediators and info(r)mediaries)

“...people as well as various configurations of people and technologies, that perform the mediating work involved in enabling health information seekers to locate, retrieve, understand, cope with and use the information for which they are looking” (Wathen et al., 2008).
In summary, the current research seeks to understand the information practices of community health workers from within the broad umbrella of science and technology studies. A science and technology studies orientation provides the foundation to interrogate the social construction of community health workers through socio-economic, socio-political, and socio-technical systems, and it recognizes information communication technologies as equally important to understanding a phenomenon as human actors (R1). This study will view information practices of community health workers through the lens of social practice theory. The practice of being a community health worker will be described as routinized activities, manifested as professional practice, which co-construct ways of knowing and being (R1 and R2). This study will approach the domain, community, and practice of community health workers using the communities of practice framework (R1). The concept of boundary objects will help to understand community health workers identity maintenance as interstitial agents, and the labor of carrying information across boundaries (R1). Furthermore, understanding community health workers as information mediators provides an opportunity to interrogate non-human information communication technologies (R2).

1.6 Definition of Key Concepts

1.6.1 Community health worker

Perhaps the most common definition of community health worker is from the American Public Health Association’s Community Health Worker Section which states:

“A community health worker is a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served.
This trusting relationship enables the worker to serve as a liaison between health/social services and the community to facilitate access to services and improve the quality and cultural competency of service delivery. A community health worker also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy” (American Public Health Association, 2009).

Though the Kentucky Association of Community Health Workers adopted the APHA definition of community health workers with no changes, some community health worker organizations have adapted the definition to fit their own particular context. Minnesota's Community Health Worker Alliance, for instance, developed the following definition:

“Community Health Workers (CHWs) come from the communities they serve, building trust and vital relationships. This trusting relationship enables the CHWs to be effective links between their own communities and systems of care. This crucial relationship significantly lowers health disparities in Minnesota because CHWs: provide access to services, improve the quality and cultural competence of care, create an effective systems of chronic disease management, and increase the health knowledge and self-sufficiency of underserved populations” (Minnesota Community Health Worker Alliance, n.d.).

United States federal agencies have defined “community health worker” as well. The Health Resources and Services Administration (HRSA), Bureau of Health Professions, for
example, used the following definition in their 2007 National Workforce Study of community health workers:

“Community health workers are lay members of communities who work either for pay or as volunteers in association with the local health care system in both urban and rural environments and usually share ethnicity, language, socioeconomic status and life experiences with the community members they serve. They have been identified by many titles such as community health advisors, lay health advocates, “promotores(as),” outreach educators, community health representatives, peer health promoters, and peer health educators. CHWs offer interpretation and translation services, provide culturally appropriate health education and information, assist people in receiving the care they need, give informal counseling and guidance on health behaviors, advocate for individual and community health needs, and provide some direct services such as first aid and blood pressure screening” (Health Resources and Services Administration, 2007).

As highlighted by the HRSA report, there exist in literature and common parlance, dozens of terms to describe community health workers. These terms often draw attention to, or highlight a particular aspect of the community health worker. For example, “lay health worker” specifically designates the non-licensed aspect of the community health worker; “village health worker” signifies a specific geographic region; “community mental health worker” designates a particular service; “community-based health worker” indicates the individual’s work is based in the community, and the term “Promotora” is often used to characterize individuals who work with Latino populations. Terms such as Promotora and Agentes de Salud can also denote the country or region of origin of the community health
worker. Common to all variances in terminology are two things: the strong, trusted relationship between the individual and the community, and the interstitial role the individual plays in connecting the community to the health care system. A thorough examination of each role is not warranted by the current project, but because of common misconceptions between community health workers and patient navigators, some attention should be diverted, briefly, for a comparison of the two titles.

A patient navigator, according to the National Cancer Institute, is:

“A person who helps guide a patient through the health care system. This includes help going through the screening, diagnosis, treatment, and follow-up of a medical condition, such as cancer. A patient navigator helps patients communicate with their health care providers so they get the information they need to make decisions about their health care. Patient navigators may also help patients set up appointments for doctor visits and medical tests and get financial, legal, and social support. They may also work with insurance companies, employers, case managers, lawyers, and other who may have an effect on a patient's health care needs. Also called patient advocate.” (NCI Dictionary of Cancer Terms, 2011)

Patient navigators differ from community health workers in that the sufficient conditions for attributing the title are specialized knowledge of the health care system and work within the health care system. In this sense, a community health worker could act in the role of a patient navigator by providing assistance in the areas described above, but the community health worker would also have specialized knowledge of - and potentially be a member of - the community. Indeed, Rosenthal and colleagues consider “community health worker”
to be an umbrella which refers to “people alternatively known as outreach workers, promotores(as) de salud, community health representatives and patient navigators” (Rosenthal, 1998).

While Kentucky Homeplace does not explicitly define community health workers, their “About Kentucky Homeplace” web page describes who the organization’s community health workers are:

“Kentucky Homeplace lay health workers have the job title of Community Health Worker (CHW), which has become the preferred term for lay health workers. Homeplace CHWs are selected from the communities in which they live, usually being born and reared there. CHWs know their community and, because of this trust, develop and assure cultural sensitivity to the health disparities and special needs of the clients they serve and the values of health providers with whom they coordinate services.” (About Kentucky Homeplace | Center of Excellence in Rural Health, n.d.)

Further, they state what they do:

“CHWs are employed from the communities they serve and are trained as advocates to provide access to medical, social and environmental services and to deliver education on prevention and disease self management. Homeplace CHWs, as do most CHWs, have the objective of overcoming health inequities across physical, economic, social and cultural dimensions/ Kentucky Homeplace CHWs strive to overcome these barriers to improve access to health care for their clients and to assist them in acquiring crucial resources such as eyeglasses, dentures, home health
assistance, food, diabetic supplies, and free medical care. In all of their roles, Homeplace CHWs provide an important bridge between clients with the greatest needs and the primary care physicians and other health providers in the community. They facilitate communication between these clients and primary care physicians, help the clients learn to effectively comply with medical care instructions, and help educate clients to improve their health behaviors, such as improved nutrition, increased physical activity, better weight management, smoking cessation, and improved diabetes self-management.” (About Kentucky Homeplace | Center of Excellence in Rural Health, n.d.)

In all conceptualizations, community health workers embody an interstitial position between community and health care system.

1.6.2 Information practice

The origin of information practice research is intertwined with rich history of information behavior scholarship. Information behavior has its foundation in organizational and management research. Scholars were interested in, often, quantitatively explaining and predicting the antecedents to (productive) information seeking behavior, and examining the information needs, seeking behavior, and uses in specific organizational contexts. Underlying this research were post-positivistic assumptions that the world was observable from an objective perspective. Empirical research was often self-reported, survey-based, and oriented in theories that originated in behavioral psychology. These theories conceptualized information behavior as a cognitive exercise, located within an individual. In the 1970s and 1980s, scholars such as Dervin, and Kuhlthau expanded
notions of information seeking behavior to everyday information seeking, and sensemaking (Dervin, 1983; Kuhlthau, 1993). This was a radical shift in thought not only because it started to challenge the cognitivist paradigm, but also because they advocated for the importance of context. To be sure, Dervin’s work was still largely cognitivist, but it provided the cracks needed for other paradigms (e.g. interpretivist and constructivist) to be considered. The social constructionist conception of information behavior was one of those alternative paradigms.

Social constructionism, as a paradigm or metatheory, conceives information seeking and use not as a behavior – burdened by the cognitivist theoretical assumptions – but as a set of socially constructed practices (Savolainen, 2007). As such, information practices are produced and reproduced socially through language, talk, and interaction. Moreover, information practices are situated and embodied. Savolainen, a proponent of the information practice conceptualization, calls the distinction between information behavior and information practices a discursive difference, arguing that while scholars have diverging paradigms, they are, nevertheless, studying the same phenomenon (Savolainen, 2007). The constructionist perspective, however, replaces the cognitive-oriented information behavior by emphasizing the social practices of information seeking, retrieval, filtering, and synthesis. Savolainen describes Talja and Hansen’s (Talja & Hansen, 2006) articulation of information practices as “firmly embedded in...social practices.” He notes, further, that these practices “draw on the social practice of a community of practitioners, a sociotechnical infrastructure, and a common language” (Savolainen, 2007).
1.7 Organization

This study will be organized into the following chapters:

Chapter one introduces the study, provides a problem statement, the purpose of the study, and articulates the research questions. A discussion of the conceptual framework and its relation to the research questions follows. The chapter concludes with definition of two key terms: community health workers and information practices.

Chapter two describes the context in which Kentucky Homeplace community health workers are operating. It begins by reporting and describing how Appalachia, Kentucky, and the eastern part of the commonwealth measure relevant to what are considered to be the social determinants of health. Chapter two then describes the public health context by offering a brief history of public health as an institution. It then addresses how community health workers fit into the new model of public health. Chapter two then provides a history of the community health worker, beginning broadly, and concluding with Kentucky Homeplace. Following this discussion, chapter two addresses information practices and information mediation. Finally, chapter two concludes with a history of information outreach with special attention given to the history of health information outreach, broadly, public health information outreach, and information outreach efforts targeting Appalachia, and specifically eastern Kentucky.

Chapter three provides a description and justification for the chosen methods to address and unpack the research questions. This chapter provides the research design and discusses semi-structured, in-depth interviews, participant observation, and document analysis.
Chapter four provides the study’s findings from the research conducted with community health workers, leaders in the Kentucky Association of Community Health Workers (KYACHW), the Kentucky Department for Public Health (KDPH), and library directors from the 30-county Kentucky Homeplace service area.

Chapter five discusses the results in relation to the research questions and attempt to harmonize the findings, and will connect the findings to the frameworks set out in Chapters 1 and 2.
CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of literature relevant to the information practices of community health workers. First, the broader socio-economic context of Appalachia and eastern Kentucky is examined. Next, a history of the institution of public health is discussed, leading to how community health workers will operate in the new, Public Health 3.0 paradigm. Community health workers are then addressed, beginning with a history of the concept. Following the wider discussion of community health workers, in general, this chapter will discuss the profession from national, regional, and statewide perspectives. This section will conclude with a discussion of the community health workers at Kentucky Homeplace, and gaps in the community health worker literature related to the current study. The final section in Chapter 2 reviews the information practice approach. This section includes the history of the approach, extant research, and again, gaps in the literature related to the current project.

2.2 The Context

This section provides a perspective of Kentucky, particularly its eastern and Appalachian areas, through a social determinants lens. As part of a discussion on the definition of “health” Braveman and Gruskin describe social determinants of health as [including] household living conditions, conditions in communities and workplaces, and health care, along with policies and programmes affecting any of these factors” (Braveman et al., 2011). Healthy People 2020 defines them as “conditions in the environment in which people are born, live, learn, work, play, worship, and age that affect a wide range of health,
functioning, and quality-of-life outcomes and risks” (Koh et al., 2011; United States Department for Health and Human Services, n.d.). Healthy People includes five key areas of determinants: economic stability, education, social and community context, health and health care, and neighborhood and built environment. Although Healthy People 2020 is only one way to frame social determinants of health, it is the United States federal government’s prevention agenda. Among the goals of Healthy People 2020 are statements regarding the achievement of health equity, and the elimination of health disparities. The remainder of this section will utilize those five key areas of social determinants defined by Healthy People 2020 to discuss the socio-economic context of Appalachia and eastern Kentucky.

2.2.1 Economic Stability

Healthy People 2020 operationalizes economic stability as employment, food insecurity, housing instability, and poverty (United States Department for Health and Human Services, n.d.). The unemployment rate, represented by the percentage of civilian labor force, is higher in Appalachian Kentucky (8.3%) compared to both the non-Appalachian commonwealth (5.7%) and the national figure (6.1%). The unemployment rate has remained unchanged comparing 2012-2016 to 2007-2011 (Pollard & Jacobsen, 2012, 2018). Most workers in Appalachian Kentucky travel 15-29 minutes (67.1%), but over 7% of workers travel 60 minutes or more. This may be reflected in the 36.6% of workers ages 16 and older that work outside of their country of residence. In contrast, only 27.6% of workers in the United States and 31.5 in the entire Appalachian region. Kentucky’s Appalachian region also has the highest number of persons with a disability
(23.3%) compared to other states in the 13-state region (16.1%) (Pollard & Jacobsen, 2012).

2016 data from the United States Department of Agriculture, Economic Research Service using data from the US Census Bureau shows that rural earnings lower across all educational attainment categories (USDA ERS - Rural Education, n.d.). Kentucky’s Appalachian region has the lowest mean household income in the entire Appalachian region in 2012-2016. Kentucky’s Appalachian region has the highest rate of poverty (25.9%) in the entire Appalachian region (16.7%). This is a 1.1% increase between 2007-2011 and 2012-2016 (Pollard & Jacobsen, 2012, 2018). Nearly half (49.9%) of Kentucky’s Appalachian residents living in poverty are 200% below the poverty level and greater and almost an additional quarter (24.2%) are between 100%-199% of the poverty level (Pollard & Jacobsen, 2012). Overall, Kentucky’s poverty rate is the 5th highest in the country.

The Appalachian Regional Commission (ARC) defines the Appalachian Region as a “205,000-square-mile region that follows the spine of the Appalachian Mountains from southern New York to northern Mississippi” (The Appalachian Region—Appalachian Regional Commission, n.d.). It covers the entire state of West Virginia, and parts of Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. The region represents 420 counties across 13 states and is home to 25 million people, 42% of which are considered to be living in rural areas. 54 of Kentucky’s 120 counties are considered Appalachian by the ARC. These counties are: Adair, Bath, Bell, Boyd, Breathitt, Carter, Casey, Clark, Clay, Clinton, Cumberland, Edmonson, Elliott, Estill, Fleming, Floyd, Garrard, Green, Greenup, Harlan, Hart, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lewis,
Lincoln, McCreary, Madison, Magoffin, Martin, Menifee, Metcalfe, Monroe, Montgomery, Morgan, Nicholas, Owsley, Perry, Pike, Powell, Pulaski, Robertson, Rockcastle, Rowan, Russell, Wayne, Whitley, and Wolfe (The Appalachian Region—Appalachian Regional Commission, n.d.). Of the total 420 counties, 84 are considered Designated Distressed Counties. A Designated Distressed County is determined through an index-based county economic classification system employed by ARC. There are three economic indicators (three-year average unemployment rate, per capita market income, and poverty rate) that are summed and averaged to create a composite score for each county. “Distressed areas” are those which have a median family income no greater than 67% of the average in the United States, and a poverty rate 150% of the U.S. average or greater (County Economic Status and Distressed Areas in Appalachia—Appalachian Regional Commission, n.d.). 37 of the 84 counties considered Designated Distressed Counties by the Appalachian Regional Commission are in Kentucky’s Appalachian region. Yet, despite this fact, Kentucky had the largest proportion of “bright spots” (9 of 42) which are characterized as having “better-than-expected health outcomes given their characteristics and resource levels - that is, the socioeconomics, demographics, behaviors, health care facilities, and other factors that influence health outcomes” (Holmes et al., 2018).

2.2.2 Education

Education is operationalized by Health People 2020 in terms of early childhood education and development, enrollment in higher education, high school graduation, and language and literacy (United States Department for Health and Human Services, n.d.). More Kentuckians living in the Appalachian regions of the commonwealth have less than
a high school diploma (22.8% compared to 12.6%) for all persons aged 25 and older, but that percentage falls to 18.3% (10.4 in non-Appalachian Kentucky) for all persons aged 25-64. From another perspective, 37.6% of Appalachian Kentuckians aged 65 and older have less than a high school diploma. For all persons in Appalachian Kentucky 25 and older, this represents a 4.6% decrease from 2007-2011. A positive change is seen with the number of associate and bachelor’s degrees awarded between the two time periods (2007-2011 and 2012-2016). The majority of bachelor’s degrees in Appalachian Kentuckians are degrees in education (27.5%) followed closely by science and engineering (24.9%) (Pollard & Jacobsen, 2012, 2018).

2.2.3 Social and Community Context

Social and Community Context is operationalized as civic participation, discrimination, incarceration, and social cohesion. According to a 2016 report published by Kentucky’s Office of the Secretary of State in partnership with the National Conference on Citizenship, Western Kentucky University, and the McConnell Center, the commonwealth’s civic health is “on par” with the nation (Ardrey et al., 2011, 2016). While Kentuckians report higher rates of “seeing or hearing from friends and family” compared to the nation (78.6% to 75.7%), they fall behind in “trust most or all neighbors” (7.3% to 7.6%) and “work with neighbors to fix or improve something in the neighborhood” (54.3% to 55.8%) (Ardrey et al., 2016). Although compared to national rates, Kentuckians are less likely to volunteer, a small increase (from 22.7% to 24.9%) was seen from 2011 to 2014 (Ardrey et al., 2011, 2016). Overall, Kentucky residents report higher levels of confidence in public institutions than national rates (87% to 84.5% in 2013, and 90.1% to 88% in 2011). However, confidence in corporations and media are lower than national rates.
(63.5% to 64.5% and 46.0% to 55%, respectively). Kentucky’s part of the overall charges for discrimination is, on average, approximately 1.0%. Exceptions where the rates are greater than 1/0% include race (1.1%), religion (1.2%), and disability (1.1%), and genetic information (1.5%) (United States Equal Employment Opportunity Commission, n.d.). In terms of incarceration, Kentucky reports rates higher than the national average, and ranks 9th across all US states (Prison Policy Initiative, n.d.).

2.2.4 Health and Health Care

For Healthy People 2020, the Health and Health Care category includes access to health care, access to primary care, and health literacy. Kentucky reports nearly 1 out of 3 individuals are obese, and in 2017 the state had rates over the US average for both male and female adults over 18 (United Health Foundation, n.d.). Kentucky has consistently ranked as one of the lowest states for overall health (40th or below for 25 of the last 26 years) (Cabinet for Health and Family Services, Kentucky Department for Public Health, 2017). The Data from the 2016 Kentucky Behavioral Risk Factor Surveillance System show 24.5% of adults are current smokers (the US average is 17.5%), 29.8% of adults report physical inactivity, and Kentuckians report greater rates of poor mental health days (Cabinet for Health and Family Services, Kentucky Department for Public Health, 2017). Given these the overall health of Kentuckians, access to health care and primary care becomes even more important. Though statewide data on health literacy rates is not available, we do know that individuals who are older, have less than a high school degree or GED, have low income levels, and people with an already “compromised health status” are more likely to experience low health literacy and thus experience the associated

While Kentuckians without health care coverage is “far below” the national median, the 2017 Kentucky State Health Assessment Update reports that Kentucky residents without health care coverage is higher among individuals with less education and younger adults (Kentucky Department for Public Health, 2017). Findings from other insurance coverage assessments show that Kentucky’s rates have “substantially improved” across most race, gender, age, and income groups since 2012 (Kentucky Department for Public Health, 2017). While health care costs across the state have remained relatively unchanged from 2012, over 40% of Kentuckians report trouble paying for medical bills, 15.9% delayed care, and 13.1% went without care in 2013 (Nguyen & Sommers, 2016). Despite the number of individuals with health insurance increasing, the average for family and single premiums increased from 2012 to 2014 (Nguyen & Sommers, 2016).

2.2.5 Neighborhood and Built Environment

Access to foods that support healthy eating patterns, crime and violence, environmental conditions, and quality of housing are characteristics of the Healthy People 2020 conception of Neighborhood and Built Environment. In Kentucky, broadly, approximately 17% of the state’s population is food insecure (Kentucky Department for Agriculture, 2016). In 2016, that amounted to 743,310 people including 222,380 children. Although the rate dropped from 2011 to 2016, the commonwealth still exceeds the national rate of 15%. The Map the Meal Gap 2016 reports eleven counties having childhood food insecurity rates of 30% or higher. All eleven of those counties are in the Appalachian region of the state. According to the 2018 Kentucky Annual Economic Report (Bollinger et al.,
Kentucky’s crime rate for violent offenses are “well below” both national rates and those reported by 11 of the 12 “competitor” states (Virginia, West Virginia, Illinois, Ohio, Indiana, Mississippi, North Carolina, Montana, Georgia, Alabama, Tennessee, and South Carolina). Kentucky’s “mostly rural” counties report the lowest rate of serious criminal offenses, including arson, homicide, and sex offenses (Bollinger et al., 2018). 70.8% percent of occupied housing units in Appalachian Kentucky are owner-occupied and only 15.3% of all units are vacant (Pollard & Jacobsen, 2012). The National Survey of Children’s Health, which includes questions about litter, dilapidated housing, and vandalism estimates Kentucky’s rate of children living in neighborhoods with so-called “detracting elements” to be on par with national averages (Bollinger et al., 2018).

Addressing the social determinants of health in Kentucky and the Appalachian region requires understanding the greater public health context. The next section describes the historical development of public health as an institution, from “public health 1.0” to the present “public health 3.0” movement.

2.3 A Transition to Public Health

Despite per capita spending that is nearly double the rest of the Organization for Economic Cooperation and Development (OECD) industrialized countries (Anderson et al., 2003), the United States falls below peer countries in many of the leading causes of morbidity and mortality (Mathers et al., 2003). Furthermore, many of the current leading causes of death in the US are preventable. This paradox – that is, between costs and preventable death and disease – has prompted leaders in public health (and health care) to call for a radical restructuring of public health. Led by individuals at the US Department
for Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC), this new paradigm is being called “Public Health 3.0” (DeSalvo et al., 2016).

To appreciate the shift to Public Health 3.0, it is valuable to have an understanding of the past iterations, Public Health 1.0 and 2.0, if we carry the metaphor. DeSalvo and colleagues characterize Public Health 1.0 as the time during the last 19th and early 20th centuries (DeSalvo et al., 2016). During this time, there was tremendous success in eradicating disease with new antibiotics and vaccines. The public health sector was integral in the development of these antibiotics and vaccines, as well as their marketing and distribution. Indeed, the public health sector at that time, was the protector of the public’s health. Public Health had major success during this time (see, for instance, the CDC’s 10 Success of Public Health (Centers for Disease Control and Prevention, n.d.), and yet, with time, remarkable differences began to be seen across populations. There were differences across geographies (e.g. between rural and urban counterparts (Befort et al., 2012; Caldwell et al., 2016; Doogan et al., 2017; Harris & Mueller, 2013)), and across races/ethnicities (e.g. African-Americans had, and still have, higher mortality than white and Caucasian counterparts (Shiels et al., 2017)), and across economies (e.g. between large, well-funded health departments and smaller, less-funded ones (Mays et al., 2004)). As a result of these variances, the Institutes of Medicine - now called the National Academy of Medicine - produced a report in 1988 which established three fundamental purposes of public health (assessment, policy development, and assurance) (Institute of Medicine (US) Committee for the Study of the Future of Public Health, 1988). With the aid of the CDC, a group composed of key stakeholders from the public health sector developed a set of essential public health services that helped answer what public health is, what its relationship is with
the larger health care systems, and how to hold the public health system accountable through connecting performance and health outcomes. In conjunction with the National Public Health Performance Standards, the 10 Essential Public Health Services (Centers for Disease Control and Prevention, 2018) which were developed by those stakeholders were meant to establish consistency and accountability for the public health industry, and marked the transition to what we could call Public Health 2.0 (DeSalvo et al., 2016).

Public Health 2.0 was also marked by many successes. During this time, core competencies were established for the public health workforce (Council on Linkages Between Academia and Public Health Practice, 2014), and overt connections between academia and the practice of public health were established (see, for example, the Council on Linkages (Council on Linkages Between Academia and Public Health Practice, 2014; Petroro et al., 2011)). Nationwide strategic goals and objectives were set for public health (e.g. Healthy People 2000 and Healthy People 2010 (United States Department for Health and Human Services, 2000, 2010)). It was also during the Public Health 2.0 era that the Patient Protection and Affordable Care Act (ACA) was passed. The ACA had many effects on the delivery of public health services, but perhaps the most significant was that it reduced the number of uninsured individuals (Uberoi et al., 2016). In Kentucky alone, the uninsured rate fell from 25% to 12% during the first year of the ACA (Foundation for a Healthy Kentucky, 2017). This is significant because in addition to all its other efforts, which included prevention, health education, etc., the public health section had been mainly operating as a safety net provider of clinical services between Public Health 1.0 and 2.0. The ACA, and its insurance mandate, meant that individuals who were receiving clinical services through health departments and entities like Federally Qualified Health
Centers would now receive them in traditional health care settings. Combined with reductions to the nation’s Public Health Fund, this meant public health departments saw significant revenue reductions (DeSalvo et al., 2016). At the same time, the leading causes of morbidity and mortality shifted from diseases to behaviors. As a result of this convergence of events and circumstances, public health leaders began calling for a reorientation for public health, and thus, ushered in the Public Health 3.0 era.

2.4 Public Health 3.0

The key features of Public Health 3.0, as articulated by DeSalvo and colleagues, are: enhanced leadership and workforce; new strategic partnerships; the continuation and strengthening of public health accreditation; new technologies, tools, and data; and new metrics for success (DeSalvo et al., 2016). Each of these will be addressed below.

Enhanced leadership and workforce refers to a shift in thinking about the public health department as a safety net for public and population health to what is being termed as the “chief health strategist” (Office of the Assistant Secretary for Health, 2017). The chief health strategist is not necessarily one individual, but advocates for a particular role for the health department to play in the community. The chief health strategist will develop long-term goals and objectives for the community, and will lead (guide) the community in its efforts to achieve them.

New strategic partnerships are characterized by the establishment of partnerships that work to help achieve the goals set out by the chief health strategist. These partnerships are mutually beneficial relationships with public and private sector entities that are also intended to help reduce costs to the health care sector, and decrease readmission rates in
hospitals and mental health facilities. An example of such a partnership is the relationship not-for-profit hospitals were hoped to have established with health departments during the Public Health 2.0 era. Following the requirement that 501c3 hospitals would conduct community needs assessments - something public health departments are required to do as well - the public health community reached out to hospital systems to work together (Ainsworth et al., 2013; Prybil et al., 2016). The intended benefit was that not only would the two entities work on the needs assessment together, but would build strategic (goal oriented), long-term relationships as both ought to be focused on the health of the individuals and the communities in which they operate. Another example of these strategic partnerships exists as a result of the ACA, which encouraged the establishment of Affordable Care Organizations (ACO). ACOs are, in many cases, public-private partnerships meant to provide holistic care to individuals, and reduce the number of repetitive services, thus providing better quality of care, and reducing the cost to the individual and health care system, two aspects of the so-called “triple aim” of the ACA (Costich et al., 2015; Vogus & Singer, 2016).

The continuation and strengthening of public health accreditation follows a fairly recent development in public health to establish a formal accreditation process for health departments (Bender et al., 2014; Kronstadt et al., 2016). The Public Health Accreditation Board, which is the body that sets the standards and oversees the accreditation process, now accredits enough health departments that over 80% of the US population is covered by an accredited health department (Public Health Accreditation Board, 2020).

“New technologies, tools, and data that matter” refers to the establishment of systems that provide real-time data to health departments about their communities. As it
currently stands, most health departments must rely on data that is often at least a year old, and as a result, decision makers are meant to plan for the future with data from the past (DeSalvo et al., 2016; Office of the Assistant Secretary for Health, 2017). New technologies and tools would help to create systems to funnel data directly to health departments in order for them to reposition/reorient themselves quickly, and so that they are able to be proactive, as opposed to reactive.

Finally, establishing new metrics of success refers to the need to not only reduce the burden of disease in a community, but also to attend to the social determinants of health, which we know have a greater impact on health and wellbeing than do our traditional metrics (DeSalvo et al., 2016; Office of the Assistant Secretary for Health, 2017). The term social determinants of health refers to those system and environmental factors that contribute to the health of individuals and communities and include: education, race/ethnicity, employment, and geography (Braveman et al., 2011). Indeed, it is often cited that the zip code a person is born into has a greatest impact on that individual’s health than any other factor.

2.5 Community Health Workers

The American Public Health Association (APHA) defines a community health worker as “frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery” (American Public Health Association, 2009). Despite having an
authoritative definition, scholars continue to use a variety of terms to describe community health workers and their professional roles and responsibilities.

Historically, community health workers have been referred to by many different names – barefoot doctor, community health advisor, family advocate, health coach, health educator, health extension worker, health interpreter, lay health workers, liaison, outreach worker, patient navigator, peer counselor, Promotoras(es), Promotoras(es) de Salud, and public health aide – and provide a wide variety of health services, in an equally diverse set of environments (Brown et al., 2012; Hartzler et al., 2018; Love et al., 1997; Taylor et al., 2018). The common thread through all community health workers is their work outside traditional health care facilities and the connection the communities in which they serve.

Community health workers have been a largely volunteer workforce, supported by grants when possible. Despite overwhelming economic evidence for the cost-effectiveness and efficacy of community health worker programs (Brown et al., 2012; Jack et al., 2017; Prezio et al., 2014; Seidman & Atun, 2017), advocating for paid community health workers is still required (Cherrington et al., 2008, 2010; Lewin et al., 2005; Rhodes et al., 2007). As a result of their cost-effectiveness, community health workers are seen as a viable profession to shift some of the burden of an overworked health workforce.

There exists a large body of research on the positive impact community health workers have on patient outcomes. Community health workers have been linked to the management of hypertension and the reduction of cardiovascular risk factors (Brownstein et al., 2007; Love et al., 1997), in the management of diabetes (Policicchio & Dontje, 2018; Shah et al., 2013; Silverman et al., 2018) and HIV infection (Perry et al., 2014; Swider,
Currently, there is a wave of support and growth for community health workers programs in the United States (Balcazar et al., 2011; Sabo et al., 2017). Building on the research from low- and middle-income countries, policy makers in the United States see community health workers as a way to reach rural and underserved populations (Mock et al., 2017) and as a way to address health disparities and inequities (Balcazar et al., 2011; Barnett et al., 2018).

2.5.1 A Brief History of Community Health Workers

The origin of community health workers dates back to Ding Xian, China in the 1920s (Perry et al., 2014). After receiving three months of training, they were able to provide basic medical care and first aid, record vital statistics, administer vaccinations, and educate the communities they visited (Perry et al., 2014). From these community health workers grew the “barefoot doctor” program, which blossomed in the following decades. Sidel (Sidel, 1972) reports that by 1972, there were an estimated one million barefoot doctors operating in the People’s Republic of China.

During the 1960s, the community health worker model was adapted across the world to address the unique needs of many countries’ health systems. In 1978, a conference on Primary Health Care at Alma-Ata, Kazakhstan sponsored by the World Health Organization and the United Nations Children’s Fund. The resulting Declaration of Alma-Ata formally established a role for community health workers in the provision of primary care stating, “primary health care...relies, at local and referral levels, on health workers,
including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community” (World Health Organization, 1978).

2.5.2 Community Health Workers in the United States

In 2017, the Bureau of Labor Statistics reported an estimated 54,760 individuals are employed nationally as community health workers (Bureau of Labor Statistics, 2017). A national study of community health workers conducted in 1998 reported on seven core roles performed by the profession (Rosenthal, 1998). As of 2014, these roles had remained the gold standard for defining the field (National Center for Chronic Disease Prevention and Health Promotion, 2014). They are: 1) Culturally mediating between communities and the health care system; 2) Providing culturally appropriate and accessible health education and information, often by using popular education methods; 3) Ensuring that people get the services they need; 4) Providing informal counseling and social support; 5) Advocating for individuals and communities; 6) Providing direct services (such as basic first aid) and administering health screening tests; and 7) Building individual and community capacity (National Center for Chronic Disease Prevention and Health Promotion, 2014; Rosenthal et al., 2011).

The National Academy for State Health Policy has recently reported on data showing state activity in 47 states and the District of Columbia (with Wyoming, Tennessee, and Alabama reporting no activity) (National Academy for State Health Policy, 2015). Fifteen states are actively working to develop legislation, 42 states report an active state
agency under which community health workers operate (National Academy for State Health Policy, 2015).

The education and certification of community health workers has been an ongoing debate, and continues today, with many states moving forward with state-wide associations and special plan amendments (Association of State and Territorial Health Officials, 2017). In many cases, for community health workers to be considered a billable expense, there must first be a certifying body. Because community health workers agreed years ago to advocate for the inclusion of community health worker representation for decisions that would impact the field, the certifying bodies have tended to be the state-wide associations. With certification, ultimately comes educational requirements to meet the certification standards. While associations have been integral in educating their members, other organizations are stepping in to fill the need. In Kentucky, for instance, the Appalachian Kentucky Health Care Access Network is training community health workers to two standards: tier one, which includes “core requirements” meant to “be delivered to new CHWs as their first entry into the training process and covers material essential to all CHWs, regardless of their place of employment” (Appalachian Kentucky Health Care Access Network, 2020). The second tier of training, called “skill building” provides the “opportunity for deeper skill building. It covers materials that may be specific to the CHWs place of employment, population served, area of focus or individual need” (Appalachian Kentucky Health Care Access Network, 2020). Although Kentucky is still in the planning phase of its process to enable community health workers to be a billable expense, organizations like AKHCAN are already anticipating the need for instruction and positioning themselves to provide it once it is required. Certification of community health
workers is not a universally sought after objective, however. Critics argue certifying the workforce will create distance between the community health worker and the community. They believe a formal certification could lead to distrust of the position (Miller et al., 2014; Rush, 2012).

The National Association of Community Health Workers was formed in 2018 to “unite and represent community health workers...and their allies from other professions, in efforts to promote health equity, social justice, and improved health in diverse communities” (National Association of Community Health Workers, 2020). Among its eight organizational goals are “serving as a national clearinghouse for information about best practices, policy, training, and research;” “represent[ing] the workforce in policy development and advocacy;” and “provid[ing] training, networking opportunities, and other member services and benefits” (National Association of Community Health Workers, 2020). That these three items would comprise nearly half of the organizational goals is a testament to their importance in the field currently.

Financing community health worker initiatives, as briefly mentioned above, has historically been subsidized by volunteer work or grant support. Remuneration of community health workers, unlike the debate over certification and credentialing, has virtually one perspective. Though most agree on the principle that community health workers should be compensated for the work disagreement exists about the appropriate mechanism (Cherrington et al., 2008, 2010; Lewin et al., 2005; Rhodes et al., 2007).
2.5.3 Community health workers in Appalachia

Community health workers in Appalachia function similarly to their broader, national counterparts. They have been reported to act as liaisons between health care systems and their communities, perform transition of care duties, work with clients to establish proper diabetes self management and oral health habits, they work with clients to provide maternal and child health by connecting them to social services and culturally appropriate health care, they work with refugees and immigrants to access care, they work with screening programs, vaccination programs, smoking cessation programs, and much more. Programs such as the Pine Apple Heart Disease and Stroke Project (Kuhajda et al., 2006) and the Faith Moves Mountains (Schoenberg et al., 2009) project set out, specifically, to reduce health disparities among Appalachian residents.

2.5.4 Community Health Workers in Kentucky

The Bureau of Labor Statistics reports approximately 670-1,260 community health workers employed in Kentucky (Bureau of Labor Statistics, 2017). The eastern and Appalachian region of the commonwealth represents the second largest population of community health workers, employing approximately 130 individuals (behind only the Louisville/Jefferson county area, in which approximately 500 individuals are employed as community health workers) (Bureau of Labor Statistics, 2017). They earn an annual mean wage between $23,930-$37,560, which represents the Bureau’s lowest wage category for community health workers. Community health workers in Kentucky operate under similar constraints as their regional and national peers. They are wrestling with similar problems of funding, training, and certification, and, in large part, their roles are similar as well.
Community health workers are located throughout Kentucky, both in rural and urban areas, and work in collaboration with hospital systems, primary care facilities, and public health institutions. Many national trends regarding community health workers are reflected in Kentucky. For instance, most community health workers are funded through grants, a training program is in the process of being developed, a state workgroup composed of constituents from multiple sectors is working to develop a certification plan and curriculum, and the state does not currently have any legislation that defines the role or provide a formal funding mechanism for community health workers. Kentucky does have an active association (the Kentucky Association of Community Health Workers) which advocates and promotes the profession in the commonwealth and has since 2016 coordinated an annual conference.

2.5.5 Kentucky Homeplace

In 1994, the University of Kentucky Center for Excellence in Rural Health based in Hazard, Kentucky, established a community health worker demonstration project in 14 eastern Kentucky counties. Today, the project now called Kentucky Homeplace, strives to provide access to medical, social, and environmental services to residents of 30 counties. Kentucky Homeplace characterizes their clients as “the neediest of the needy.” Most are 100%-133% of the federal poverty level, and live in medically underserved areas. Kentucky Homeplace has helped build the evidence for the effectiveness of the role community health workers play in readmission rates (Cardarelli et al., 2018), in providing outreach and education for colorectal cancer screening (Feltner et al., 2012), in identifying community perspectives for lung cancer screening (Cardarelli et al., 2017), in improving diabetes outcomes (Feltner et al., 2017), and in providing culturally appropriate health
services (Schoenberg et al., 2001). Indeed, a substantial corpus of literature has been published regarding the efficiency and effectiveness of community health workers, in general (Khetan et al., 2017; Perry et al., 2014; Swider, 2002). However, little is known about their information needs, seeking, and barriers. This study intends to fill that gap through a deep understanding of the information practices of a group of community health workers in eastern Kentucky.

2.6 Information Practices

2.6.1 The Roots of Information Practices

Historically, a number of conceptual frameworks have been proposed to examine what can broadly be described as a constellation of information needs, seeking, barriers, and uses research (Pettigrew et al., 2001). These include cognitive approaches such as Belkin (Belkin, 1984), Taylor (Taylor, 1968), Kuhlthau (Kuhlthau, 1993), and Ellis’ (Ellis, 1989) which focus on how individual attributes impact information behavior; social approaches such as Chatman and Pendleton (Chatman & Pendleton, 1995), and Tuominen and Savolainen’s (Tuominen & Savolainen, 1997) work which emphasize social, sociocultural, and sociolinguistic properties of information behavior; multifaceted, contextual approaches such as Johnson and colleague’s (Johnson et al., 1995) which derived propositions from uses and gratifications theory and the health belief model; Sonnenwald and colleagues’ (Sonnenwald et al., 2001) work incorporating social network theory with communication, sociology, and psychology theories; and highly contextualized, post-constructivist approaches such as Dervin’s (Dervin, 1983) sense-making approach (Pettigrew et al., 2001). The turn from cognitive and behavioral-based
information research follows the broader practice turn in contemporary theory. While an agreed upon definition of practice theory has been elusive, Cox (Cox, 2012), citing Reckwitz, describes it as a theory which “decentres the mind, texts and conversation [while] it shifts bodily movement, things, practical knowledge and routine to the centre of its vocabulary” (Reckwitz, 2002). As late as 2016, scholars still considered embodied information practices research to be a rare exception to the dominant information behavior paradigm (Olsson & Lloyd, 2017). Nevertheless, there is a growing body of literature (Olsson & Lloyd, 2017) that moves the focus from cognitive and behavioral based information research to information practices. According to Olsson and Lloyd, this research “acts as a critical alternative to information behavior, focusing on the intersubjective experiences of people who are acting, working, performing or participating in shared endeavors” (Olsson & Lloyd, 2017). Recently, Veinot articulated a social practice approach that arises from the confluence of practice theory (Veinot & Williams, 2012) and community sociology (Veinot, 2007). Social practice theory takes “practice” or, set of actions, as the basic unit of analysis. Practices are both embodied, in that they emphasize know-how, skills, tacit understanding, and dispositions (Cetina et al., 2005), and are situated, in that practice is context-specific. Together, embodiment and situation create “a vision of a specific, sensual now in which practice occurs and a resource of embodied knowledge available to that practice” (Veinot, 2017). Social practice theory rejects constructivist individualism, and provides a unique lens for characterizing and understanding information practices of individuals within particular contexts. Information practice is thus a social practice.
Inextricably embedded within these social practices are information communication technologies (ICTs). Information communication technologies are regularly used by health professionals to access and manage information. However, the types of ICTs, and the ways in which they are used tend to vary across professions and are context-specific. For instance, a review of mobile health (mHealth) technologies to provide health services and manage patient information in low- and middle-income countries determined that health care workers used ICTs to disseminate clinical updates, educate themselves, and set reminders (Källander et al., 2013). Similarly, Dixon and colleagues conducted a two-year review of public health and informatics literature to determine the ways in which epidemiologists used ICTs, and mapped the results to the 10 Essential Public Health Services. They determined that “several” areas benefited, but primarily “Monitor Health,” “Diagnose and Investigate,” and “Evaluate.” The differences captured by those categories is indicative of the variety of ways even the same professional role can utilize ICTs (Dixon et al., 2015). Multiple systematic reviews have been conducted investigating so-called mHealth and eHealth projects with communication health workers. Braun and colleagues report the most common uses of mobile technology among community health workers include: collecting field-based health data, receiving alerts and reminders, facilitating health education sessions, and conducting person-to-person communication (Braun et al., 2013). Agarwal and colleagues’ review of frontline health workers in developing countries reports similar uses, adding training and decision support, emergency referrals, and supervision of health care workers (Agarwal et al., 2015). As information professionals, librarians have historically used ICTs in reference and outreach to health professionals. For instance, Humphreys (Humphreys, 1998) and others’ work conducting
outreach to public health practitioners cited a lack of technology and the cost of online services as barriers to information access. Due in part to those studies, many of the subsequent outreach programs included various forms of connectivity and training, such as the use of desktop computers for access to the world wide web (Humphreys, 1998). Nearly two decades later, Hamasu and Bramble (Hamasu & Bramble, 2015) evaluated the use of the mobile tablets by librarians in hospital and academic health science libraries. Results indicated librarians used the tablets for “productivity actives” such as note taking, keeping up with email, and maintaining calendars, and “point of need services” such as answering reference questions, demonstrating resources, and instructing a patron how to access information. In another study, Wallace, Woodward and Clamon utilized similar technology to conduct outreach with rural clinicians and found that clinicians who were equipped with hand-held devices “more frequently found answers to clinical questions, found answers more quickly, were more satisfied with information they found and use[d] expensive resources such as continuing medical education, online databases and textbooks less than the group that did not have access to online technology” (Wallace et al., 2014). The variances across, and among, professions means that providing a deep description of community health worker information practices - and ultimately, developing any targeted intervention - must include an evaluation of ICT use for information access and management.

2.6.2 Gaps in Information Practice Literature

Extant literature defines two, general gaps in information practice research. The first need is with further theoretical development. This type of research is not necessarily the development of social practice theory, but rather, the role of information in social
practice. Cox exemplifies this type of need, saying, “It seems, therefore, more apt to thing in terms of ‘information in social practice’...Thus many social practices involve information seeking and sharing, information management, information creation and information literacy, but what that information is, where it is sought, how it is shared, how it is managed and evaluated, whether it is even seen as ‘information’ or called that varies dependent on the flavour of the practice concerned” (Cox, 2012). The second need in information research originates from the contextual and embodied nature of information practices. Olsson and Lloyd (with a quote from Lloyd, 2015 (Lloyd, 2015)) characterize this need, stating, “This leads to questions about embodiment and embodied information practices that must have ‘information at their core.’ Questions about...the relationship between corporeal information, information behavior and information practice [and] how to access and capture the local nuanced information that is contingent and only available at the moment of practice” (Olsson & Lloyd, 2017). The current study will address those needs through an examination of the information practices of community health workers. Through this specific context, the social practice of information will be documented. It will illuminate how information seeking, sharing, management, creation, and literacy are woven together with conceptions of information, where it is sought, how it is shared, and how it is managed and evaluated.

The methods of this study, described in the following chapter, will illustrate ways to capture those embodied practices, and to describe the local nuanced information environment while addressing the three research questions stated in Chapter 1. However, the first step in understanding information practices is to understand the information field in which an individual exists. For community health workers, and health professionals in
general, this includes the long history of health information outreach coordinated by the National Library of Medicine and its regional offices the National Network of Libraries of Medicine. For residents of eastern Kentucky, it includes the history of information outreach to rural Kentuckians. The following section provides this critical aspect of the information field in which community health workers at Kentucky Homeplace situate their information practices.

2.7 The Information Field

The commonwealth of Kentucky has a long history of information outreach initiatives. The following sections presents highlights from this history, focusing mainly on events that have shaped the current information environment, including events outside the state that have made significant impacts. In the late 1800’s the Kentucky Federation of Women’s Clubs established a set of library extension services as a response to what they perceived was a lack of education and low literacy rates in Appalachia (Boyd, 2007). The initial efforts were targeted at women, and were called Home Reading Circles. This type of program followed a pattern of philanthropic projects sponsored by women’s clubs. The largely urban, newly educated and empowered women during this time advocated, raised money, and created programs that would support the education and health of Appalachian Kentucky (Boyd, 2007).

In 1905, the Federation of Women’s Clubs established the Traveling Libraries program, succeeding the Home Reading Circles (Boyd, 2007). These consisted of large crates of books that would be dropped off, picked up, and moved to another location. The Kentucky Library Commission was established in 1910 and in 1911, the Federation of
Women’s Clubs transferred the Traveling Libraries program to the Library Commission. Five years later, Kentucky’s first book wagon service for Appalachia was started by Berea College. Religion was tied up with the desire to have a literate population with access to books. Bibles, for instance, were included in the wagon, and a donor was reported to have said, “no house along the routes of the book-wagon should be without a Bible” (Boyd, 2007). The book-wagon program continued until 1923, growing from approximately 1,100 books in 1916 to almost 5,000 in 1921.

In 1936, Elizabeth Fullerton, state director of women’s and professional projects, established the Pack Horse Library Project out of the Works Progress Administration (WPA) - the Works Progress Administration was part of Franklin D. Roosevelt’s New Deal. The Pack Horse Library Project was a program that enabled librarians to deliver books and magazines to the “most remote and economically distressed” counties in Kentucky. Because the Pack Horse Library Project was funded by the WPA, employees were required to be local. According to Boyd (Boyd, 2007), the nature of local hiring also “served to provide a familiar face to the otherwise distrustful mountain folk.” While this statement is likely over-simplistic in its characterization of the residents of Eastern Kentucky, the same argument is made with community health workers. It may, perhaps, have been the case that “mountain folk” weren’t particularly distrustful, but that program organizers stumbled into a simple case of homophily or another phenomenon. For instance, Boyd also claims that the ability of the librarians to read Bible passages to households “delivered faith into the living rooms of Appalachia as a means of gaining trust.” Regardless of the reason, by 1939, only three years after the start of the Pack Horse Library
Project, 48 of Kentucky’s 120 counties would have established programs. The project was discontinued in 1943, but by then, that type of outreach had become commonplace, and was used not only for the distribution of books and reading material, but also news, medicine, and messages about births, deaths, or the need for midwife (Boyd, 2007).

Kentucky Representative Carl D. Perkins (Democrat, Kentucky’s 7th District) introduced legislation in 1956 that provided federal funding to public libraries, specifically bookmobile services to underserved areas not just in Kentucky, but across the country. The following year, the Kentucky Department of Libraries received funding as a result of Representative Perkins’ bill and library extension programs restarted (Boyd, 2007).

Initiatives like the Pack Horse Librarian Library Project and Perkins’ bill established the relationship between central and eastern Kentucky, and as will be shown, were part of the foundation for health information outreach projects in the late 20th and early 21st centuries.

2.7.1 Outreach to Rural Kentuckians

In general, health information outreach has taken two forms: outreach to health care professionals, and outreach to consumers (Duhon & Jameson, 2013). Outreach to health care professionals has often been in support of their clinical and research activities, and has included instruction for health science literature resources, access to content at discounted rates, and reference/research assistance. For consumers (general public and patients), outreach has typically included education about consumer health resources, and, more recently, initiatives to address low health literacy. While encompassing a number activities, outreach can be broadly defined as efforts “to reach as many patrons as possible in an effort
to inform them about authoritative resources, which may be beyond their awareness or means to access” (Duhon & Jameson, 2013). The following attempts to describe high points through the health science library community’s outreach efforts. It is, by no mean, comprehensive, but rather, meant to illustrate programs.

As early as 1924, Package Libraries were being distributed by the Library of the American Medical Association (Pifalo, 2000). In 1948, the Medical Library Association presented the results of a member survey which suggested rural physicians relied on a host of external organizations (for example, state medical libraries, medical school extension services, state association lending libraries) for access to medical literature (Crawford, 1949). Though it was not until 1988 that the Board of Regents of the National Library of Medicine called for a formal panel to recommend steps to improve the dissemination of biomedical information (Pifalo, 2000), projects such as the Cleveland Clinic’s circuit rider librarians and Grateful Med had already long been underway.

2.7.2 Area Health Education Centers and Regional Medical Libraries

The Area Health Education Centers (AHEC) program was developed by the US Congress in 1971, which intended for the centers to recruit, train, and assist in the retention of health professionals dedicated to underserved populations. There are 56 AHEC programs with over 200 centers operating in nearly every state and the District of Columbia in collaboration with 120 medical schools and 600 nursing and allied health schools. Library programs have “often been an important component of AHEC projects” (McDuffee, 2000). Concurrent with the development of the AHECs, the National Library of Medicine established their Regional Medical Library (RML) network. RMLs were meant to decentralize the dissemination of medical literature while providing opportunities
for staff training, collection development, and consortia building (Crawford, 1949; McDuffee, 2000; Pifalo, 2000).

2.7.3 Circuit Rider Librarians

The first circuit rider librarian program was developed in 1973 by Robert G. Cheshier and Sylvia Feuer at the Cleveland Health Sciences Library (Feuer, 1977). The purpose of the project was to provide regional hospitals without library services, with a qualified medical librarian and library services through a shared-cost model. By partnering with the Cleveland Medical Library Association, the librarians at Case Western Reserve University would provide collection development, technical services, development consultation, and reference services to hospital staff. The first program enlisted one librarian to serve five community hospitals in northeastern Ohio, but by 1981, it had grown to nine librarians and twenty-three hospitals in Ohio. Soon after, programs in California, Maine, New York, North Carolina, and Pennsylvania were formed (Feuer, 1977). Initially, these programs were established using a cost-sharing membership fee, but as usage expanded, programs were forced to assess a basic fee and charge for all transactions. The circuit rider programs had, inadvertently, developed a fee-for-service hospital library. Responding to the success of the circuit rider program model in 1982, Gordner predicted outreach to nursing homes and other health institutions lacking library services would increase depending on demographic and geographic restrictions (Gordner, 1982).

2.7.4 Public Health Outreach

As an institution, the health science library community has been largely unable to meet the information needs of the public health workforce. This is despite decades of
attempts by national and regional libraries to address that disconnect between information resources and their use by the public health community. During the mid-1990s the National Library of Medicine (NLM) partnered with their regional counterparts, the National Networks of Libraries of Medicine, to establish a program seeking to understand the information needs, seeking behavior, and uses of the public health community (Humphreys, 1998; Rambo et al., 2001). These efforts were modeled on similar programs in hospitals following the development and deployment of an online, end-user oriented version of NLM’s MEDLINE. As such, the first step was to conduct a needs assessment. In the public health community, as with the previous efforts in hospitals, the most pressing need was a computer and a connection to the Internet. Following the procurement of those, it was established there needed to be someone at the health department who could operate the computer, and further, search and retrieve health information, which in turn, required training. This model - needs assessment, technical solution, education on the technical solution – failed to achieve the desired outcome: use of the best information possible for the treatment of individuals and the creation of programs for the health of communities. However, they did yield some important data. Of particular interest is that they established the vast heterogeneity of information needs in the public health workforce. Public health administrators, for example, were concerned with high-level programmatic decision-making, whereas the average public health worker was more concerned with addressing the immediate needs of their community (Rambo et al., 2001). Information needs were found to be based not just on role, but on educational attainment, years in the workforce, what type of access was available (which was often impacted by cost, and explained by economies of scale), and administrative culture (whether, for instance, evidence-based
decision making was a priority or not). A key finding reflected in the earlier hospital studies was that access, for whatever reason, did not equate to use (LaPelle et al., 2006, 2014; Revere et al., 2007; Turner et al., 2008). Perhaps the most critical aspect of these studies was that they highlighted the need to understand the unique information needs, barriers, uses and particular contexts in which these were being applied. In essence, these studies emphasized understanding information practices. The next chapter will describe the methods proposed to understand the information practices of the community health workers at Kentucky Homeplace.
3.1 Introduction

The research questions and conceptual framework articulated in Chapter 1 establish the rationale for the methods of this study. Broadly, this study sought to understand the information practices of Kentucky Homeplace community health workers. At this micro-level, information practices are situated, embodied, and produced/reproduced by individuals. Therefore, semi-structured, in-depth interviews and participant observation with community health workers were conducted for R1 and R2. However, social practice theory, and constructionism in general, recognizes that microcosms are, in turn, situated within meso- and macrocosmic communities, and thus, practices are socio-cultural and political. The proposed observational fieldwork helped to establish an understanding of the information field and will inform the interview phase of the research. To understand the socio-cultural context and political ecology in which community health workers operate, semi-structured, in-depth interviews have been conducted with community health worker administrators, state public health officials, and leaders from the statewide community health worker association. These interviews, it will be shown, address R1. To further understand the socio-cultural and political context, documents critical to the construction of community health workers’ roles, responsibilities, and authority, have been analyzed. In addition, to fully understand the information environment in which community health workers operate, semi-structured interviews have been conducted with directors of public libraries in the 30-county area Kentucky Homeplace covers as well as librarians at regional academic and health science libraries. The remainder of this chapter is organized by method, first addressing participant observation, followed by interviews, and finally
document analysis. Following those sections, data security will be addressed briefly. This chapter concludes with a section on reflexivity, and the need for the continuous review and, when necessary, revision of methods.

Both interviews and observational fieldwork depend on relationships and trust. The relationships for this project began in 2014 during the planning stages of the first convening of community health workers from across the state. This summit, sponsored by the Foundation for Health Kentucky and KentuckyOne Health, a state-wide health system, gave community health workers in Kentucky an opportunity to be involved in the conversations at the state health department and across the country, about issues related to community health workers. I was fortunate to have been part of planning conversations and was asked to facilitate focus groups during the summit. I situate the beginning of trust-building for this project at that summit. During the planning meetings for the summit and future meetings the state health department convened, I was able to be present, to listen, and to help when possible. Two of the significant outcomes of the initial summit of Kentucky community health workers were the establishment of the Kentucky Association of Community Health Workers, and it served as a catalyst for the Annual Community Health Worker Conference in Kentucky. The work that was initially spearheaded by Foundation for Health Kentucky was taken up by Dr. Connie White at the Kentucky Department for Public Health (KDPH). Determined to maintain the momentum from the initial summit, Dr. White established a workgroup at KDPH to guide the development of a statewide association, to discuss the training and credentialing of community health workers, and to work to develop a mechanism to allow the work community health workers perform to be a billable expense. All of these events and initiatives provided the
opportunity to be present, to listen, and again, to help when possible, but they also helped
to establish necessary relationships with gatekeepers, thought leaders, and a variety of
stakeholders concerned with issues related community health workers in Kentucky. Studies
have shown that these types of relationships are critical to the success of health research
conducted in rural areas, for outreach efforts conducted by libraries, and in community
informatics research (Mishra, 2014; Whitney et al., 2013, 2017).

3.2 Reflexivity and Positionality

This study will be utilizing a reflexive methodology, which represents an approach
to qualitative data analysis that requires the researcher to embrace and disclose
preconceived theoretical notions and to review and revise the use of particular theories and
frameworks, when appropriate (Alvesson & Sköldberg, 2017). Furthermore, reflexive
methods support a grounded theory approach, and thus enable not only the revisiting of
current theory, but the development of new theories as well. Broadly, the reflexive
approach recognizes and embraces the relationship between knowledge and “the ways of
doing knowledge.” Citing Bourdieu and Wacquant (Bourdieu & Wacquant, 1992),
Alversson and Skoldberg (Alvesson & Sköldberg, 2017) describe three different forms of
reflective, or reflexive, research. The first, as represented by Gouldner and Giddens and
Bourdieu’s own work includes ethnomethodological ethnography as text, social science
studies of the natural sciences, and postmodern sociology. The second form of reflexivity
described by Alversson and Skoldberg is represented by Ashmore, Lynch, and Woolgar
(Ashmore, 1989; Lynch, 2000; Woolgar, 1988). This line of research is described as
primarily sociologies of knowledge. Kuehner and colleagues’ work represents the third
form of reflexive research, which embraces the use of subjectivity in examinations of social
and psychosocial phenomena (Kuehner et al., 2016). This study primarily operates with the third conceptualization. The current study defines reflexivity as:

Reflexivity: “...a (re)construction of the social reality in which researchers both interact with the agents researched, and, actively interpreting, continually create images for themselves and for others: images which selectively highlight certain claims as to how conditions and processes - experiences, situations, relations - can be understood, thus suppressing alternative interpretations.” (Alvesson & Sköldberg, 2017).

An important aspect of reflexivity is the researcher’s own disclosure of his or her position as it relates to the study. Positionality statements allow the researcher to reflect on their preconceived notions, to create transparency, and to embrace the subjectivity of observation and research. In addition to the theoretical and conceptual sensitivities stated in Chapter 1, the following provides personal disclosure of the author’s perspective of the region, and personal philosophy as it relates to the practice and purpose of librarianship.

My work with community health workers began after a series of chance events and revelations that arose during other projects I was working on while at the Medical Center Library (MCL) at the University of Kentucky (UK). As the Public Health Librarian for the UK MCL, and partially as a result of the work I had conducted for my master’s thesis, I became involved in statewide conversations to establish a coalition of organizations around health literacy. These conversations ultimately resulted in the formation of Health Literacy Kentucky (https://kyvoicesforhealth.org/hlk/), a non-profit, non-partisan organization comprised of stakeholders from across health care, education, public health, and a variety of other sectors. It was during my work with Health Literacy Kentucky that I learned about
patient navigators. I was fascinated by the work the navigators do to connect patients to community resources, and was struck by the parallels I saw to the work that I was doing as a librarian. While conducting a series of in-depth interviews with patient navigators, though, I found that some (at the very least, those I was working with) were more concerned moving patients through a protocol than connecting to the patient. A chance meeting about patient navigators put me in touch with Dr. Fran Feltner, the Director of the UK Center of Excellence in Rural Health and the Principle Investigator for Kentucky Homeplace. That conversation with Dr. Feltner led me to being involved in the early stages of work being conducted at Foundation for Health Kentucky, led by Gabriela Alcalde, to establish an association of community health workers for the Commonwealth (see: Alcalde, 2014). It was during the planning meetings for that convening that I began introducing myself as a librarian from UK, someone who was there to help in any way that I could, and also as a doctoral student, who may, at some point, ask to work with community health workers on a research project. For years, at any time I introduced myself, I would say the same thing: I’m here to help, but remember, I’m also a PhD student who may ask to work with you on a project at some point. I built relationships with leaders at Kentucky Homeplace, at the state public health department, and among community health workers. So, when in late 2018 I contacted Dr. Feltner to ask if I could have a conversation about working with the Kentucky Homeplace community health workers, I was not entirely unfamiliar, but, as I will describe below, still an outsider.

Eastern Kentucky has had its fair share of outsiders coming into the region to study some aspect - its resources, its health, its people - and then leaving without providing anything in return (Cross, 2018). I am, as I described above, one of those outsiders.
However, I do hope that this study will produce findings that will facilitate relationships between community health workers practicing in eastern Kentucky with communities that specialize in the organization and dissemination of information. I did not grow up in eastern Kentucky, or anywhere in Kentucky for that matter. I was born in the northeast and spent my childhood moving across the country and back again until landing in southeastern Tennessee. I recognize that I am an outsider to many in eastern Kentucky and that it is not only as a reflection of where I was raised. The populations Kentucky Homeplace serves are, as they say, the “neediest of the needy” and both my education and income reveal me to be an outsider. I recognize that eastern Kentucky, and Appalachia in general, has been fetishized by researchers, journalists, and general public. Admittedly, I am fascinated with Appalachian culture - I enjoy Appalachian folk stories and music, for instance - but I also recognize that “Appalachia” is neither a monolithic term, nor can it be represented by products (folk stories, bluegrass music, coal). Similarly, “Eastern Kentucky” is not either. With its 30-county area, the description of the population Kentucky Homeplace begs to be considered from a microcosmic level rather than as a region or single story. Indeed, it is my hope that with this work, I am able to illustrate the individuality and uniqueness of the study’s participants, all the while communicating something broadly about information practices and community health workers. I come to this project as an outsider, but also as someone who has a genuine curiosity for these stories, and as an information professional. As an information professional I am sensitized to information needs. During years as a practicing librarian, I worked to change the ways in which we organize and disseminate information, rather than solely working to change the information behavior of our patrons. As with my outsider status, I acknowledge this philosophy, and must intentionally bracket
it off while engaging with research participants. My intention is not to judge or prescribe, but to understand.

3.3 Observational Fieldwork

Perhaps the best way to develop an understanding of the lived experiences of other individuals is actually observe that experience – participant observation affords that very thing. Observational fieldwork provides the opportunity to learn about a phenomenon, as much as possible as a participant observer, in its naturally occurring state. It has the potential to provide insight not available through other methods. Participant observation and similar methods have a long history as a method for understanding individual and community information seeking behavior and is a good fit epistemologically and ontologically. Examples of ethnographic fieldwork used in information practice research include Olsson’s work with archaeologists (Olsson, 2016), theatre companies (Olsson, 2010), car restorers (Lloyd & Olsson, 2019), and martial artists (Olsson & Hansson, 2019). In addition, much of Llyod’s work (Lloyd, 2015), McKenzie’s work (McKenzie, 2003), and others (Jarrahi & Thomson, 2017; Savolainen, 2008) use similar methods. A small body of literature exists using participant observation with community health workers (see, for example, Harvey and colleagues (Harvey et al., 2008) and Kobetz and colleagues (Kobetz et al., 2009)).

There is, however, a body of literature cautioning researchers on the use of ethnographic methods in information practice research (D. E. Forsythe, 1998; Diana E. Forsythe, 1999). These arguments advocate for the careful consideration of ethnographic methods, and highlight the difficulty in conducting ethnographic analysis. While
Forsythe’s work may provide caution, Laves’ scholarship offers support by describing how she still finds errors in her earlier work, and that she is still growing after decades of ethnographic practice (Lave, 2011). Indeed, conceptualized as practice, ethnographic methods allow and inspire researchers to continually explore, learn, and grow as individuals and professionals with their research.

In addition to its difficulty, observational fieldwork has several limitations. Participant observation and its analysis takes considerable time. Moreover, researchers run the risk of being seen as outsiders, and not to be trusted. This is particularly powerful in Eastern Kentucky, which, as a region, has experienced many instances of researchers from the University of Kentucky and other outside institutions use the community to conduct research, and then are never seen or heard from again. To be sure, this phenomenon is not unique to Eastern Kentucky, a substantial body of literature exists criticizing the methods of “helicopter researchers” (Dang et al., 2018). At a recent Appalachian Translational Research Network Summit (Appalachian Translational Research Network 2018 Summit | UK Center for Clinical and Translation Science, n.d.), Scott Lockard, Director of the Kentucky River District Health Department said during a session on collaboration, “We don’t like helicopter researchers. We’ve been studied enough” (Cross, 2018).

Ethnographies and participant observation studies vary widely in the amount of time researchers spend in the field, and a review of the information practices literature using ethnographic methods reflects that diversity. A total of 16 hours of fieldwork was conducted with two community health workers across two days of observation in June, 2019. Fieldwork was documented with notes in real time and memos at the conclusion of each day.
Both fieldnotes and memos were hand coded and analyzed using a thematic analysis method defined by Braun and Clarke (Braun et al., 2014). Vaismoradi, Turunen and Bondas use Braun and Clarke’s approach to illustrate the six-step process for thematic analysis, which includes 1) familiarizing with data; 2) generating initial codes; 3) searching for themes; 4) reviewing themes; 5) defining and naming themes; and 6) producing the report (Vaismoradi et al., 2013). “Themes” are defined by Vaismoradi, Turunen and Bondas as, “coherent integration of the disparate pieces of data that constitute the findings” (Sandelowski & Leeman, 2012; Vaismoradi et al., 2013). While this approach may appear linear, the actual process is far more iterative, as it is often necessary to revisit earlier stages in order to ensure, for instance, codes have been appropriately collated into a theme.

3.4 Interviews

Interviewing, in one form or another, is one of the most common methods for qualitative research. A wide variety of interviews exist in the literature including conversational, ethnographic, key informant, narrative, open-ended, structured, semi-structured, and respondent. Semi-structured interviews, and similar interview methods, has been a common technique when collecting data both by, and from, community health workers (Mlotshwa et al., 2015), and for information practice research (Bonner & Lloyd, 2011; Wibe et al., 2015). The current study will report semi-structured, in-depth interviews in addition to ethnographic interviews conducted during fieldwork.

Ethnographic interviews are questions posed by the researcher during ethnographic fieldwork. These types of questions afford the researcher to capitalize on unique opportunities in the field, and in the moment, to ask critical questions relevant to research
questions. Although they run the risk of inserting the researcher into a situation, timed correctly, they can serve to illuminate an event or an action. Indeed, Creswell suggests timing is critical to ethnographic interviews (Creswell, 2014).

In addition, this study will report semi-structured, in-depth interviews with, not only community health workers, but also other relevant stakeholders. Semi-structured, in-depth interviews afford researchers the opportunity to gain a wider and deeper understanding of a phenomenon; they provide information, in part, driven by the participant; and they are an accepted method for understanding individual perspectives. Most importantly, these types of interviews give primacy to the voices of the participants. Currently, Kentucky Homeplace employs 22 community health workers in 30 counties. This study sought to interview a purposive sample which included each community health worker at Kentucky Homeplace, the Homeplace administration, (Director and Assistant Director); as well as a convenience sample of two groups: state and local public health officials, and the officers in the Kentucky Association of Community Health Workers (KYACHW). Ultimately, 13 interviews were conducted: 6 with community health workers (2 of whom were also leaders in KYACHW), 3 with library directors, and 4 interviews were conducted with administrators and individuals from the Kentucky Department for Public Health. Each interview was transcribed in full (by the researcher), and was grouped according to categories established by the role of the individual, for instance, community health workers, public health officials, KYACHW leadership, etc. Interview transcripts will be verified by the interviewee, then will be examined using thematic analysis. Appendix 1 details the proposed interviews and the interviewees’ titles. In addition to the individuals below, a modified snowball sampling was performed to elicit important but
potentially overlooked individuals. Individuals identified through snowball sampling were contacted via email and in accordance with IRB approval, yet no individuals responded to invitations for interviews.

As described in Chapter 2, libraries play significant roles in patron’s and community’s information practices, whether through access, organization, or dissemination. In order to fully understand the information field in which community health workers operate, interviews with public library directors and regional academic library directors were conducted. Academic and regional health science librarians were chosen from the Kentucky Medical Library Association Director of Members. Though several attempts to recruit librarians and library directors were conducted, only 3 interviews were conducted.

To be sure, interviewing is not without limitations. Interviews risk observer effects, wherein respondents will act and respond differently as a result of being part of a study (or simply being observed) (Podsakoff et al., 2003); interview data risks response biases, wherein participants adjust responses to what they anticipate the researcher wants, or is “socially acceptable” (Hunt & Bakker, 2018). Interviews, and particularly the transcription and analysis, takes a great deal of time. Indeed, Creswell (Creswell, 2014) cautions that interviews may take more time than participant observation based solely on the time it takes to transcribe. Moreover, interviewing is part science and part art. To be a good interviewer, one cannot simply read or attend trainings, it takes experience. While observer effects and response bias can be countered with rapport building, or asking questions multiple ways – that is, simple solutions like minor tweaks to the interview protocol – the only way to become a better interviewer is through experience and with time.
All semi-structured, in-depth interviews were collected in-person when possible, through video-conferencing when face-to-face interviews are not feasible, and by telephone as a last resort. However, all interviews were conducted in the preferred method of the interviewee. 6 interviews were conducted in person, 6 by telephone, and 1 via Zoom video conferencing. A protocol for the community health worker interviews was developed by adapting questions from Hunt and Bakker’s research examining the information needs of public health researchers (Hunt & Bakker, 2018) and LaPelle, Luckman, Simpson and Martin’s evidence-based public health studies (LaPelle et al., 2006, 2014). The protocol for all other interviews was adapted from the community health worker protocol. All interview protocols are included as Appendices.

3.5 Document Analysis

The relevant documents for this project include: minutes from state health department meetings concerning the creation of an association and the credentialing of community health workers (from 2014 to 2018); minutes from KYACHW meetings (from 2016 to 2018); proceedings from the annual KYACHW conference (2016, 2017, and 2018); Kentucky Homeplace training packets for community health workers; and prescribed documents used by community health workers in their interactions with clients. Attempts were made to secure these documents through email correspondence. Multiple attempts were made to secure all documentation but at no point were documents be requested through legal means such as invoking the Freedom of Information Act. Ultimately, the following documents were analyzed: the Kentucky Community Health Worker Certification Manual; the Kentucky Department for Public Health’s “Community Health Worker Curriculum Review Application Rubric;” Kentucky Homeplace’s
“Community Health Worker Curriculum;” the Appalachian Kentucky Health Care Access Network’s “Core Requirements” for Tier 1 and Tier 2 certification; Kentucky Homeplace 2018-2019 Annual Report; and minutes from 15 Kentucky Community Health Worker Advisory Group meeting from August 2017 – July 2019. This study proposes to conduct discourse analysis with those documents critical to understanding the socio-cultural and political ecologies surrounding community health workers. The intention of this document analysis is to provide an additional perspective and enable a deeper understanding of the information practices of community health workers. Discourse analysis, and in particular, a Foucauldian discourse analysis, provides a framework that illuminates the socio-cultural and political forces that work to shape information practices. Discourses, in this sense, “are not conceptualized simply as ways of speaking and writing, rather, discourses are bound up with institutional practices - that is, with ways of organizing, regulating, and administering social life” (Willig, 2003).

3.6 Data Analysis

This section describes the procedures by which data will be collected, analyzed, and stored. Details regarding transcription and coding, data security, and triangulation will be addressed.

3.6.1 Transcription and Coding

Audio recordings of observational fieldwork and interviews were transcribed in full. Seven pages of field notes, memos, and documents were included for coding and analysis. The first step was to read through the text line by line to ensure an accurate interpretation of what is being said. Coding followed an open, inductive approach using
codes that emerge from the text. Thematic analysis was conducted to capture patterns in responses and documents. Themes were illustrated and reported below using exemplar quotes. Similar methods have been utilized in qualitative research where the use of multiple coders is not feasible or would be considered unethical (see, for example, Dye et al., 2018; and Nemer et al., 2018). To reiterate, both fieldnotes and memos were hand coded and analyzed using a thematic analysis method defined by Braun and Clarke (Braun et al., 2014) which details a six-step process for thematic analysis: 1) familiarizing with data; 2) generating initial codes; 3) searching for themes; 4) reviewing themes; 5) defining and naming themes; and 6) producing the report (Vaismoradi et al., 2013). “Themes” are defined by Vaismoradi, Turunen and Bondas as, “coherent integration of the disparate pieces of data that constitute the findings” (Sandelowski & Leeman, 2012; Vaismoradi et al., 2013).

3.6.2 Data Security

Interview audio files were transferred to a password protected, desktop computer as soon as possible. When the immediate transfer to the password protected, desktop computer is not immediately available, audio files will be transferred to a password protected laptop in order to ensure files are safely converted from the initial recording. Transcripts derived from all interviews have been kept on the same password protected computer, as have fieldwork notes and all files secured for document analysis. All print materials have been kept in a locked office, in a locked file cabinet. All data and files will be kept for at least seven years, at which point it will either be migrated to a secure (encrypted, HIPPA compliant) data repository for archiving, or will be destroyed. All personal data will be anonymized before sharing in any form.
3.6.3 Triangulation

The process of triangulation ensures that independent findings are not unique, but instead, are observed from multiple perspectives. Triangulation is described as “adding to credibility by applying multiple sources, methods, investigators or theory to as study” (Foster, 2004). For this project, triangulation is established through multiple methods. That is, the analysis of the data generated through participant observation, in-depth interviews, and document analysis, in tandem, will validate and confirm the interpretation of the phenomena.

3.7 Summary

This study is a qualitative investigation, utilizing multiple methods, seeking to understand the information practices of Kentucky Homeplace community health workers. Semi-structured, in-depth interviews and participant observation with community health workers have been conducted for R₁ and R₂. Conceiving information needs, seeking, barriers, and uses as practices requires the recognition that social practices are located within microcosms which, in turn, situated within meso- and macrocosmic communities, and as such, practices are socio-cultural and political. To understand the socio-cultural context and political ecology in which community health workers operate, semi-structured, in-depth interviews have been conducted with community health worker administrators, state public health officials, and leaders from the statewide community health worker association. These interviews were informed by the observational fieldwork and will address R₁. To further understand the socio-cultural and political context, this study has conducted thematic content analysis with documents critical to the construction of
community health workers’ roles, responsibilities, and authority. Finally, to fully understand the information environment in which community health workers operate, semi-structured interviews have been conducted with directors of public libraries in the 30-county area Kentucky Homeplace covers as well as librarians from regional academic and health science libraries. The next chapter will report the results of this study.
CHAPTER 4. FINDINGS

This chapter reports the findings from the research conducted with community health workers, leaders in the Kentucky Association of Community Health Workers (KYACHW), the Kentucky Department for Public Health (KDPH), and library directors from the 30-county Kentucky Homeplace service area. Three methods - semi-structured, in-depth interviews, participant observation, and document analysis - were employed to investigate two research questions:

R1: What are the information practices of the Kentucky Homeplace community health workers?

R2: What is the role of information communication technologies - such as mobile phones, computers, and the internet - in the access and management of information by Kentucky Homeplace community health workers?

4.1 Participant Characteristics

Recruitment emails to community health workers were sent, as intended, through Kentucky Homeplace administrators. Recruitment to leaders from the KYACHW, KDPH, and library directors were sent directly to potential participants. Of the 22 potential community health workers, six interviews were conducted. Two of the community health workers interviewed were also leaders in KYACHW. Recruitment emails for community health workers were sent in early April, 2019 with follow-up emails sent in late April, 2019 and early May, 2019. During the interview process, participants were asked “Do you have suggestions for other people I should contact to interview?” The suggested individuals were contacted independently of the other recruitment emails. Follow-up emails were sent
if individuals did not respond within two weeks. Recruitment emails were sent directly to Kentucky Homeplace administrators and representatives from the Kentucky Department of Public Health. A total of four interviews were conducted with individuals who identified as Kentucky Homeplace administrators or Department for Public Health representatives.

Recruitment emails for library directors received no response initially, and an unexpectedly low response after follow-ups. (One interview was conducted with an outreach librarian that responded to a call for participation. However, this interview was not included as the library is outside the geographic region served by Kentucky Homeplace.) Two Regional Coordinators for the Kentucky Department for Libraries and Archives were contacted to assist with recruitment of library directors in the 30-county area served by Kentucky Homeplace. One Regional Coordinator agreed to forward recruitment emails, resulting in two responses. A total of three interviews were conducted with library directors.

Combined, thirteen semi-structured, in-depth interviews were conducted. Each interview was conducted in the preferred method of the interviewee. Six were conducted by phone, six were conducted in person, and one interview was conducted via Zoom video conferencing software. Interview participants ranged in age from 30 to 63, with a median of 45 years old. Race and/or ethnicity were only collected for community health workers. All community health workers identified as “white,” “white, non-Hispanic,” or “Caucasian.” The six community health workers had over 35 collective years of experience as community health workers; the median experience was 4.75 years. All but one interview participant identified as female, one identified as male. The demographics for this study are similar to that of the commonwealth and the Kentucky Homeplace service area.
Kentuckians in the Appalachian region of the commonwealth are, on average, older (40.8 years old, compared to 38.1 years old in the Non-Appalachian areas), and white (94.7% of the total population). Overall, Kentucky has less diversity by race/ethnicity than all other US states (United States Census Bureau, 2019).

A total of 8 hours, 39 minutes, and 47 seconds of interview time was recorded. Each interview was transcribed in full, by hand. Interviews were returned to the interviewee for verifying. Two participants asked that small sections of their interviews be redacted; both requests were granted.

Two community health workers agreed to participant observation. These were both conducted in late June, 2019 and, in total, amounted to 16 hours of observation. Notes were taken during observation; memoing was conducted during and after observation.

In addition to interviews and participant observation, the documents considered for analysis were the Kentucky Community Health Worker Certification Manual, 2019 (Kentucky Department for Public Health, 2019) (which includes the Core Competencies adopted by KDPH and community health workers in the commonwealth), the Kentucky Department for Public Health “Community Health Worker Curriculum Review Application Rubric,” the Kentucky Homeplace “Community Health Worker Curriculum” protocol manual, the Appalachian Kentucky Health Care Access Network (AKHCAN) “Core Requirements” for Tier 1 and Tier 2 Certification (Appalachian Kentucky Health Care Access Network, 2020), and the Kentucky Homeplace 2018-2019 Annual Report (Kentucky Homeplace, 2019). Access to the Kentucky Homeplace shared drive for health information and community resources was requested, but technical difficulties prevented
it from being analyzed. Minutes from 15 Kentucky Community Health Worker Advisory Group meetings from August 2017 to July 2019 were consulted.

While the original intention was to conduct the study in a deliberate, linear format – originating with participant observation, interspersing observation times with in-depth interviews, and concluding with document analysis – as recruitment began and the project progressed, it became clear that such structure was not going to be possible. Most interviews were conducted prior to the participant observation, and close reading of documents began prior to interviews being concluded. Although this was not expected, it does reflect the reality of working with a population of community health workers whose schedules are often unpredictable and within the confines of personal scheduling conflicts. In other words, although research protocols are clean, organized, and carefully drawn up, real world circumstances require flexibility and understanding.

4.2 Information Practices

To reiterate, information practices, as conceived by Lloyd constitute “an array of information-related activities and skills, constituted, justified and organized through the arrangements of a social site, and mediated socially and materially with the aim of producing shared understanding and mutual agreement about ways of knowing and recognizing how performance is enacted, enabled and constrained in collective situated action” (Lloyd, 2011). It will be demonstrated that the information practices of community health workers are socialized through training and apprenticeship and performed through interactions with clients, health professionals, and other community organizations.
The information needs that were communicated by community health workers included patient information, information about services and resources in their community, information about services and resources available independent of location, and health information for themselves and for their clients or clients’ caregivers.

The information gathered during the intake process is extensive and as close to developing a comprehensive understanding of the client’s health and needed services. The following quote from one community health worker exemplifies the wide range of information gathered:

“OK. First we do the demographics, of course we do the date of birth, social, and stuff like that, and then we go to questionnaire and uhh, we ask them how, in general, how they feel like they are healthiest? Do they feel like they have perfect health? Uhh, fair, good, poor? And uhh, that lets us know, pretty much, how their health is. And then you go through and ask them “have they been put in a bed in the last 30 days.” Or on the couch where they couldn’t do anything, or have they hurt in the last 30 days, or had an injury in the last 30 days. Cause, that sometimes, people fall sometimes, and they’ll say, “you know, I fall quite often” and to us, that’s a fall caution and they need help with that. And you’ll ask them, “when’s the last time you’ve seen your doctor?” “If you’ve seen a doctor in the past year but you didn’t because of the cost of it.” And that could be copayment, it could be the gas, vehicle, anything like that. And it lets us hear that they are actually keeping their appointments when they make them. They are actually getting there. We ask them about immunizations such as flu, past year flu shot in the past year. Pneumonia shot in their life, umm, shingles vaccination, we ask them if they did
smoke, how many years did they smoke? How may packs did they smoke? We ask if they’ve had a heart attack, a stroke? We go through a basic questionnaire that’s very detailed. We get their height, we get their weight, I get their blood pressures. We do Care Collaborative with their blood pressure. But then, you know, be aware of what their blood pressure should be. Umm. All my diabetics, I talk to them about A1C because some of them don’t really know what that is, and that’s really important for a diabetic. We ask them if they take insulin, if they are a diabetic. When they were diagnoses, how old they were, and if their family has a history of it. Such as mother, father, sister, brother. We go in to ask if they are military, because if they have been in the military, some of them have been in the military and have never used the VA. VA could help them if we couldn’t in certain things. We ask when the last eye visit, dental visit was. Umm. If they wear glasses. Most the time, I have a lot of vision and dental clients.” [Community health worker 2]

This is critical information. Not only does this initial information seeking help define what services the client may need, but it also may serve as the evidence base for how the community health worker has impacted the health of the individual. While there is an established protocol for which questions are to be asked, it is clear that the questions are asked conversationally to help build rapport and to help make the client more comfortable. Notice in the quote above how the community health worker does not simply ask about diabetes and their A1C, but that she “talks to them.” Although the information is essential for developing foundational knowledge about a client, it must be done conversationally.

Information practices are “context specific, and entwined with a range of modalities (social, corporeal and epistemic/instrumental) through which information work and
performances of a specific setting are referenced” (Olsson & Lloyd, 2017). For community health workers, a significant aspect of their information gathering comes in the form of community knowledge, or knowledge of a specific site. For example, when asked about what types of information community health workers need to do their jobs, a leader in the KYACHW said:

“They definitely need to know what resources are available in their counties and their communities, what’s available, it’s just, it’s a learning experience, really. To know what’s in your counties, and what’s available, but that, I think that’s one of the number one things that you definitely need to know your community.”

[Community health worker 1]

When asked the same question, an administrator in Kentucky Homeplace responded:

“Endless amounts. I mean, I mean that’s uhh, you know, I guess you would go into categories, different categories of different types of information. You know, a lot of their information is it’s almost like, I’m not really, it’s almost like cultural, you know, it’s not written down. It’s not something that they would find on the internet.”

[Community health worker administration 1]

One individual from the state health department replied:

“Ohh! That’s uhh, a big question. I think, from their perspective, information about what resources are available. Because a lot of, from my understanding, and I should say, I have been a community health worker in the past, and so, a lot of what you are doing is trying to connect people with the right resources. And, umm, so knowing either what’s out in your community, you know, whether it’s a service such
as food banks, or maybe transportation, or low-cost transportation, or even just a person, you know, a resource in information can be somebody who also knows more than you do.”

[State public health representative 1]

In each instance, interviewees pointed to the need to know community resources, whether cultural or material. Moreover, these quotes illustrate that community health workers are often called on to build relationships across micro, meso, and macro-levels in their communities. This type of community knowledge is not readily available on most health information portals. Rather, it comes from knowledge of organizations, and relationships with individuals in those organizations.

Furthermore, the site of information seeking for community health workers seems to be social. There are two areas where this is made clear. First, initial training for community health workers is conducted in-person, and with a substantial, subsequent apprenticeship period. Second, information seeking after one becomes a community health worker is commonly conducted either through group trainings or social situations such as interagency meetings.

The social site of becoming a community health worker, and the formal training associated with that transition is well-defined throughout the certification manual and description of training processes. For example, the Certification Manual states, “Competency is achieved through a combination of education and experience” (Kentucky Department for Public Health, 2019). Though the state does not provide formal training to become a community health worker, they do set out the criteria, again, highlighting the
necessity for practice: “Approved organizations must provide a minimum of 40 hours of didactic instruction and 40 hours of observation/preceptorship experience (Kentucky Department for Public Health, 2019). Kentucky Homeplace has its own competency-based training, which has been approved by the Kentucky Department for Public Health. Its training includes 40 hours of didactic training and an 80-hour practicum, or “shadowing,” with an experienced community health worker. To date, the only other organization approved by KDPH to conduct core and continuing education training for community health workers in Kentucky is the Appalachian Kentucky Health Care Access Network (AKHCAN). AKHCAN claims to be “an established, cohesive, multidisciplinary group of experts and stakeholders, joined together by a formal structure and a shared vision of healthier people in Kentucky. The network supports Community Health Worker (CHW) programming to address the unique health care needs of rural Kentuckians” (Appalachian Kentucky Health Care Access Network, 2020). Their Member Organizations include university units (e.g. the UK Center for Excellence in Rural Health), health care organizations (e.g. KentuckyOne Health), public health departments (e.g. Floyd County Health Department), and additional organizations focused on the health and wellbeing of their communities (e.g. the Kentucky Northeast Area Health Education Center). Although AKHCAN training does not include the practicum that Kentucky Homeplace does, the importance of being physically present is still illustrated by the number of allowed online training hours – 10 hours – as compared to the required classroom hours, which total 88. The social nature of training and professional development is reinforced with the continuing education requirements. A certified community health worker must complete a total of 10 “contact hours” (an apropos metaphor), of which, only 2 hours may be satisfied
through independent study. The remainder of those hours must be conducted in social settings including KDPH-approved training programs, or credit hours taken at a college of university consistent with their stated Core Competencies (Kentucky Department for Public Health, 2019). This is further solidified in the criteria for “acceptable continuing education” which states, “[g]enerally, webinars will not be accepted [their emphasis] for continuing education, unless they have received prior approval from KDPH.”

Information practices are embodied and performed. One of the state public health practitioners interviewed illustrated the importance of the performance of being a community health worker. In a discussion about the initial training and continuing education offered to community health workers, she remarked:

“Umm, so they’re, they’re doing so many different things that I think the role playing is a way for them to practice. You know, how do you respond to somebody who says something that’s absolutely ridiculous without going “well that’s just absolutely ridiculous!”...Role playing is so helpful for people and they say things and when they hear them, they go, oh that was not right. Let’s try that again. You can’t do that in real life, or you’ve destroyed your relationship with that family. So, I think that role playing is critical. And the person who’s doing the teaching can really throw some curveballs out there for folks. They can do some regular stuff, but throw those curveballs out there. Practice those curveballs before you’re actually out in the field.” [State public health representative 6]

In this quote, the state public health representative expresses the importance of performing the role of community health worker. Moreover, the performance of that role is critical to
the relationship built with the client. Indeed, if that role is not performed correctly, the community health worker risks losing rapport, trust, or credibility.

In the following sections, it will be shown that the information practices of community health workers who participated in the current study are embodied and enacted through role as interstitial agents, crossing boundaries between organizations, between individuals, and across social levels. Furthermore, the information that they create, seek, process, and disseminate functions as a boundary object, making visible the sociotechnical contexts in which community health workers operate.

4.3 Boundaries

Since Star and Griesemer’s (Star & Griesemer, 1989) conceptualization of boundary objects, many scholars assumed the task of operationalizing and theorizing. Boundary objects have been examined in medical (Keshet et al., 2013), agricultural (Klerkx et al., 2012), business and finance (Koskinen & Mäkinen, 2009), policy and administration (Guston, 2001) and fine arts (Rödder, 2017). They have been discussed extensively in information science (Albrechtsen & Jacob, 1998; Lund, 2009; Yeo, 2008), but perhaps the most comprehensive exploration is that of Huvila, Anderson, Jansen, McKenzie, and Worrall (Huvila et al., 2017) in which they present an overview of information science research informed by the theory of boundary objects, and systematically examine its role in the study of information. They state, “the concept of [boundary objects] makes visible the sociotechnical contexts within which people seek, retrieve, use, share, and curate information” (Huvila et al., 2017) which firmly situates the theory of boundary objects well within the constructionist approach, and the current study. They contend boundary objects
can serve as a wide variety of artifacts (activities, archival standards, cancer, community information, concepts, design concepts, digital literacy, documents, gender, genre, group affiliations, information services, medicine, methods, musical scores, ontologies, policies, repositories and digital libraries, rooms/spaces, technical standards, visual representations, and water), and they function in a number of process (from perspective making and taking, to shaping identities). Huvila and colleagues (Huvila et al., 2017) cite three types of concepts related to boundaries: boundary-related activities (boundary breaking, spanning, work, and activities); boundary-related things (concepts, constructs, negotiating artifacts, organizations, and conscription devices); and different types of boundaries (tangible/intangible, imagined/real, evolutionary, knowledge, and three-dimensional). Each were present in the current study.

4.3.1 Boundary-related Activities

Community health workers in this study consider themselves to be barrier breakers, or essentially, boundary crossers. When asked how she defines “community health worker” one participant responded:

“I define us as maybe barrier-breakers. Umm. We are, I always tell my people, we are the ones - I feel like I fight a war for them when they come in here and they’re needing help with so many different areas. All I can say is that I can’t promise you that I can do it, or help you, but I promise you that I’ll try. And that’s going above and beyond to try to whatever the call of duty is to try to help that person at the end of the day...So, I would define a community health worker as a barrier-breaker. Cause that’s what we do. We tear down walls.” [Community health worker 12]
Community health workers are, by definition, boundary spanners. The most common definition of community health workers from the American Public Health Association states, “…This trusting relationship enables the worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery.” In the quote above, the community health worker is demonstrating that, not only does she recognize that there are boundaries, but that she understands her role is to cross those boundaries and to break down the walls that separate her clients from a given service if necessary.

Huvila and colleagues cite several studies (Davenport & Cronin, 1998; Foster, 2007; Pilerot, 2012; Wilson, 2010) that they argue have “considered the collaborative information seeking or sharing practices of people who gather together over time in formal and informal groups such as departments, communities of practice, task forces, crews, and teams” (Huvila et al., 2017). The interagency meetings described by both community health workers and librarians typify this type of collaborative information seeking and represent sites where individuals serving as boundary objects operate, where boundary work is done, and where boundary objects serving as artifacts are exchanged and transverse communities. When asked how information impacts their job, one community health worker responded:

“The more information I have, the easier it is and the more that I feel I am capable of doing for the people in my community. So, the more that I am able to like, go to interagency meetings, and people hand me a flyer about something their organization is doing, or if they’ve got a change in something, then I get to stay
informed and then I can pass that information on to my clients, or I can be like, oh I remember someone was saying that they were going to do a free dental clinic in, you know, down the road. And that would be really awesome instead of having my person have to save up to go to the sliding scale clinic...We, once a month, have an interagency meeting that meets and, sometimes, they’ll have a whole lot of people that show up, and other times you’ll have just the same faces that you normally you see. But, it’s a group of people in the community that, they’ll come together like Hospices of Bluegrass will send people, LKLP will send people, umm, some of the free clinics will send people, some of the social workers from DCBS will show up. And, we just kind of, we’ll let each other know, like ‘this is going on, we’re expecting these changes’ uhh, or we try to come together to address problems in the community and what we can we do collectively to, to help with some of that.”

[Community health worker 8]

It is striking that this community health worker connected the question about the impact of information to the collective information seeking of interagency meetings. It speaks directly to where timely and credible information can be found. In fact, one community health worker, when asked specifically which information sources are the most credible or up to date replied:

“Like, when we go to the meeting and hear it first-hand. And we hear it, and you know, I think that’s one of the best things. We got to attend those meetings, not just to put ourselves out there, but to hear what’s available.” [Community health worker 1]
Local public libraries spoke similarly about interagency meetings, and their role as an arena for collective information seeking and sharing practices. When asked a follow-up question about how one library finds out what other organizations are doing, one library director responded:

“We go to a lot of stuff. I got, I have two or three staff members who go to a lot of umm, we have what’s called inter- interagency council meetings where all the social organizations get together, umm, and they have a tendency to do a lot of duplication of services. And we sit there and listen to them and try to find, you know, who do we send you all to? Who...here’s what we need to be doing. How do we help you? It comes down to ’what are you missing?’ And here are these resources that will help your organization, then we have these org...we have these resources that will help your organization. So, we send a lot of people out to find out what they are looking for and what we have to offer that will help.” [Public library director 9]

Anderson’s (2007) examination of boundary objects helps illustrate the impact of considering interagency meetings as an arena in which information practices are performed as well as the socio-material and socio-technical context that needs to be considered when seeking to gain an understanding of the information practices of community health workers.

As Huvila and colleagues state, knowing something is a boundary object, or being able to describe the characteristics of boundary object-ness, does not in and of itself provide any understanding of its nature or function. However, describing the boundary work of community health workers and other professionals attending interagency meetings does
give insight into the nature and function of collective information practices, and it suggests avenues for information dissemination, and opportunities for outreach.

Moreover, Reynolds (Reynolds, 2018) examination of enactments of “community” during area-based, empowerment initiatives illustrates that the boundary work done by community health workers and others attending those interagency meetings constitutes not only a collective information practice, but constant formation and re-formation/production and re-production of community. If, as Reynolds asserts, “‘boundary work’ helps challenge assumptions that the community engaged in an empowerment initiative is fixed, and draws attention to the practices that shape how the community boundary is re-drawn as the initiative unfolds” (Reynolds, 2018, p.205), then we may say that the boundary work performed during the interagency meetings could be considered as constitutive of forming community boundaries. Or in other words, by participating in interagency meetings, an individual is asserting themselves as part of the community, and consequently, that their organization is part of the community.

The boundary work conducted by community health workers is not limited to externally focused activities either. Their interaction with organizational administrators are another example of how community health workers are “negotiat[ing] meaning and help[ing] to understand and articulate connects and disconnects between communities, cultures, and information infrastructures.” (Huvila et al., 2017, p. 1807) For example, in a discussion about access to information, one community health worker administrator said:

“Yeah, and I want to go back to that [a shared server community health workers use to retrieve health information] too. Because the community health workers will find things in the community that they will have questions about. And they bring
that forward and so that gives us an opportunity to answer the question correctly, or to find the right information that they need. And so, we’re not always knowing, sitting in our offices, exactly what they are dealing with out in the field. So they have an opportunity to bring that to us and say, ‘Hey, I’m getting questions on this,’ and ‘I’m getting questions on that subject,’ and ‘what information should I be giving back to the people,’ and so it works both ways, and I think that’s the beauty of the community health worker that’s living in the midst of the community that can hear those things even before we hear it, or the public hears it, or the physician hears it. So, they are really the key, I think, to making sure that things are accurate, and that things are on time.” [Community health worker administrator 2]

4.3.2 Infomediaries

Infomediaries are those individuals who are positioned to facilitate the flow or exchange of information from one source to another. That is, they work to identify, provide, and discuss health information with clients and caregivers. In network studies these individuals have been called “gatekeepers,” (Long et al., 2013) in knowledge management, scholars refer to them as “boundary spanners” (Haas, 2015). Because the concept of information mediation is not unique to any one discipline, the conceptualization of this role relies heavily on the theoretical lens or discipline from which the role is being considered. Using a circuit of culture framework, Bella and colleagues (Bella et al., 2008) evaluated the various conceptualizations of “info(r)mediary work” across six health professions (dieticians, librarians, nurses, pharmacists, physicians, and social workers). They conclude that each role conceives information mediation very differently. Librarians and pharmacists, they argue, provide information. Dieticians, nurses, and physicians
understand information mediation as patient education, while social workers consider it as psychoeducation (Bella et al., 2008). Community health workers in this study seem to conceive of their role as mediators as one that connects individuals to the appropriate community resources, to the appropriate information, and as a liaison between the individual and the health care system. Librarians, similarly, communicated that their role was not to necessarily answer questions, but rather, to be the mediator between individuals and the appropriate resources, whether those resources are information or community-oriented.

On a scale from “knowledge broker” to “independent expert” they place, in respective order: librarians, social workers, nurses, pharmacists, dieticians, and physicians. One of the goals of the current study is to figuratively situate community health workers along that spectrum. Community health workers, by virtue of their mediation role between health care systems and individuals, are information mediators. Information mediation, as an inherently communicative act, is not without misunderstanding, misinterpretation, or misinformation. Harris, Veinot, Bella, Rootman and Krajnak, for example, examine the concepts of misinformation and “misinfo(r)mediation” through HIV/AIDS info(r)mediation in rural Canada. In addition to intentional misinformation, they argue, “Community members, no matter how well-intentioned, who pass on unsubstantiated or inaccurate information about transmission or treatment of HIV/AIDS, may put others at risk” (Harris et al., 2008). Though the authors do not provide any specific strategy for mitigating the spread of false information, the implications for subordinate roles such as community health workers are substantial. One could speculate, for instance, those supervising information mediators would have an interest in controlling both how and what
information is disseminated. This, in turn, has implications for the information mediator’s autonomy, as well as, potentially, their professional and personal identity.

4.4 Information Communication Technologies

Information communication technologies are regularly used by health professionals to access and manage information. However, the types of ICTs, and the ways in which they are used tend to vary across professions and are context-specific. For instance, a review of mobile health (mHealth) technologies to provide health services and manage patient information in low- and middle-income countries determined that health care workers used ICTs to disseminate clinical updates, educate themselves, and set reminders (Källander et al., 2013). Similarly, Dixon and colleagues conducted a two-year review of public health and informatics literature to determine the ways in which epidemiologists used ICTs, and mapped the results to the 10 Essential Public Health Services. They determined that “several” areas benefited, but primarily “Monitor Health,” “Diagnose and Investigate,” and “Evaluate” (Dixon et al., 2015). The differences captured by those categories is indicative of the variety of ways even the same professional role can utilize ICTs. Multiple systematic reviews have been conducted investigating so-called mHealth and eHealth projects with communication health workers. Braun and colleagues report the most common uses of mobile technology among community health workers include: collecting field-based health data, receiving alerts and reminders, facilitating health education sessions, and conducting person-to-person communication (Braun et al., 2013). Agarwal and colleagues’ review of frontline health workers in developing countries reports similar uses, adding training and decision support, emergency referrals, and supervision of health care workers. The variances across and among professions means that providing a deep description of
community health worker information practices must include an evaluation of ICT use for information access and management.

Many of the ICTs used by community health workers are typical of the modern professional. For instance, they use email:

“...But for instance, this morning, I received an email from one of my co-workers looking for a resource to help with oxygen...” [Community health worker 1]

Email is utilized by community health worker organizations to facilitate communication, to push information out to members, and for members to seek information or resources.

“We, both the KYACHW, and KDPH, meaning mostly myself from the KDPH standpoint, uhh, KYACHW has the listserv of all the KYACHW members, and I have the listserv of everybody who is involved in the CHW advisory workgroup, and both of us will, umm, periodically when we find either good resources, maybe an upcoming trainings or maybe you know, things to consider, we will share those with our, our listserv as well. So, I think that’s a good way to get those umm, kinds of information out. Umm, and that does provide, I think, less people communicate, really, they don’t have like ongoing email chains through the big groups. I haven’t seen, umm, but that is one way for, for us to get information out to CHWs.” [State public health representative 2]

Here, this public health representative is articulating the importance of email as a means of mass communication across the state and amongst community health workers, and as a means for the state to distribute information to the larger body of community health
workers. Additionally, it seems that the “ongoing email chains” might be one way community health workers are building and maintaining relationships with each other.

The use of the internet, broadly, was a common theme among community health worker information practices. One community health worker, when asked what information format is the most useful replied,

“Website, I’ve found the website is usually the most up to date for, for most information because I can pull a book over here that I’ve had training on last year and there might be something that not’s update this year. You know, so I depend on the website, on the internet mostly. I do make phone calls sometimes to ask questions. But I do depend greatly on the internet.” [Community health worker 11]

However, the internet was also characterized as having limitations. For instance, while community health workers described the internet for being good at finding contact information, or factual information about a drug, a phone call would be a better resource for finding information about a program’s availability, or existing social services.

“I said, we’re spoiled. With the internet. It’s like, it’s at your fingertips. But we still, if somebody needs food, you might do a phone call. You might call a church to see if a local pantry to see if they’ve got food available.” [Community health worker 1]

Community health workers often use the telephone to seek information and repeatedly voiced the need for contact information in order to call an individual or organization. For example:
“With the internet. It’s like, it’s at your fingertips. But we still, if somebody needs food, you might do a phone call. You might call a church to see if a local pantry to see if they’ve got food available.” [Community health worker 1]

Or,

“So anyway, I called the American Heart Association and harass them to see if they couldn’t get us some BP cuffs over here. And they said, “we don’t do that ma’am.” I’m like, well you could try!” [Community health worker 3]

In fact, community health workers indicated that some internet use was specifically in order to find telephone numbers:

“Uhh, I will either reach out to my other co-workers, the other CHWs to see if they would happen to know, or know the correct resource to go to. I reach out to other organizations within the community. Or sometimes I will just do research and rely on Google to help me find and point me in the right direction if it’s something a little bit larger.”

Interviewer: And, can you tell me a little bit more about that? About using Google, umm...

“Oh, just that...that would be more in terms of if I needed a phone number for something. Or if, umm, you know, if I have somebody who is a cancer patient and they need a support-line and I don’t happen to have anything already wrote down, I’ll look for certain resources like that. Or numbers to free clinics to call or, not free clinics, but sliding scale clinics.” [Community health worker 8]
State public health representatives also communicated the importance of calling an individual, and specifically, as it compares to searching for something on the internet, or printed information:

“You know, people in Louisville can go online and, and connect with that, and it has kind of a listing, and it’s kept updated regularly, but they don’t have that out in Eastern Kentucky, so a lot of times it’s based on word of mouth or they will, honestly, rely on printing things and put things in a physical binder. But you know, by the time you print it and put it in a binder, that could be outdated, but you won’t know because there is no place to look for that. You have to rely on talking to people, making those phone calls.” [State public health representative 2]

Community health workers in this study frequently referred to the use of simple, analog technologies. For instance, business cards were something that were described as useful. During a discussion of the value of interagency meetings, one community health worker said,

“...They’ll come, and they tell us what they offer, and we know if we come across anything, we keep their cards in a little thing, you know, what they do, and we know how to contact them.

Interviewer: “Where do you keep that? What’s your personal organization for, so if everybody’s giving you a card, how do you, where do all those go?”

“I’m old school, so I have a Rolodex that was mine personally that I brought to work. What I do is if it’s something is new or a service, I try to put it in that Rolodex under what service it is. Like if it’s for dental, I put it under ‘D.’”
In fact, when asked, specifically, “What information is the most useful for you?” this community health worker referred back to the discussion on business cards,

“Definitely the cards. I’ll collect the booklets, but they get put on a shelf, or shoved in a drawer. The cards, definitely, for me, work best.”

The utility of business cards was echoed by librarians as well. One library director discussed the importance of the business card while talking about the importance of connecting to their community and the people in it.

“So, you know, be at that table. And be paying attention, you know, what umm...the story I always tell is when the doors first opened, you know, we’ve always lacked, really, the commiserate funding to run the system we should run for the population we have in this county. But, we have been blessed and we have done well. But there was a group of people who came in about shelving. And they left a business card. And they, umm, they just seemed very skilled, and very willing to work with pricing and such as that, Robert. I kept that business card for three years. And then, when the renovation grant come through, and that was something that we were able to take care of, that’s who I contacted.

Interviewer: “And they were available for you?”

“And they were available. And they were thrilled that that had been kept. You know, it’s that type of thing. You know, I don’t mean to be a hoarder of papers and business cards, but it’s just kind of like, a lot of people just go to those meetings and it’s like, of, what are we going to get fed, and umm, you’re, you’re bodily present there, but you’re not present to advocate for you public, and to acquire additional
resources. Umm, because that, that really is what the library has become: a large conduit. And all these communities, for a lot of different things.”

Business cards, while a simple technology, provide the critical information needed for connectors like community health workers and libraries. They are a persistent and physical piece of evidence that a person was present, and they supply the user with the ideal ways to contact person.

The community health workers at Kentucky Homeplace frequently use a shared drive which includes health information curated by Homeplace administrators. For instance,

“We have what’s called a shared drive and its through like the diabetes association, the American heart association, and places like that that has legitimate information that’s true. We’re not allowed to go on there and just pull something up and take it and say here you go. We have to have it approved through Kentucky homeplace and then it has to be put on that and then we can use that.” [Community health worker 3]

Yet, administrators conveyed how difficult it is to keep that resource up to date.

“I’ve really wished we had, and we’ve talked about this a lot...if we had the personnel to do it, we could benefit from a person who did nothing or, 25 to 50% of their job was making sure that the community health workers had up to date information on all the health coaching that they would need to do. Say, somebody comes in with hypertension, you know. Here’s this from, you know, the American Heart Association. You know, some credible. Here’s a flyer, let’s go over this. You
know, that’s just…it’s huge. That’s uhh, that’s an ongoing need that changes a lot, that information changes and needs to be updated. And then, you know, pushing it out to all of these offices is a challenge.” [Community health worker administrator 1]

It would be wrongheaded to consider this a top-down approach to information dissemination. In fact, it is quite the opposite.

“…Because community health workers will find things in the community that they will have questions about. And they bring that forward, and so that gives us an opportunity to answer the question correctly, or to find the right information that they need. And so, we’re not always knowing, sitting in our offices exactly what they are dealing with out in the field. So they have an opportunity to bring that to us and say, ‘Hey, I’m getting questions on this,’ and ‘I’m getting questions on that subject,’ and ‘what information should I be giving back to the people’ and so it works both ways, and I think that’s the beauty of the community health worker that’s living in the midst of the community that can hear those things even before we hear it, or public health hears it, or the physician hears it. So, they are really the key, I think, to making sure that things are accurate, and that things are on time.” [Community health worker administrator 2]

4.5 Summary

The community health workers in this study articulated information needs that related to client information, information about services and resources in their communities, information about services and resources available independent of location,
and health information for themselves and for their clients or clients’ caregivers. While some of this information was sought after through information communication technologies, community health workers also indicated that they often seek information through interaction with other community health workers, and with representatives from community organizations. Community health workers function as interstitial agents, crossing boundaries between organizations, or between societal levels. The information that they create, seek, process, and disseminate functions as a boundary object. To do this, community health workers utilize a wide range of information communication technologies including modern modalities such as computers, the world wide web, email listservs, and shared servers, in addition to conventional modes of communication such as the phone, business cards, and printed pamphlets. Ultimately, the role of the community health worker, like that of a librarian, is as an infomediary, positioned to facilitate the flow or exchange of information from one body to another.
CHAPTER 5. DISCUSSION

5.1 Implications for the Public Health Workforce

Only time will reveal how new Public Health 3.0 orientation will ultimately impact the public health endeavor, but some conjecture is warranted. First, because the focus on social determinants of health is at the core of this repositioning, we should expect a greater emphasis on interdisciplinarity in public health education, and a greater emphasis on social theory. At the same time, the need for traditional quantitative data experts like epidemiologists will still be present, and as such, we would expect to see further specialization of the public health workforce. Second, we can anticipate a great emphasis placed on data-driven decisions. It follows from the desire to have new technologies and tools for real-time data capture, that these decisions could conceivably be as needed, short-term, and even based on small n’s. Third, while existing partnerships, with hospital systems, for instance, will continue, new partnerships will be necessary. Combining needs from both the technologies, tools, and data and the strategic partnerships, one could envision new partnerships with computer scientists and informaticians to establish data flows and interfaces for analysis. In this same line of thinking, it is possible new competencies in public health ethics that include a greater emphasis placed on privacy and security issues will be needed. To ensure that these new technologies and tools do not disproportionately impact only wealthy or privileged communities, attention must be given to the digital divide. Serious consideration must be given to rural and frontier areas where the technological infrastructure is simply not there.

The notion of Public Health 3.0 is fairly new, and as a result, there is not much to draw upon for how some of these concepts will be operationalized. It can, nevertheless, be
argued that the view of the health department as the chief health strategist will be one of the driving forces of the paradigm. If this is indeed the case, the connection between the health department and the community will be the essential element of a high achieving health department. It is in this area that the community health worker will thrive.

5.2 The role of the community health worker in Public Health 3.0

The origins of the community health worker, and indeed, one of the role’s defining characteristics, is as an interstitial agent, operating between the health care system and the community. This holds true irrespective of the type of health care system, whether it is clinically oriented or of the public health sector. One significant change on the horizon for community health workers throughout the United States is the demand for credentialing. This demand stems from a couple factors: first, there is a need to standardize the profession, and thus the services provided by community health workers. The second reason is the desire to have community health workers as a billable expense. A formal certification process would, in that sense, impact both hospitals and the public health sector equally. However, there is the potential for a differential impact between to the two sectors in two areas. The first is that a certified community health worker workforce has the potential to increase visibility, and as a result, demand for the position. Multiple community health workers from this study, in fact, talked about the need for visibility, or the need to justify of the community health worker’s role. This is exemplified in a response on barriers to information by one community health worker:

“I think, umm, there’s sometimes more of a barrier is umm, I don’t want to say they don’t take us serious, but they do. But I mean, kinda on that line, it’s like we’re not
recognized. We’re not a nurse, we’re not a doctor. We’re not recognized sometimes for what we do, or for our ability. I guess I’m not sure how to say that. So that’s where, we’re in the process of being certified. So I hope that will change. It’s not like a really big issue, but I think it could be. In places. For like, what we do, we’re ok with it. We go talk to the doctors. ” [Community health worker 1]

This could, in turn, drive up the cost to employ a community health worker and as such the, typically, wealthier clinical settings may be able to recruit community health workers who would have been working in the public health sector. Higher demand caused by the competition may also increase the prevalence and rate of specializations for the role. Moreover, we will likely see a new emphasis placed on the public health sector community health workers to collect data and report back to health departments. This new demand will be fueled, in part, by the lack of technological infrastructure in places where community health workers are employed, and the competing need to have real-time data. It will also be attributed to their intimate knowledge of the community.

Public health administrators should, however, be cautious, about community health workers collecting data. For example, in an op-ed recently published, the author suggested community health workers could be sources of information for individuals who might be in the early stages of planning a mass shooting (Slutkin, 2018). To be sure, mandated reporting for acts of violence, and negligence, is appropriate for community health workers, and yet, the author’s suggestion for this extension of responsibilities creates a slippery slope in which community health worker become used solely for their connection to the community. Policy makers run the risk of ostracizing the community health worker, and in combination with a certification process that already risks severing the trusted bond
between the community health worker and the community, we amplify the possibility of ostracization.

Ultimately, the transition to Public Health 3.0 will simply highlight the need, both in clinical settings and in the public health sector, to address the social determinants of health and the ability of the community health worker to contribute to that endeavor. Indeed, the existing body of literature that supports the use of community health workers to reduce health disparities caused by some of those social determinants is growing (Freeman, 2016; Simonsen et al., 2017). In fact, the need to address, social determinants of health, and the ability of community health workers was a theme that emerged from multiple participants:

“And it’s, you know, it addresses the whole person, you know, not just their health needs, but there, all their social determinants of health. You know, some of them may come in, the thing I like to see after I review the charts, I really like to see someone come in for eye glasses and then the community health workers going to find out, you know, there’s going to be a chain of things that follow that. You know, they haven’t had their colonoscopy, so they’ve got their colonoscopy, and then they find out that they’ve got a need with their home, and that they need a ramp, or that their roof is leaking, or that their, something. And then you get other family members that follow after that, so it’s it’s kinda it in a nutshell. I don’t know, that’s just the tip of the iceberg that they do.” [Community health worker administrator 1]
“One of the things that I think we do track, is the social determinants of health. You know, we didn’t used to call it that. They were “barriers,” so we were working on that long before the term was cool. You know, that, uhh, these were barriers to living a healthier life. And if you don’t have electricity in your home, and you don’t have running water, you know, you’ve got some barriers to, to get across there. And so, they know the community members in their community that help with those things.” [Community health worker administrator 2]

The challenge then, will be for other communities, such as information science, public health, and communication experts, to be willing to listen to the needs of the community health workers, and be willing to adapt to their changing world.

5.3 Implications for the Library

This study makes clear several possible implications for the Library, as an institution. It is with intention that “the Library” is painted with broad strokes because it is not one type of library or institution that can realize the full potential of these opportunities. Indeed, as more public libraries are partnering with health science libraries, librarians, and health professionals, it may, in fact, be more beneficial to consider multi-institutional and multidisciplinary approaches. The current study suggests five, broad areas that libraries have the opportunity to intersect with the information practices of community health workers. They are: develop and maintain up to date clearinghouses of local resources; participate in multisector organizing and resource-sharing events; host such events; provide instruction on how to search for, access, organize, evaluate, and use health information;
partner with local public health agencies to place and or fund health professionals in libraries.

5.4 Our Current Health Care Crisis

As this dissertation is being written, the world is reeling from the effects of a novel form of coronavirus, SARS CoV-2, or COVID-19. At the time of writing, the United States alone has over 120,000 confirmed cases and over 2,100 deaths (United States Centers for Disease Control and Prevention, 2020). Dr. Anthony Fauci, the Director of the National Institute of Allergy and Infectious Diseases, recently estimated between 100,000 and 200,000 people in the United States may die from COVID-19 (Allyn, 2020). The effects of the COVID-19 pandemic are expected to reach far beyond the health care system. For instance, approximately 3.3 million Americans filed unemployment claims during the week ending March 21, 2020 (Nguyen, 2020). Kentucky, like many states across the country, has declared a state of emergency, implemented bans on mass gatherings, and closed all in-person retail business that are not life-sustaining (Commonwealth of Kentucky, n.d.). Although scholars have already begun to advocate for the use of community health workers in preventative actions (Wiah et al., 2020), the UK Center for Excellence in Rural Health’s building as well as Kentucky Homeplace field offices throughout eastern Kentucky have been closed effective March 16, 2020 (Center of Excellence in Rural Health, 2020). It is hard to say how the COVID-19 pandemic and the current crisis will impact community health workers. With Kentucky Homeplace field offices closed, it seems unlikely their community health workers will be engaging in the type of preventative measures that Wiah and colleagues suggest (to prevent, detect, and respond). Moreover, the critical shortage of personal protective
equipment that hospitals are reporting (Ranney, Griffeth, & Jha, 2020) would seem to imply that if they were asked to participate in preventative measures, they would, perhaps, not be adequately safe-guarded. It is clear that the economic impact will result in many more individuals that will need health care and social services, and will perhaps be lacking insurance or means to afford it. In that case, one would expect the need for Kentucky Homeplace community health workers to increase, and dramatically, if our estimates about COVID-19’s impact to the economy are accurate. If, as some are suggesting, SARS CoV-2 manifests seasonally, we might expect community health workers to be better prepared to provide early detection or to play a role in educating the public about proper hand hygiene, social distancing, and other preventive measures such as coughing/sneezing into your sleeve or avoiding going out if you’re feeling ill. Indeed, future iterations of COVID-19, or any infectious disease, provide information professionals with an opportunity to connect frontline health care workers to the best health information. When federal agencies and figureheads consistently mislead the public (Paz, 2020), it becomes critical for trusted sources of information such as librarians and community health workers to fill the need for authoritative and accurate information.

5.5 Future Directions

This section will suggest future directions that stem from either limitations of the current study, or are warranted as a result of findings. These future lines of inquiry or application fall, broadly, into additional populations, different methods, areas for theoretical development, and policy development.
5.5.1 Future Populations

There are two distinct directions this research can take regarding additional populations. First, there is a line of research that would benefit from additional community health worker voices. Both urban and rural community counterparts would be valuable to work with. Additional rural community health workers, specifically those working outside Kentucky Homeplace, would contribute to a greater understanding of the information practices of rural community health workers. Urban counterparts would help develop an understanding of the unique challenges facing urban community health workers. In both cases, the importance of context-specific conditions would be valuable to recognize, yet, one line of questioning that warrants further examination is the commonalities between rural and urban community health workers’ boundary work. Research with so-called “boundary spanners” is indicating that both rural and urban community health workers engage in this form of collective information gathering and dissemination (Wallace et al., 2018, 2019). From this line of questioning comes the second line of research related to additional populations. It is clear that librarians play a critical role in acting as interstitial agents, working across micro, meso, and macro levels of society. This role is not unique to public librarians either. Indeed, there seems to be something about the library as an institution - and by consequence, librarians themselves - that is central to the professional identity and potentially not context-specific. As such, librarians from public libraries, health science libraries (consumer health, hospital, and academic medical), and law libraries would all pose interesting lines of inquiry.
5.5.2 Future Methods

There is a persistent problem in information practices research regarding the ability to capture and convey embodied and social ways of knowing (Lloyd & Olsson, 2019). Continued work, either with community health workers or librarians, ought to include further examination of this issue. This could include further participant observation or ethnography of community health worker training, certification, and continuing education sessions. Because the certification requirements implemented in 2019 require “40 hours of observation/preceptorship experience,” (Kentucky Department for Public Health, 2019), there is the potential to witness how social practices are developed, maintained, and most importantly, produced and reproduced through embodied practices.

Having an understanding of the uses of information communication technologies only begins to provide a deep understanding of the interaction between community health workers and technology, and how those technologies influence, and are influenced by, information practices. Consequently, Star’s ethnography of infrastructure could conceivably be a method for exploring that interaction between ICTs and information practices (Star, 2016). According to Star, infrastructure has the following characteristics: Embeddedness; Transparency; Reach or scope; Learned as part of membership; Links with conventions of practice; Embodiment of standards; Built on an installed base; Becomes visible upon breakdown; and Is fixed in modular increments, not all at once or globally (Star, 2016). It is easy to see how an ethnography of infrastructure, even just of one or more of these characteristics, as they relate to community health workers’ use of ICTs, or, simply as they relate to information practices.
5.5.3 Future Theoretical Development

There exists a mutual framework between science and technology studies and community informatics in the Commons that warrants examination in light of this study’s findings. Garrett Hardin’s seminal piece in which he described what he termed “the tragedy of the commons” set the stage for a variety of approaches geared toward solving the dilemma of the commons (Hardin, 1968). His argument was that either the state (following Hobbes) or the market (following Smith) must regulate common pool resources. Lin Ostrom, however, argues that there is a third possibility: Collectives. Ostrom uses several examples from across the globe to illustrate how common pool resources such as fisheries or water used for farming, can be regulated by Collectives (Ostrom, 1990). She found that successful collectives exhibited seven common characteristics: congruence between appropriation and provision rules and local condition; collective choice agreements; monitoring of the common pool resource, graduated sanctions for individuals who broke the agreement; conflict resolution mechanisms; and minimal recognition of rights to organize (Ostrom, 1990). Since her preliminary work, scholars, including herself, have used those characteristics of successful common pool resource governance to identify successful commons, and further, to develop frameworks for evaluating them. For instance, Ostrom developed a framework for analyzing institutions termed Institutional Analysis Development that she used to evaluate knowledge commons (Ostrom, 2009). This framework includes a process that maps underlying factors such as bio-physical variable, community attributes, and rules-in-use, across a specific action area, consisting of both context/situation and the actors, to outcomes. The Commons, both in terms of successful characteristics, and as a foundation for evaluative criteria provides an interesting lens from
which to view community health workers. For instance, one could envision the community health worker as the common pool resource used by the health care system. This would provoke questions such as: how is the use of community health workers regulated; or what rules are in place that monitor the health care system’s use of community health workers? Conversely, one could envision community health workers as a collective with the provision of their resources as a common pool resource. This, in turn, would prompt questions such as: what sort of collective choice agreements do community health workers have amongst themselves; are there conflict resolution mechanisms; do they in fact have the minimal recognition of the right to organize? An additional line of questioning, and perhaps a more advantageous one, would be questions derived from the Institutional Analysis Development framework. Assuming one was able to develop an understanding of the two antecedent categories, one could anticipate or understand particular outcomes; or if desired outcomes are known, it would be conceivable to work backward to design, for instance, the appropriate rules-in-use.

5.5.3.1 Communities of Practice

It is easy to see how a community of practice framework could be applied to community health workers, and how it would both illuminate and problematize particular aspects of community health worker practice. For instance, given the wide variety of roles community health workers perform, what are the common practices? Within stated communities of community health workers, what are the common resources? Is there a common vocabulary related to their roles, and where does that come from? Is it prescribed, has it evolved naturally over time? What is the flow of information through the community?
5.5.3.2 Social Practices

Reinforcing both communities of practice and boundary objects frameworks is social practice theory. Social practice scholarship has developed “...a framework of analysing the relations between bodies, agency, knowledge and understanding that can likewise be understood as ‘praxaeological’” (Reckwitz, 2002). Fittingly, information practices also draws upon social practice theory for its epistemological and ontological claims, notably, that knowledge and reality are socially constructed and that these realities are situated, embodied and enacted through practice. Indeed, by extension, it could be argued that information practices are contingent upon the development and maintenance of boundary objects, which, in turn, are socially constructed through communities of practice. Furthermore, it compels scholars to look beyond descriptive studies, and encourages critical analysis of technical discourses and practices.

5.5.3.3 Gaps in Information Practice Literature

Because the scope of the health science library universe is not limited to health care systems, those communities not only include health care professionals and the health care system, but also academic communities, local and federal government, private industry, and the public sphere. Information practices, conceived in this way, not only provide a descriptive tool, but could be used for a theoretical foundation and evaluative instrument to assess information outreach, two actions Whitney and colleagues determined are seriously lacking in the health science library community’s outreach efforts. While work such as Johannisson and Sundin’s research on the information practices of a community of nurses (Johannisson & Sundin, 2007) is one example, there nonetheless are few others.
Conceived broadly, health information outreach efforts undertaken by the health science library community have yielded few successes. One could speculate that this is a result of outreach funding that rarely provides a mechanism for meaningful, long-term relationships needed to develop an in-depth understanding of community health workers. It could also, in part, be a result of the disconnect between the understanding of information practices and the creation of resources and services for the respective communities. Whatever the reason, though, the solution is clearly more communication between and collaboration between the library community and community health workers.

5.6 Closing Remarks

This must only be the beginning. The findings from this study illustrate the need for more data regarding the information practices of community health workers, and how their role as infomediaries addresses The findings from this study compel both researchers and practitioners, particularly in library and information science, to create opportunities for dialog across the disciplines. There are mutually beneficial outcomes from research, and there is common ground to be found between our practice communities. The need is simply far too great, and the potential is endless.
## APPENDIX 1: LIST OF INTERVIEWS

<table>
<thead>
<tr>
<th>Individual</th>
<th>Title</th>
<th>Type of interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fran Feltner</td>
<td>Kentucky Homeplace Principal Investigator</td>
<td>Semi-structured, in-depth</td>
</tr>
<tr>
<td>Mace Baker</td>
<td>Kentucky Homeplace Director</td>
<td>Semi-structured, in-depth</td>
</tr>
<tr>
<td>Kentucky Homeplace Community Health Workers (n=22)</td>
<td>Community Health Worker</td>
<td>Semi-structured, in-depth, ethnographic</td>
</tr>
<tr>
<td>Amanda Heuser</td>
<td>President, Kentucky Association of Community Health Workers</td>
<td>Semi-structured, in-depth</td>
</tr>
<tr>
<td>Angela McGuire</td>
<td>Vice President, Kentucky Association of Community Health Workers</td>
<td>Semi-structured, in-depth</td>
</tr>
<tr>
<td>Kathrina Hamilton</td>
<td>Treasurer, Kentucky Association of Community Health Workers</td>
<td>Semi-structured, in-depth</td>
</tr>
<tr>
<td>Shirley Prater</td>
<td>Secretary, Kentucky Association of Community Health Workers</td>
<td>Semi-structured, in-depth</td>
</tr>
<tr>
<td>Laura Eirich</td>
<td>Community Health Worker Program Manager, Kentucky Department of Public Health</td>
<td>Semi-structured, in-depth</td>
</tr>
<tr>
<td>Connie White</td>
<td>Senior Deputy Commissioner, Kentucky Department of Public Health</td>
<td>Semi-structured, in-depth</td>
</tr>
<tr>
<td>Public Library Directors in the Kentucky Homeplace 30 County Service Area (n=30)</td>
<td>Library Director</td>
<td>Semi-structured</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Directors of Medical or Academic Libraries that may serve the Kentucky Homeplace Service Area (n=6)</td>
<td>Library Director</td>
<td>Semi-structured</td>
</tr>
</tbody>
</table>
APPENDIX 2: SCRIPT FOR COMMUNITY HEALTH WORKER SEMI-STRUCTURED, IN-DEPTH INTERVIEWS

Thank you so much for agreeing to participating in this study. Today, I’ll be asking you questions about your job, about how you look for and access information, and about what information needs you might have. Before we get started, do you have any questions for me?

[Role]

1. Tell me about your job.
   a. What is your title?
   b. What community do you work in/with?
   c. Where do you work mostly? What county/district?

2. How long have you been working as a ________?

3. Can you walk me through a day as a ________?

[General information needs]

4. Are there times during your day that you have questions you need to find information for?
   a. Where do find those answers?

5. For the/one of the examples you just gave, can you walk me through the steps you would use to find the information to answer that question starting with the first thing you might do?

6. What types of information (e.g. health, transportation, social needs, work advice/best practices, etc.) do you need as a ________?

7. Where do you currently get access to [type] information?
   a. Web sites, web searches, online literature searches, online or printed research, emails from coworkers, email distribution lists, online newsletters, books or other hard copy documents, Homeplace administrators?
   b. What information sources are the most credible and or up-to-date?
   c. What information format is the most useful to you? For example, pamphlets, books, or websites?
d. What information format is the most useful to the people you serve? For example, pamphlets, books, or websites?

8. How do you prefer to get [type] information?
   [For online information]

9. What do you like most about accessing [type] information on the internet?
10. What do you like least about accessing [type] information on the internet?
11. What is the process you use to find [type] information you need on the internet?
    a. Would you be willing to walk me through a recent example of this?
12. What would make this process even better?
   [For print information]

13. What do you like most about accessing [type] information in print?
14. What do you like least about accessing [type] information in print?
15. What is the process you use to find [type] information you need in print?
    a. Would you be willing to walk me through a recent example of this?
16. What would make this process even better?
   [For all information]

17. How does information (either information that has been supplied to you, or that you have to go looking for) impact your job?
    a. Does it impact your ability to work with clients? How?
18. How do you store information that you plan to access again in the future?
   [Barriers to information]

19. Do you feel there is a need to improve access to [type] information related to your job as a __________?

20. Is there anything that prevents you from finding or accessing the information you need to do your job?
   [Demographics]

21. Age
22. Race/Ethnicity

23. Gender

[Further information]

24. Who do you feel most responsible to in your work? The health care system, Kentucky Homeplace, the community you work in, someone/something else?

a. Do you feel the values between or across those different communities are the same? How?

b. Do you feel the values between or across those different communities work together? How?

25. Is there anything else you would like to tell me about being a __________ in general, about information, or anything else we talked about today?

26. What advice do you have for other community health workers about looking for information?

27. Do you have any suggestions for potential interview questions?
APPENDIX 3: SCRIPT FOR COMMUNITY HEALTH WORKER ADMINISTRATORS

Thank you so much for agreeing to participating in this study. Today, I’ll be asking you questions about your job, about your relationship to community health workers, and about your understanding of their information needs, information seeking, and any barriers that they may have to information. Before we get started, do you have any questions for me?

[Role]

1. Tell me about your job.
   a. What is your title?
   b. In this role, what is your relationship to community health workers?

[Perceived information needs]

2. What types of information do you feel community health workers need for their job?

3. Do they have access to that information?

4. What would need to happen to make that information more accessible?

[Seeking]

5. How do community health workers look for information?

6. Are there ways that your organization facilitates this? For example, do you publish pamphlets or websites?

7. Does your organization have a listserv or other means for community health workers to communicate or exchange information?

[Barriers]

8. Are there any barriers to information for community health workers?

[Training]

9. Do community health workers receive any type of training that helps them identify information needs?

[Credentialing]
10. Given the discussion about credentialing community health workers, are there skills or competencies that are either included in current documentation, or are needed, that relate to information needs, seeking, or barriers?

[Further information]

11. Is there anything else you think I should know about community health workers?

12. What advice do you have for community health workers about looking for health information?

13. Do you have any suggestions for potential interview questions?
APPENDIX 4: RECRUITMENT LETTER TO COMMUNITY HEALTH WORKERS

Dear [Community Health Worker]

My name is Robert Shapiro, and I am a doctoral student in the College of Communication and Information at the University of Kentucky. For my dissertation, I am studying the information practices of community health workers. “Information practices” is a term used to describe actions such as how a person looks for information, environmental conditions such as what access or barriers a person might have to information, and also how those practices are learned and shared through professional networks.

I am writing today to ask if you would be willing to have a conversation about your information practices. Our conversation should take between 30 to 60 minutes, and can be conducted over the phone, through video conferencing software, or in some cases, in person.

This study has been approved by the University of Kentucky IRB...

Thank you, in advance, for your time.

Robert Shapiro
Dear [Key Informant]

My name is Robert Shapiro, and I am a doctoral student in the College of Communication and Information at the University of Kentucky. For my dissertation, I am studying the information practices of community health workers. “Information practices” is a term used to describe actions such as how a person looks for information, environmental conditions such as what access or barriers a person might have to information, and also how those practices are learned and shared through professional networks.

I am writing today to ask if you would be willing to have a conversation about your understanding of the information practices of community health workers. Our conversation should take between 30 to 60 minutes, and can be conducted over the phone, through video conferencing software, or in some cases, in person.

This study has been approved by the University of Kentucky IRB...

Thank you, in advance, for your time.

Robert Shapiro
# APPENDIX 6: PUBLIC LIBRARY DIRECTORS IN THE KENTUCKY HOMEPLACE 30 COUNTY SERVICE AREA

<table>
<thead>
<tr>
<th>Director</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Ritcher</td>
<td>Bath County Public Library Director</td>
</tr>
<tr>
<td>Jeanna Cornett</td>
<td>Bell County Public Library District Director</td>
</tr>
<tr>
<td>Debora Cosper</td>
<td>Boyd County Public Library Director</td>
</tr>
<tr>
<td>Stephen Bowling</td>
<td>Breathitt County Public Library Director</td>
</tr>
<tr>
<td>Nellie Middleton</td>
<td>Carter County Public Library Director</td>
</tr>
<tr>
<td>Linda Sandlin</td>
<td>Clay County Public Library Director</td>
</tr>
<tr>
<td>Kathy Watson</td>
<td>Estill County Public Library Director</td>
</tr>
<tr>
<td>Jonathan Campbell</td>
<td>Floyd County Public Library Director</td>
</tr>
<tr>
<td>Sharon Haines</td>
<td>Greenup County Public Library Director</td>
</tr>
<tr>
<td>Richard Hayes</td>
<td>Harlan County Public Library Director</td>
</tr>
<tr>
<td>Ashley Wagers</td>
<td>Jackson County Public Library Director</td>
</tr>
<tr>
<td>Karen Daniels</td>
<td>Johnson County Public Library Director</td>
</tr>
<tr>
<td>Tammie L. Owens</td>
<td>Knott County Public Library Director</td>
</tr>
<tr>
<td>Lana Hale</td>
<td>Knox County Public Library Director</td>
</tr>
<tr>
<td>Peggy Mershon</td>
<td>Laurel County Public Library Director</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Carlie Pelfrey</td>
<td>Lawrence County Public Library Director</td>
</tr>
<tr>
<td>Sonya Spencer</td>
<td>Lee County Public Library Director</td>
</tr>
<tr>
<td>Clifford Hamilton</td>
<td>Leslie County Public Library Director</td>
</tr>
<tr>
<td>Alita Vogel</td>
<td>Letcher County Library District Director</td>
</tr>
<tr>
<td>Melanie Cain</td>
<td>Magoffin County Public Library Director</td>
</tr>
<tr>
<td>Tammy Jones</td>
<td>Martin County Public Library Director</td>
</tr>
<tr>
<td>Melissa Wells</td>
<td>Menifee County Public Library Director</td>
</tr>
<tr>
<td>Allison Ennis</td>
<td>Morgan County Public Library Director</td>
</tr>
<tr>
<td>Lesa Marcum</td>
<td>Owsley County Public Library Director</td>
</tr>
<tr>
<td>Elaine Neace</td>
<td>Perry County Public Library Director</td>
</tr>
<tr>
<td>Louella Allen</td>
<td>Pike County Public Library Director</td>
</tr>
<tr>
<td>Allison Vanlandingham</td>
<td>Powell County Public Library Director</td>
</tr>
<tr>
<td>Belinda Smith</td>
<td>Rock J. Adkins (Elliott County) Public Library Director</td>
</tr>
<tr>
<td>Tim Gampp</td>
<td>Rowan County Public Library Director</td>
</tr>
<tr>
<td>Deborah Baker</td>
<td>Wolfe County Public Library Director</td>
</tr>
</tbody>
</table>
APPENDIX 7: SCRIPT FOR PUBLIC LIBRARY DIRECTOR INTERVIEWS

1. Can you tell me your name, your title, the name of the library you work in?

2. [In the cases where the county is not in the library name] What county does your library serve?

3. What is the general population of people who use your library?

4. Does your library receive questions from patrons about health issues?

5. Do you feel your librarians/staff are prepared to answer questions about health issues?

6. Does your library ever work with health professionals or health care organizations?

7. Are there particular resources that you use frequently to answer questions about health information?

8. Do you purchase resources specifically for health information?

9. What, if any, barriers/difficulties does your library experience when providing health information to your patrons?

10. Are there ways that academic institutions (like the University of Kentucky, Morehead State University, or Eastern Kentucky University) can help you be better prepared to field questions about health issues?

11. Is there anything else you think I should know about health information and [name of the library]?

12. What advice do you have for other library directors about outreach to health professions like community health workers?

13. Do you have any suggestions for potential interview questions?
APPENDIX 8: RECRUITMENT LETTER TO LIBRARY DIRECTORS

Dear [Library Director]

My name is Robert Shapiro, and I am a doctoral student in the College of Communication and Information at the University of Kentucky. Part of my dissertation work is trying to understand how the health information needs of communities are being met by health professionals and information organizations. In many cases, public libraries are both sources of health information, as well as points of referral, for the general public and some health professionals.

I am writing today to ask if you would be willing to have a conversation about your library’s role in answering questions about health issues. Our conversation should take between 30 to 45 minutes, and can be conducted over the phone, through video conferencing software, or in some cases, in person.

This study has been approved by the University of Kentucky IRB...

Thank you, in advance, for your time.

Robert Shapiro
### APPENDIX 9: REGIONAL ACADEMIC AND HEALTH SCIENCE LIBRARIANS

<table>
<thead>
<tr>
<th>Librarian</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rick Brewer, Director</td>
<td>University of Kentucky, Medical Center Library</td>
</tr>
<tr>
<td>Melinda Robertson, Medical Librarian</td>
<td>University of Pikeville, Medical Library</td>
</tr>
<tr>
<td>Julie Howe, Director of e-Learning and</td>
<td>Sommerset Community College</td>
</tr>
<tr>
<td>Health Science Librarian</td>
<td></td>
</tr>
<tr>
<td>Jaime Grace, Clinical Coordinator</td>
<td>Southeast Kentucky Area Health Education Center Library</td>
</tr>
<tr>
<td>Assistant and Librarian</td>
<td></td>
</tr>
<tr>
<td>Cindi Farmer</td>
<td>Baptist Health, Corbin</td>
</tr>
</tbody>
</table>
APPENDIX 10: SCRIPT FOR REGIONAL ACADEMIC AND HEALTH SCIENCE LIBRARIAN INTERVIEWS

1. Can you tell me your name, your title, the name of the library you work in?

2. What is the general population of people who use your library?

3. Does your library ever work with health professionals or health care organizations outside of your organization?
   If so, are these special projects or are they part of the day-to-day operation of the library?

4. Does your library work with community health workers?

5. Does your library conduct formal outreach programs?
   Does your library have a position dedicated to outreach?

6. Does your library work with other libraries when conducting outreach?

7. Does your library work with other organizations (not libraries) when conducting outreach?

8. Does your library work with external organizations on informal projects or projects you would not consider “outreach”?

9. Do you purchase any resources specifically for patrons outside of your organization? That is, for outreach or special projects?

10. Is there anything else you think I should know about health information outreach and [name of the library]?

11. What advice do you have for other library directors about outreach to health professions like community health workers?

12. Do you have any suggestions for potential interview questions?
APPENDIX 11: RECRUITMENT LETTER TO REGIONAL ACADEMIC AND HEALTH SCIENCE LIBRARY DIRECTORS

Dear [Library Director]

My name is Robert Shapiro, and I am a doctoral student in the College of Communication and Information at the University of Kentucky. Part of my dissertation work is trying to understand how the health information needs of communities are being met by health professionals and information organizations. In many cases, libraries are both sources of health information, as well as points of referral, for the general public and some health professionals.

I am writing today to ask if you would be willing to have a conversation about your library’s role in outreach to health professionals. Our conversation should take between 30 to 45 minutes, and can be conducted over the phone, through video conferencing software, or in some cases, in person.

This study has been approved by the University of Kentucky IRB...

Thank you, in advance, for your time.

Robert Shapiro
APPENDIX 12: CONSENT TO PARTICIPATE

Key Information for [Information Practices of Community Health Workers]

This study seeks to understand the information practices of community health workers. We are asking you to choose whether or not to volunteer for a research study about community health workers’ information practices.

This page is to give you key information to help you decide whether to participate. We have included detailed information after this page. Ask the research team questions. If you have questions later, the contact information for the research investigator in charge of the study is below.

What is the study about and how long will it last?

“Information practices” is a term used to describe actions such as how a person looks for information, environmental conditions such as what access or barriers a person might have to information, and also how those practices are learned and shared through professional networks. With this study, we hope to gain a better understanding of the information practices of community health workers. You have been asked to participate in this study either because of your role as a community health worker, or as a person who may have an understanding or impact of the information environment community health workers operate in. Your participation in this research will last about 30 minutes.

What are key reasons you might choose to volunteer for this study?

By volunteering for this study, you contribute to our understanding of information practices, to the role of community health workers, and to how communities such as public and health science libraries may adapt to meet the information needs of community health workers.

What are key reasons you might choose not to volunteer for this study?

While there are no risks or repercussions for not participating in this study, we know that participating in any research takes time, and for that reason, you may not wish to participate.

Do you have to take part in the study?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any services, benefits, or rights you would normally have if you choose not to volunteer.

What is you have questions, suggestions, or concerns?
The person in charge of this study is Robert Shapiro from the University of Kentucky, College of Communication and Information. If you have any questions, suggestions, or concerns regarding this study, or you want to withdraw from the study, his contact information is:

Robert Shapiro  
317 Lucille Little Fine Arts Library  
Lexington, KY 40506  
Phone: 859-218-2297  
Email: shapiro.rm@uky.edu

If you have questions, suggestions, or concerns about your rights as a volunteer in this research, contact staff in the University of Kentucky Office of Research Integrity between the business hours of 8am and 5pm EST, Monday-Friday at 859-257-9428 or toll free at 1-866-400-9428.
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VITA

Robert M. Shapiro II

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PhD – University of Kentucky, Lexington, KY – May 2020 (expected)
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MALS – University of Kentucky, Lexington, KY – May 2010
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BA – Appalachian State University, Boone, NC – May 2005
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   Minor: Art History

Professional Experience:

Visiting Assistant Professor
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Assistant Director for Research, Education, and Clinical Services
May 2016 – July 2017
University of Kentucky Chandler Medical Center Library, Lexington, KY
Public Health Librarian, Academic Liaison to the College of Public Health
June 2010 – May 2016
Tenure granted July 2015
University of Kentucky Chandler Medical Center Library, Lexington, KY

Information Specialist
December 2009 – May 2010
University of Kentucky Center for Public Health Systems and Services Research (CPHSSR), Lexington, KY

**Teaching Experience:**

Visiting Assistant Professor
August 2017 – Present
University of Kentucky, School of Information Science, Lexington, KY

Part-time Instructor
December 2016 – August 2017
University of Kentucky, School of Information Science, Lexington, KY

**Assistantships:**

Research Assistantship
March 2008 – December 2009
University of Kentucky Center for Public Health Systems and Services Research (CPHSSR), Lexington, KY

Research Assistantship
May 2009 – August 2009
University of Kentucky School of Library and Information Science, Lexington, KY
Graduate Assistantship
August 2007 – April 2008
Kentucky Department for Environmental Protection, Frankfort, KY

Awards:
Medical Library Association, Midwest Chapter Research Poster Award, 2015
University of Kentucky Libraries’ Charles T. Wethington Research Award, 2015
University of Kentucky Libraries’ Charles T. Wethington Research Award, 2016

Publications:


Oral Presentations:


Burns CS, Nix T, Shapiro II RM, Huber JT. “Codifying discrepancies among MEDLINE platforms to advance instruction and practice” ALISE 2019; Knoxville, TN; September 24-26, 2019.

Nix T, Shapiro II RM, Burns CS, Huber JT. “Variation and outliers in search results among MEDLINE-based databases: A longitudinal study. Medical Library Association Annual Meeting and Exhibition; Chicago, IL; May 3-8, 2019.

Shapiro II RM, McGinley TM, Noe MN, Fagan JM. “State libraries and the state public health workforce: Exploring services and information access” Presented at the Medical Library Association Annual Meeting and Exhibition; Toronto, ON; May 13-18, 2016.

Frisby BN, Limperos AM, Burchett MR, Nestmann MA, Gentile C, Wombacher K, Shapiro II RM. “Rhetorical and relational strategies of online instructors: Enhancing students’ experiences in online courses” at the Annual Meeting of the National Communication Association: Chicago, IL; November 20-12, 2014.

Shapiro II RM. Moderated the Public Health/Health Administration Section program, “Building Common Ground: Partnerships with Faculty, Practitioners, Librarians, and the Community for Community-Based Participatory Research” at the Medical Library Association Annual Meeting and Exhibition; Chicago, IL; May 16-21, 2014.

Shapiro II RM. Moderated the National Program Committee sponsored session, “Lightning Talks for Our Information Future” at the Medical Library Association Annual Meeting and Exhibition; Chicago, IL; May 16-21, 2014.
**Shapiro II RM.** Moderated the “Technology, Data, and Methods” session at the 5th Annual Public Health Services and Systems Research, Keeneland Conference: Lexington, KY; April 16-19, 2012.

**Shapiro II RM.** Presented on the development of the, then forthcoming, research agenda at the Closing Panel Session of the 4th Annual Public Health Systems and Services Research [sic], Keeneland Conference: Lexington, KY; April 12-14, 2011.


**Shapiro II RM, Dearinger AT, Howard AF, Ingram RC, Young ZG.** “Information-seeking behaviors of public health practitioners: a case study from a Kentucky health department.” Presented at the 2010 Midwest Chapter MLA/ Wisconsin Health Science Library Association Joint Conference: Madison, WI: September 24-28, 2010

**Shapiro II RM.** “Ready-made resources for public health systems and services researchers” Presented at the 3rd Annual Keeneland Conference, Mini-grantee Ancillary Meeting: Lexington, KY; April 20-22, 2010

**Shapiro II RM, Howard AF, Dearinger AT, Young ZG, Ingram RC, Cooper S.** “Information-seeking behaviors of public health practitioners” Presented at the University of Kentucky School of Library and Information Science, American Library Association Research Day: Lexington, KY; April 30, 2009

**Shapiro II RM, Brewer RA, Ingram RC, Young ZG.** “Mapping the literature of public health systems and services research from impetus to present” Presented at the 2008 Midwest Chapter MLA/ Michigan Health Science Library Association Joint Conference: Troy MI; October 17 – 21, 2008


Poster Presentations:


Shapiro II RM, McGinley T, Noe M. “State Libraries & Public Health Information Access: Results from the Greater Midwest state libraries” Presented at the Midwest MLA Chapter Meeting; Louisville, KY; October 2-6, 2015.

Shapiro II RM, Huber JT, Nix T, Pfeifle AL. Enhancing the navigation care model: Results from two qualitative content analyses of navigator roles and responsibilities. Presented at the 7th International Conference on Interprofessional Practice and Education – All Together Better Health VII: Pittsburgh, PA; June 6-8, 2014

Howard AF, Lamberth CL, Shapiro II RM, Coil LC, Pendley R. Public information officers in the public health system A profile of public health communicators. Presented at the 141st American Public Health Association Annual Meeting and Exposition: Boston, MA; November 2-6, 2013

Huber JT, Shapiro II RM, Gillaspy M. Top down vs. bottom up: The social construction of health literacy. Presented at the 2013 Medical Library Association Conference: Boston, MA; May 3-8, 2013

Shapiro II RM, Dearinger AT, Howard AF, Ingram RC, Young ZG. “Information-seeking behaviors of public health practitioners: a case study from a Kentucky health

Shapiro II RM, Howard AF, Dearinger AT, Young ZG, Ingram RC, Cooper S. “Information-seeking behaviors of public health practitioners” Presented at the 2009 Midwest Chapter MLA Annual Conference: Columbus, OH; October 3 – 6, 2009

Brewer RA, Shapiro II RM, Ingram RC, Pendley RP. “Ready-made resources for public health systems and services researchers” Presented at the 2009 Midwest Chapter MLA Annual Conference: Columbus, OH; October 3 – 6, 2009
