CRAFTING NEW MATERIALIST RESEARCH FRAMEWORKS FOR COLLABORATIVE RESPONSE

by

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For my dad, who reminded me I was a teacher, and first taught me to see the whole board.

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ABSTRACT

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The recent HIV outbreak in Scott County, Indiana demonstrates how complex socio-technical problems strain current conceptions of public problem solving, and how practitioners, including technical communication researchers, need methods that address immediate needs while supporting sustained responses to complex problems. The Scott County outbreak, and the trajectory of the needle exchange policies which emerged in its aftermath, show how attention to visible infrastructure, created through formal and informal cooperation in response to problems, creates opportunities for sustained, collaborative engagement with these and other socio-technical problems. By integrating multiple kinds of expertise and embracing the complexities of working across disciplinary and community boundaries where language, methods, and expected outcomes may differ, technical communicators can better cooperate to address public problems by developing responses which speak to the underlying inequalities frequently associated with both public policy and technical communication.

Drawing on new materialist theory, technical communication research methods, and participatory research design, I develop frameworks for research calibrated to the messiness of wicked problems. First, I use public documents such as press releases and health department guidelines to develop a case study tracing the recent trajectory of harm reduction policies in Indiana. Using the same data set of public documents, I use iterative coding and situated analysis to map the voices, shifts, and decision-making practices of multiple stakeholders. The

initial results of this qualitative analysis are used as a basis for interviews with public health practitioners, community activists and scholars in related fields to consider differences in language, discursive practice, and methods for operationalizing knowledge. Rather than treating technical communication as a bridge between stakeholders, mapping the entanglement of methods for practice and research across disciplinary and institutional boundaries makes visible the embedded work of technical communication. Research practices that work to keep this infrastructure visible will help technical communicators better collaborate for response to the multiple exigencies of complex problems.

1.INTRODUCTION

1.1 Precarity and action: Methods for engaging complex problems

The first story I read about the 2015 outbreak of HIV in Southeast Indiana was a *Huffington Post* article about the lack of Planned Parenthood funding for clinics in rural Indiana (Bassett, 2015). The headline of the article, "Indiana Shut Down its Rural Planned Parent Parenthood Clinics and Got an HIV Outbreak" was written with the combination of scolding and schadenfreude one expects from the *Huffington Post* in our current moment of political and ideological polarization. The headline indulges in the type of satisfying "I told you so" that confirms a narrative readers already agree with. An article like this exemplifies the popular evidence well-meaning readers often point to when trying to explain the links between policy, social justice, and peoples' lived experience. "Of course," we say, "when you cut off funding to rural health care, including the HIV testing provided by Planned Parenthood clinics, the possibility for disease outbreaks like this one seem inevitable." This ideological-line drawing feels good. It identifies someone to blame, justifies our anger, and gives us something actionable to do—advocate for Planned Parenthood funding. However, this narrative of partisan shame and blame neither addresses the actual problems of those experiencing chaotic drug use, nor engages the complex set of implications rural communities face thanks to a decades-long opioid epidemic. Framing then-Governor Mike Pence as merely a conservative roadblock does not address the complex intersections of stigma, poverty, joblessness, lack of access to healthcare, and public funding deficits that the outbreak suddenly made visible outside of Scott County. Bassett quotes the regional Planned Parenthood director twice, and cites the HIV outbreak to argue for more funding for rural public health, specifically through Planned Parenthood. However, Bassett barely

acknowledges that the outbreak was a result of IV-drug use. She makes a passing mention, in the last line of the article, how, in response to the crisis, Governor Pence authorized a temporary syringe exchange in Scott County to curb the spread of HIV in the Indiana community. This approach, that highlights the governor's bad policy regarding rural public health, and reproductive health specifically, highlights an important problem, but doesn't require readers to think about the complexity of opioid addiction, and how the governor's response, while insufficient and frustrating, is a significant shift in operational response to the effects of addiction, and possibilities for response outside of predictable and partisan public narratives.

I am interested in the intersections between the public rhetoric surrounding complex problems, and how we, as scholars and community members, mount a response to problems that seem insurmountable. Problems like the opioid epidemic are deeply political, and our rhetoric can't be separated from the politics evident in the *Huffington Post* article, but productive action is possible if we pay attention to how operational response shapes what is possible as it is entangled with, and sometimes functioning outside the constraints of public political discourse. How we respond to climate change is another example that helps to articulate the site of this research. The roots of this project developed when I read an op-ed about how we should respond, philosophically, to the crises of the Anthropocene (Scranton, 2013). The article compared the breakdowns of civil infrastructure resulting from the U.S. invasion of Baghdad in 2003, and the collapse of infrastructure in New Orleans in the wake of Hurricane Katrina. In both cases, Scranton's U.S. Army unit was deployed to respond. He listed the military, scientific and economic experts who named global climate change as a security threat that will cause "widespread upheaval—not possibly but *inevitably*...the question is no longer whether global warming exists or how we might stop it, but how we are going to deal with it" (Scranton, 2013). He argues that

humanists and philosophers are ill-equipped for research that addresses today's complex problems. Philosophy and humanistic analysis, he says, can't help us respond to rising carbon dioxide levels, save honeybees, or hold back the rising oceans. Instead, he says, we should focus on the larger philosophical question of "What does *my life* mean in the face of death?...How do we make meaningful choices in the shadow of our inevitable collapse?" These questions, Scranton argues, are neither logical nor empirical, but philosophical. How do we "learn how to die" as a civilization? While I agree that the complicated problems of the Anthropocene require both philosophy and rhetorical theory, they can't be separated, as Scranton argues, from the logical and empirical.

The dichotomy Scranton sets up between the philosophical and the empirical is one we must challenge as humanities scholars, and why I frame new materialist methods as central to research that seeks to engage and address the problems we face. New materialist scholars like Mol (2002) and Barad (2007) argue that separating our philosophical and epistemological questions from our ontological questions is impossible given the entangled nature of knowing and being. I'll return to their argument shortly, but thinking about the ways our epistemology— what we know, and our ontology—ways of being in the world, are co-created is necessary for understanding how new materialist methodologies can help us to engage the very questions Scranton located outside the humanities. His op-ed was published a year after Superstorm Sandy crippled the Eastern Seaboard and five years before Hurricane Harvey struck Houston, flooding a major U.S. city for weeks. This unprecedented "100 year storm" was followed only a month later by Hurricane Maria which devastated parts of the Caribbean, leaving thousands of U.S. citizens in Puerto Rico without electricity for at least 11 months (Campbell, 2018). To put it another way, regardless of our philosophical frames for understanding this devastation, civil engineers in New York City now operate and make decisions in a world where the subways are subject to massive flooding from

storm surges. Emergent crises, regardless of ideological stance or political will, require us to respond to the material conditions they create. As rhetoricians, technical communicators, and humanities scholars we have an ethical responsibility to couple our critique and analysis with partnership and action. The ways we interpret theory and deploy it in response to problems cannot be separated from the ontological consequences of that critique. This means our work can and should help to reinvent what is possible as we respond to complex problems.

I find it useful to consider how we can best make meaningful, even constructive choices as we build communities despite a seemingly constant barrage of political, social, environmental, and technological upheaval. As a rhetorician and a technical communicator, I know our work challenges the dichotomy Scranton establishes between philosophical and empirical work. Technical communication and public rhetoric are among the fields that operate at this intersection by making meaning and helping the public find ways forward in response to current material conditions that previously seemed unimaginable—but are now everyday realities. Making sense of disasters and working to improve how we respond is well-established work in technical communication (Blythe, Grabill & Riley, 2008; Potts, 2013 Star & Strauss, 1999; Weick, 1988, 2005). Technical communication scholars also interrogate the ways our social infrastructure is shaped by the mundane documentation and everyday decision making of practitioners. This project is an exploratory response, grounded in technical communication, public rhetoric and new materialist theory, to Scranton's question: "What does it mean to be human in the Anthropocene?" I am exploring a similar question, but I am also making an argument for humanities scholars to engage complex problems because we have substantive contributions to make to the reimagining of a changing world. While we might be dying, we aren't dying today—and there is so much to do to respond to the precarious world Scranton describes (the same world we continue to

experience in our newsfeeds and communities every day.) We learn to live in the precarity of this moment by figuring out how to *do* this moment better, by making things less precarious where we can, and by being responsible to one another. I ask us to consider the possibilities of technical communication research that responds to complex problems by exploring research methods that are reflexive, participatory, and actively help diverse groups of experts, academics, and community members work together to ethically address the needs of our communities.

To frame my research questions, I briefly explain what happened in Scott County, and describe how response to the initial HIV outbreak led to new mechanisms and infrastructure that currently supports harm reduction services in nine Indiana counties. This a sequence of events I revisit throughout this study, using different frames and entry points to understand the assemblage of emerging syringe exchange policy in Indiana. I then show how new materialist theory can help us to reconsider the problem of Scranton's stasis and find a path to action. That is, new materialism can help us develop methods and methodologies for studying emergent infrastructure and demonstrate how such methods may support more collaborative work in response to complex problems. I explore this in depth by describing the Scott County outbreak as a wicked problem, and then briefly frame how new materialist theory helped me to develop a methodological approach to engaging complex problems.

1.2 The emergence of syringe exchange law in Indiana

In February of 2015, the Indiana State Department of Health (ISDH) announced they were tracking a quickly spreading outbreak of IV-drug related HIV in Southeastern Indiana. By the end of March, Governor Pence had declared the outbreak a public health emergency. The Centers for Disease Control (CDC) and Indiana University began assisting state and county health departments to identify patients and develop a response to curtail the outbreak. As part of this response, Pence

authorized a temporary emergency syringe exchange in Scott County, despite his firmly-held objections to syringe exchange programs. A network of state health care workers, social workers, CDC researchers and epidemiologists, as well as state, local, and federal government officials were suddenly engaged in the project of stemming the outbreak. At the same time, public health workers and state officials had to begin to address the reality of long-term health care for those who tested positive for HIV in a community with few medical resources for HIV patients and few options for addiction recovery.

In order to contain the outbreak, this multiplicity of practitioners also had to address other problems embedded in the outbreak, working in a community deeply affected by poverty and struggling to deal with opioid addiction. The Scott County outbreak, and other problems like it, are "wicked problems" because, as Rittel and Webber (1973) originally used the term, they are intractable policy and planning problems where there are no answers, no solutions, and where all problems can be considered symptoms of other problems. Wicked problems are "never solved. At best they are only re-solved over and over again" (p. 160). In other words: public problems like disease outbreaks, chaotic drug use, and healthcare policy planning aren't only technical or scientific problems. They are problems with deeply entangled roots across many aspects of the communities they affect.

It isn't difficult to identify the Scott County outbreak as a wicked problem with myriad actors. In the wake of the initial outbreak, health practitioners, researchers, and scientists responded alongside community members who inject drugs, the newly diagnosed HIV patients, their families, friends, and allies, local church groups, non-profit organizations, local and state politicians, law enforcement, reporters, and individual citizens concerned about infection rates, drug abuse, and the safety of their children. All of these stakeholders had different concerns,

different levels of knowledge, and access to different kinds of information. Through these entangled but often still disconnected networks, both formal and informal working groups made decisions, performed daily operations, and implemented policy across distributed agencies, groups, and contingencies. These complex, often competing work groups relied on highly specialized communication to facilitate their response to the immediate needs of the community. In these networks, ways of communicating and mechanisms for response emerged and were put to use. While problems like stemming an HIV outbreak are deeply embedded in how we understand science and medicine, the multiplicity of definitions, motivations, stakeholders, and potential outcomes make it difficult to communicate local, personal, technical, political, and institutional understandings of the problem across fields of expertise.

The temporary syringe exchange program, which Pence initially approved for 30 days, led, by the end of April 2015, to Indiana State Senate Bill 461. This new law made it possible for any county that could demonstrate the high-risk factors associated with the HIV outbreak (for example, high rates of IV-drug use, or elevated Hepatitis-C infection rates) to declare a public health emergency and institute a syringe exchange program. Those who had been previously unswayed by scientific evidence and expert recommendations suddenly found themselves considering syringe exchange as a necessary response to the problem of an HIV outbreak. For example, Brittany Combs, the public health nurse in Scott County said, “If you would have asked me last year if I was for a syringe exchange program, I would have said you’re nuts...I thought, just like a lot of people do, that it’s enabling — that you’re just giving needles out and assisting them in their drug habit. But then I did the research on it, and there’s 28 years of research to prove that it actually works” (Goodnough, 2015).

Because of the complexity of the public health response to the Scott County HIV outbreak, and the advent of syringe exchange programs in Indiana as one outcome of the initial emergency response, the Scott County outbreak is an important example of how practitioners, scholars, and community members cooperate despite political and ideological difference, and how, from moments of crisis, new methods, mechanisms, and partnerships for long-term response emerge. From these coalitions, new policies, processes, and guidance were developed and communicated not only to others engaged in ongoing response (for example, the Indiana State Health Department, the CDC, county health departments, and their community partners) but also to other communities who might be engaged in, or are at risk for developing similar emergencies that require response. My research explores which tools, processes, and tacit practices make such cooperation possible, and how information and ideas move among stakeholders. Most importantly, I consider how we, as researchers, determine what kinds of evidence and methods for interdisciplinary study might aid in a material, sustained response to complex problems. For example, my textual analysis of the response in Scott County allows me to engage practitioners not as observational subjects, but as potential partners, helping me to determine how technical communication research can contribute by developing tools, gathering evidence, and engaging the community to shift the metaphors that organize work in response to wicked problems.

The continued response to the opioid epidemic in Indiana, through syringe services and harm reduction programs, demonstrates the complications communities face when they consider how to best respond to chaotic drug use. Finding ways to cooperate for viable solutions that include all members of the community requires those groups to invent new capacities for response. While syringe exchange programs aren't a novel response to the public health concerns related to IV drug use, prior to the Scott County outbreak, the political climate in Indiana made it impossible for

syringe exchange to exist as a sanctioned public health response. That is, while individuals or community organizations in some cases engaged in limited syringe exchange programs, by networking with syringe services providers in Chicago, they did so without government or institutional support. (I discuss the community response that preceded this outbreak in chapter five). My research maps the movement of information about syringe exchange as it shifts from unsanctioned organic activism to local emergency response to sanctioned public policy. As policy, syringe services programs shift back into communities and into the hands of practitioners who have to form new coalitions and develop new methods for engaging both those who need help and the institutional structures that make work possible.

1.3 New materialist methods for studying emergent response

In a recent special edition of *Technical Communication Quarterly* focused on contemporary research methods, the editors (McNely, Spinuzzi, & Teston, 2015) brought attention to the continued need for innovative technical communication research, and pointed to new materialist theory as a productive ground for developing methodological frameworks. The editors argued that the tools, technology, workspaces, and practices of technical communication have changed in ways that require new methods. Added to these concerns are the evolving social, environmental, and political disruptions that seemed unimaginable even a decade ago. This issue shows how a turn toward action research, participatory design, visual methods, and data analysis requires a continued expansion of research methods in technical communication that takes seriously the material need for intersection, inclusion, and attention to the ways that people access information. The questions raised by scholars in this collection are ones I hope to extend with my research. For example, Walton, Zraly, and Mugengana (2015) describe the messiness of interdisciplinary community engagement work, and the need for more attention to methods that

are both inclusive and rigorous. Read and Swarts (2015) describe the value of triangulating research questions by employing different kinds of networked analysis to study the same phenomenon and how reading those analyses together offer new insights. New materialist methods foreground interdisciplinary methods and the importance of multiplicity made visible by network analysis. This project continues to explore the methodological value of new materialist theory for participatory technical communication research.

New materialist approaches continue the critical turn in technical communication that addresses the historical consequences of communication conceived as a neutral, invisible bridge for information transfer. New materialist methods are driven by network theory, especially as set forth by Bruno Latour and successfully deployed by technical communication and public rhetoric scholars (Spinuzzi, 2003; Gries, 2013); by a commitment to feminist methodologies (Grosz, 2010; Alaimo & Heckman, 2008; Haraway, 1985); and by interest in the complex nature of distributed systems and emergent phenomena (King, 2011; Bennett, 2010; Barad, 2007; Mol, 2002). New materialist theory helps researchers trace technical communication practices across sites that include the professional, institutional, governmental, and civilian without separating those practices from the complex assemblages in which technical communication is entangled.

These critical approaches to technical communication research make clear the extent to which the infrastructure of technical communication is implicated in systemic inequality. The idea that technical communication works as a neutral medium through which information moves has historically been deployed as a way to normalize power imbalances and disguise how institutional policies and practices often exclude, silence, and damage the people such policies are designed to serve (Longo, 2000). The opioid epidemic and climate change are only two of the multiplicity of ruptures that demonstrate the failure of technical communication as transparent medium.

Wicked problems—like climate change, education access, mass incarceration, gun violence and drug abuse—multiply more quickly than any industry, municipality, or state can respond. Callon, Lascoumes, and Barthe (2009) challenge that our current infrastructures are simply not capable of absorbing the number of ruptures we experience as socio-technical problems: "It is no good treating each issue separately, as if it is always a case of exceptional events. . . these debates are becoming the rule. Everywhere science and technology overflow the bounds of existing frameworks" (p. 9). Callon et al. (2009) call for collective action and a commitment to participatory experimentation and learning, including both experts and non-experts in deliberative processes. Both participatory research in technical communication (e.g. Simmons & Grabill, 2007) and new materialist theory demonstrate the extent to which technology and scientific discovery, and therefore technical communication, are embedded in our most immediate response to a multiplicity of concerns. New materialist methodologies for technical communication continue the postmodern commitment to rethinking subject-object binaries in order to consider more complex conceptions of ontology and epistemology. This is necessary in order to engage the increasingly messy, wicked problems we encounter on a frequent and increasingly dire basis. Technical communication researchers need methods that account for the messiness of research in practice—that is, research that allows us to work with other practitioners, scholars, and community members to develop sustainable material responses to complex problems.

This need for critical technical communication research that engages complex methods is also expressed by Coole and Frost (2010) in their introduction to a collection of new materialist theory. They illustrate how our ontological frames for political understanding and public problem solving continue to outstretch current methods for collective action:

> It is becoming evident that changes in living matter are rendering obsolete many of the ethical categories used to evaluate them . . . the boundar[ies] between life and death are currently becoming further enmeshed with issues surrounding sovereignty because increasingly the state must legislate on matters that were formerly left to God or nature...nature is no longer a reliable guide to the difference between life and death. Instead the distinction becomes a scientific, medical, and ethicopolitical question (Coole & Frost, 2010, pp. 22-23)

This relationship between biotechnological questions and political questions centers the need for researchers to identify better methods for participating in the response to socio-technical problems that were previously unimaginable. While here, Coole and Frost discuss biomedical ethics, their fundamental questions about how we account for the entanglements of technology, science, medicine, and politics that authors take up in their collection inform how I take up new materialist theory as the framework for collaborative technical communication research. Writing about the vitality and agentive capacities of technological and material assemblages, Bennett (2010) describes what actions might be possible if we understand material assemblages as agents with which we interact. Groz (2010) explores a feminist ontology that characterizes freedom as our capacities for transformative action—our ability to imagine and enact difference through how we participate in making the world. It is this call for participatory, ethical, transformative action that is central to how we develop new materialist frameworks for collaboration and response.

New materialist methods embrace the idea of multiplicity as expressed by Mol (1999) when she describes multiple realities as not relative and positional, but as materially co-existent. She uses the example of arterial disease to describe how the multiple realities experienced by patients, doctors, and technicians are not different views of the same reality, but different, simultaneous

realities where the material aspects of the disease exist differently for different stakeholders. She questions, given this multiplicity, what methods will allow us to make sense, and develop better, more ethical medical care. In her ethnographic study of disease and medical practice (Mol 2003) describes her work as *empirical philosophy*. That is, while her methods are qualitative empirical—she spends thousands of hours interviewing and observing patients, doctors and clinicians in a hospital—her goals are both practical and philosophical. Her goal is to reveal the ontological framework that "suggests reality does not precede the mundane practices in which we interact, but is rather shaped by these practices" (Mol, 1999, pp. 75). Like Scranton, she is concerned with philosophical questions raised by contemporary crises, but suggests conceptualizing them actively. Rather than "What does it mean to be" she asks, "How are we to respond?" and "What actions are possible?" Mol seeks not only understanding of phenomena, but actionable methods: day-to-day "socio-material practices that make it possible to do disease better" (Mol 2003, pp. 6). This question of *how do we practice better*— both as researchers and as part of a collaborative response to complex problems—is the focus of my research. If we take the responsibility of critical scholarship seriously, technical communication researchers and practitioners must acknowledge our role as members of a wider community working to respond to problems—and then do the best work we can to address those problems effectively. Collaborative research is performance oriented, focused on how our communities design processes, strategies, and modes of communication that address immediate needs.

As researchers and practitioners working out what technical communication looks like in terms of twenty-first-century problems and practices, attempting to do technical communication as a transparent bridge that works between stakeholders creates false barriers, and limits innovative strategies for research and application. To borrow from service-learning pedagogy, (Bowdon &

Scott, 2003) to imagine technical communication as working in-between stakeholders is to take a "writing about" approach to the relationship between technical communicators, the information they communicate, and the complex problems they work to address. The "writing about" approach in service-learning and community engagement positions researchers as observers who document what they see when they, for example, volunteer for a short time, or observe a community partner in action. While this can be useful for understanding, and helps students build empathy, such work is rarely reciprocal— it doesn't help the organization or engage in the issues at hand. We often take this approach in technical communication research, through workplace study, and we often find ourselves teaching technical communication as a translation activity where writers observe, report, and contextualize knowledge for different audiences. However, describing technical communication as a transparent bridge perpetuates the idea that communication itself is valueless and objective when we know this is not the case. I argue that the growing call for research and practice grounded in new materialist theory conceives of technical communication that operates less in terms of mediating between stakeholders and more in terms of interdisciplinary collaboration within complex ecologies of distributed knowledge. That is, technical communication researchers need to work more closely with a variety of practitioners, experts, and researchers in other fields, so that technical communication is understood as part of decision making and response rather than simply a conduit for others' expertise.

Developing a new materialist framework for studying the Scott County outbreak requires both sensemaking work of textual analysis and the empirical qualitative work of interview and observation that allows me to map the relationships between stakeholders, how they negotiate boundary objects, and how groups cooperate across the multiple realities Mol describes in order to identify potential sites for collaboration and action. I begin with textual analysis of news stories,

press releases, and policy documents in order to make sense of what happened in terms of crisis response (Weick, 1988; Bowker & Star, 2000), identify the sensitizing metaphors (Johnson, 2017), and map the patterns of institutional response (Angeli, 2017; Porter, Sullivan, Blythe, Grabill, & Miles, 2000). This analysis helps me identify the multiple conceptions of the outbreak, and how stakeholders, working across and through this multiplicity, cooperatively respond to problems. I use my analysis to identify my participants: public health practitioners and community activists in one of the most successful syringe services programs currently operating in Indiana. My interviews with participants draw on both my perspective as a technical communication researcher and my initial conclusions based on analysis. These interviews also inform my understanding of multiplicity in harm reduction response, clarify misunderstandings, and misconceptions that occur across disciplinary boundaries, and allow me to start mapping how technical communication researchers can engage—by collecting data, developing tools, and building inclusive methodologies in partnership with the community to respond to immediate needs.

What makes studying crisis difficult is also what makes this research significant to how we conceptualize the work of technical communication in multiple contexts. Work of all kinds develops emergent practices in response to complex problems. These practices address immediate needs rather than attending to the formation and maintenance of underlying infrastructure. The relationship between everyday work and the infrastructure that develops to support cooperation is significant to research at the intersections of rhetoric, public problem solving, and technical communication, especially when we consider the myriad of wicked problems that populate our news feeds today: access to healthcare, poverty, systemic discrimination, the complications of disaster response and climate change, and also the smaller, more immediate concerns of decision making in local communities and funding in our university departments. These are all different

problems, but they represent sites for considering the intersections of technical communication and public problem solving. The work of sensemaking and response, often a project of technical communication, seems to be happening as a constant engagement with breakdowns in infrastructure. These complex intersections of embodiment, technology, community, and bureaucracy are the kind of techno-social complexities new materialist theorists, and technical communication researchers interested in new materialist methods, are attempting to understand. Cooperation to address complex problems is about technical communication, but not only about technical communication. These problems are interdisciplinary and call for attention to the infrastructures that emerge in order to support collaborative response. My research will help scholars and practitioners work more closely and communicate more effectively with more interdisciplinary audiences, furthering and contributing to critical scholarship that actively builds better communities.

1.4 How do we get there from here?

So far, I have established the ground out of which this project has emerged and laid out the basics of the Scott County outbreak, the stakeholders involved, and the methodological approach I take to this research. The following chapters will lay out my research in more detail, combining storytelling, textual analysis, interviews, and mapping in order to build a methodological framework that can support further research and community engagement. To approach the story of syringe exchange in Indiana as an assemblage, I retell it from different positions, geographically, through different sets of data, and from the point of view of different stakeholders. The goal here is twofold: 1) to create layers of narrative and analysis through which points for collaboration for further research are visible and; 2) to develop a more generalized heuristic for technical

communication research that responds to complex problems through collaboration and community action.

Heeding the call for descriptive methods (Smagorinsky, 2008; Meloncon, 2017), in chapter two I take a narrative, reflexive approach to describing my planned research design, and how those methods were enacted and adapted throughout the course of my research. I couple this process narrative with reflection, considering different possibilities for enacting this work, and how I will extend or revise this approach in future projects. This reflexive approach is necessary because of the exploratory nature of this research, and helps to document and highlight infrastructure for further study while also serving as a modeling and teaching tool that can serve other researchers, even if they are not interested in enacting similar projects. This transparency about work-in-process, and a commitment to documentation, is central both to sustainable research practice and my identity as a scholar-teacher who values project-based pedagogy for my students and in my own practice. I outline the phases of this study: methodological thinking, textual analysis and practitioner interviews, iterative data analysis and mapping, and member-check memos for practitioner feedback and to frame further research. Metaphors for organizing work which I identified through document analysis guide interviews with participants at the state health department, and county health workers and community leaders working in one of the largest syringe services programs in Indiana. Interviews are analyzed in terms of the same metaphors used for initial document analysis used for document analysis, with attention to the differences in language and materials that show how information shifts from emergency response, to public policy, then back into the hands of practitioners. This study continues a methodological discussion central to current technical communication research (McNely, Spinuzzi, & Teston, 2015): where do we see opportunities for collaboration? What can technical communication research methods

contribute to community response? How can we best collect data that make sense to technical communication researchers, practitioners, researchers in other fields, and the communities impacted by our outcomes?

I develop a framework for new materialist methodology by beginning with an understanding of infrastructure (Star, 1999, 2010) then drawing on the work of new materialist theorists (Barad, 2007; Bennett, 2010; Mol, 2002), network theory (Callon, et al, 2009; Spinuzzi, 2005), and a critical approach to technical communication that includes both institutional critique (Porter, Sullivan, Blythe, Grabill, & Miles, 2000), and participatory design in technical communication (e.g. Opel & Hart-Davidson, 2017; Moore & Eliot, 2016). I use chapter three to articulate why the different methodological frames assembled are useful for understanding and responding to complex problems like the response to the opioid epidemic in Indiana. I consider the differences in these new materialist frames and consider their potential for informing collaborative research in response to entangled socio-technical problems. I argue for methods that incorporate the multiplicity and ethical responsibility of new materialism to make visible the messiness—and necessity of layered methods that account for, rather than frame-out the multiple sites, stakeholders, and ontological worlds we encounter when our goal is to respond to the material conditions of wicked problems in our communities.

This introduction outlined a brief sketch of the Scott County outbreak and the stakeholders involved. In chapter four, I retell this story in more systematic detail, with the aim of making sense (Star & Strauss 1999; Weick, 1999, 2005) of the timeline and events related to the initial outbreak. Using press releases issued by the Indiana State Health Department (ISDH) and a collection of local and national news stories, I track events, operational decision making, and shifts in metaphors used by stakeholders to show how the public health response in Scott County led to emergent harm

reduction practices. This chapter focuses on mapping the timeline in order to make visible the sensitizing metaphors (Johnson, 2017) that come to define the public response to the outbreak. For example, key to the development of a sustained public health response is a shift in approach from "stemming the outbreak" to "building a model for response." A brief history of harm reduction in the U.S., with focus on how harm reduction activists built syringe exchange programs without the support of government agencies, helps to inform both the political and ideological resistance to harm reduction strategies in response to substance use disorder, and also helps to inform a narrative that emerges in chapter five as practitioner interviews show how activists, community organizers, and researchers responded to the needs of people who injected drugs prior to the outbreak in Scott County.

Central to crafting methods for interdisciplinary response to complex problems is what Barad (2007) describes as *diffraction:* reading evidence and theory through one another in order to make visible the "differences that make a difference" that allow for action and response. In chapter five, I test a diffractive approach by analyzing sets of data from different stages in my research: the initial data analysis, interviews with practitioners, iterative document analysis based on information gathered through interviews, and rhetorical mapping (Angeli, 2017; Sullivan & Porter, 1997). I read these data sets through one another, layering information to identify sensitizing metaphors (i.e. needle exchange, public health emergency, building a model, harm reduction); institutional positions; (i.e. community health professionals, legislators, the State health department, law enforcement, the Centers for Disease Control, university researchers, and community organizers); and those stakeholders' orientations to response through metaphors that organize work—namely "public health emergency" and "harm reduction." Tracing how metaphors for response organize information, align partnerships, and allow for coordinated action across

disparate stakeholders allows me to map not only which stakeholders are assembled in response to a problem, but also those collaborative flows where discussion about shared or conflicting metaphors might yield frameworks for collaboration, further research, and participatory response to the needs of our communities.

In the final chapter, I look forward, highlighting potential futures for this research and the generalized heuristic and methods I have identified for collaborative research that respond to complex problems beyond harm reduction in response to the opioid epidemic.

2. METHODS

2.1 The necessity of response

To tell the story of how I went about my research, I'll start with something one of my interview participants said when I asked how research could best help forward the goals of the Indiana Recovery Alliance (IRA), the non-profit that administers the syringe services program in Monroe County. We were talking about the value of university research for furthering the goals of harm reduction and the need for shared resources. "The main way they can help is giving us money, really," said Abert, the founder and director of the IRA. My assumption, based on new research initiatives and attention to the opioid epidemic, was that increased funding for research was one way that researchers could help build capacities for syringe exchange. While in some cases this is true, there are also barriers to community partnership that didn't occur to me. "I feel like we're a little different than most non-profits," he explained. "If you have something like these big behemoths [healthcare groups, research universities, institutions] they see that there's a grant opportunity and [then] they go and do the work. We see that there's a need, and we go do the work. Eventually, there might be money that comes, and then those bastards get it all" (Abert, 2018). This frank statement about the privileges of access and the difficulties of reciprocity aren't new conversations when it comes to community engagement work, (see Cushman, 1996) but this sentiment, from a community activist turned program director, gets at two questions centrally important to me in this study: first, how can researchers work carefully with partners to get at the work that needs doing—work that amplifies and supports under-resourced groups— and, second, how do we do ethical research in partnership such that we leverage both our expertise and our access to resources to help our communities?

How I approach these questions is informed by my background in hotel operations where no matter the problem, no matter how outside my control or how complex the situation might be, "There's nothing I can do about that" is never an acceptable answer. Whether it's a guest's emotional reaction to travel difficulties, the impacts of weather or traffic, the complications of changing economies or changing neighborhoods on sales, or a broken water main in the parking lot at 3:00 AM, a way must be found to address immediate needs and plan for future contingencies. "Finding a way" is one impetus for this study of infrastructure, operational decision-making, and the possible frameworks for collaboration and response—even when problems seem insurmountable or beyond our control. I am invested in the possibilities and responsibilities of institutional critique and agree that, especially in this political moment, we must see our institutions and the human-social-technical infrastructures embedded in them as mutable, open to negotiation and reimagining, because "the alternative, being political despair, is worse" (Sullivan et al, 2000, p. 611). Sullivan et al couches cautious optimism with an important caveat: that institutional critique operates from a position of power and privilege, and working from the "inside" of infrastructures can be suspect when our goal is inclusivity and social justice. "We are assuming that individuals and groups/communities can indeed change institutions. But we are also assuming an agent of fairly powerful status already working within an institution" (p.634). Those working from outside institutional systems, through protest, direct action, community engagement, and organizing have every reason to be suspicious, especially when as Abert said, researchers attention to work is guided by the problems framed by grant funding opportunities rather than by attention to the work that needs doing, as understood by those working outside of institutional structures to address immediate problems as their everyday work. "Somehow we need to

circumvent that inside-outside binary altogether and make productive action possible" (Sullivan Et.al, p. 634). I agree; this study works to address that "somehow."

2.2 Social justice as research outcome

This approach isn't novel. Technical communication research grounded in ethical social action and moral responsibility is an ongoing conversation I join as I extend this work beyond my dissertation. Disciplinary and institutional boundaries don't always allow for sustained collective action as research in practice, however, in working through the methodological and practical difficulties of responding to complex problems this work is needed, and there are productive models for this kind of collaboration (e.g., Jones, Moore, & Walton, 2019; Mulvaney & Druschke, 2017; Walton, 2016; Moore & Elliot 2016; Simmons & Grabill, 2007). There is also a focused effort in technical communication scholarship to foreground social justice work, where scholars center the experience and expertise of marginalized groups through participatory design (e.g. Agboka, 2012; Haas, 2012; Jones, 2016). Indeed, more technical communication scholars and practitioners are arguing that addressing inequalities should be a primary outcome of our research practices:

> Social justice research in technical communication investigates how communication broadly defined can amplify the agency of oppressed people—those who are materially, socially, politically, and/or economically under-resourced. Key to this definition is a collaborative, respectful approach that moves past description and exploration of social justice issues to taking action to redress inequities. (Jones & Walton qtd. in Jones, 2016)

In order to support the kind of collaborative, sustained action needed to redress the inequalities embedded in complex problems such as the opioid epidemic, or others such as climate change and healthcare access, researchers must focus time and attention on improving

methodological frames for technical communication so they are more likely to add to and amplify the voices and efforts of those most shutout by institutional gatekeeping.

2.3 Methodology as praxis

Because I am concerned with the methodological frameworks for our research as much as, or more, than the situated problems this case study addresses, the guiding principles for this research process come, in large part, from feminist materialist practice, and the importance of praxis as described by Sullivan and Porter (1997). Feminist methodology defined by Sullivan and Porter acknowledges the position of the researcher, how research impacts the material conditions of both researcher and researched, and privileges relationship building and relational knowledge-making as integral to research design situated in complex problems. Furthermore, they argue for an explicit articulation of methodology as praxis, where researchers acknowledge that a "select and apply" approach to methodology limits possibilities for discovery and action. That is, they depart from traditional research by systematically exploring "how the question changes as differing methodologies embrace it, or how the method changes as the constraints of a particular research situation unfold" (p. 65). My interest in new materialist theory arises from how questions of complexity are articulated in the different methodological frames I explore, and how different methodological frames, when read together, allow for more complex methods and tools for research. I am working to develop a framework for research where reflexive conversations about theory, method, and practice in regard to a collaborative research design stay visible, open for negotiation and revision as research in action surfaces complications, disciplinary differences, and as institutional or political barriers to action become clear. Because this case study represents my first moves into more sustained engagement projects, much of the reflexive work here is my own, as I articulate what I learned through interviews and textual analysis. This study has not yet reached

the stages of critical practice described by Sullivan and Porter as praxis that leads to outcomes including public policy, research communities, and inclusive participation (p. 68), but I have confidence that the foundational work done here will support that work moving forward. As I conclude this limited and preliminary case study of Indiana public health care workers, I am also beginning to explore the possibilities for long-term engagement in the North Carolina community I am joining soon.

2.4 Methods: Proposed, enacted, and reflected

In the remainder of this chapter I tell the process-story of this study, including the complications and difficulties I encountered along the way. I have two central questions that shape this research, questions that will continue to shape this work as I address problems in other contexts, and do more sustained engagement with new community partners:

1. How can operational response shift policy despite opposition from ideological and political public narratives and power structures?
2. How can technical communication research amplify and support emergent capacities for response in our communities?

I will refine these questions in order to look more specifically at the Scott County outbreak as a case study, but these overarching questions shape my choices, both in the theoretical frames I see as useful, and in the specific decisions I have made as I have worked through complications, surprises and shifts in research design. In the next section, I will briefly review my research design, and then discuss how my work shifted as I enacted research. My reflections on these choices show how shifts in design led to the stories I see unfolding in this case study, and fame my future engagement with this project.

2.5 Research design summary

My study includes four stages, though there is much reflexive movement between them. For example, though I start with methodological investigation, I have returned to and refined my understanding of the theoretical frames I chose throughout this project.

Table 1:Research summary.
Table shows the four stages of this study, with a summary of tasks associated with each phase.

Research Stages	Summary of tasks
Stage One: Explore new materialist methodology for technical communication	Consider how four ideas: boundary objects, multiplicity, agentive capacity, and diffraction can be used develop vocabulary and methods that support collaborative research. Make connections to current technical communication research and methods.
Stage two: Develop timeline and begin mapping.	Develop dataset of publicly available documents including press releases and news stories. Map a timeline of events and identify sensitizing metaphors (Johnson, 2018) for further research, and identify potential interview participants.
Stage three: Recruitment and interviews	Draft IRB protocol (1802929228) for conducting a short series of semi-structured interviews with Indiana public health professionals, sharing results of stage two analysis with them for comment and feedback. Recruit participants, conduct interviews, and transcribe data.
Stage four: Iterative data analysis and rhetorical mapping.	Analyze interview transcripts in conjunction with previous textual analysis, map emerging timelines and differences between Scott County and Monroe County. Map emerging metaphors in relationship to interview participants and stakeholders using assemblage mapping adapted from Angeli (2018). Conduct follow-up interviews as needed; conclude with member-check interviews.

2.6 Stage One: Exploring new materialist methodology for technical communication

Because I am developing a framework for collaboration grounded in new materialist methodologies, I began by working through some of the connections between new materialist theory, technical communication, and the case study I am developing regarding the HIV outbreak in Scott County. My goal was to establish more specific research questions, and operationalize some of the theory I found useful for developing research methods that account for the layered, often overlapping problems associated with both community engagement and addressing wicked problems in partnership with other scholars and practitioners. New materialist methods, have continued and in some cases extended the approach of feminist methods I outlined early in this chapter. I am looking for those resonances, and how best to use theory in practice. In chapter three, I work through three different new materialist methodologies, putting those methodologies in conversation with Star (1988, 1999, 2010) in terms of infrastructure and in terms of the infrastructural approach to media circulation outlined by Peters (2016).

Four questions emerged from this literature review, focusing both my case study of the Indiana opioid crisis and serving as generative ground for methodological thinking I will turn toward in the future:

1. **Infrastructure and the movement of boundary objects**: Boundary objects are assemblages (agreements, definitions, work practices) that different working groups can take up and negotiate without the need for consensus. The "tacking back and forth" of boundary objects, from tacit, vague agreement to stratified policy is a site for better understanding the complex networks of stakeholders that support infrastructure development. **What methods help researchers get at the tacking back and forth movement of boundary objects?** (Star, 1988, 1999, 2010)

2. **Multiplicity in practice:** Mol asserts that given our understanding of network theory, researchers must consider that possibility that the ontological worlds emerging from complex networks are both multiple and simultaneous. Multiple ways of being are co-created through everyday practice. Attention to the sites of overlapping and negotiation among those realities, and their ontological impacts allow researchers to consider, **how can we practice better?** (Mol, 1999, 2003)
3. **Agentive capacity of the assemblage:** Non-human assemblages of systems, policies, sites, and technologies take on capacities and trajectories that shape what is possible. Attending to the agentive capacity of built infrastructure is necessary, even when those capacities are outside of or move beyond human control **How can we engage the trajectories of built infrastructure effectively?** (Bennett, 2005, 2009)
4. **Diffraction and intra-action:** The research apparatus we choose reveals the world in particular ways, while disclosing other possible views. For example, light is both a wave and a particle. But how light appears—how it is materially shaped—depends on the apparatus used to measure it. What is true of physics is true of other research methods in other contexts, and as researchers we are responsible for how the research methods we choose surface some possibilities and foreclose others. Our methods and tools for research matter; they make the world and we are accountable for what we make. **What do we see and do when we understand our methods as ethical response with material affects?** (Barad, 2007)

Reflection:

Originally, I saw this theoretical work as separate, a precursor to my research design that would help me to establish concrete methods. In some ways this is true. My questions led me to

scholarship that has helped me to make concrete choices about how to read data I have collected. But surrendering to the reflexive nature of this research, and working to stay with the questions, and wrestling with the implications of theory, rather than discarding complication in favor of more instrumentalized conclusions as I move between theory and practice is challenging. As I worked through case study development, I sometimes struggled to make concrete connections between the theory informing this work, and how my methods unfold in practice. Because this case study is focused on a snapshot of a complex problem in situ, rather than an ongoing engagement project, the ways forward, and the claims I can make about how these methods will help to build more collaborative, sustainable partnerships are limited, but promising. I am identifying tension points, and possible modes for building further research where I can refine the conclusions about methods articulated in this study through negotiation, practice, and assessment in partnership with stakeholders in future projects. That is, in the short term this study doesn't go as far as I intended to make new materialist methods actionable for technical communication research, but it in the long term, the vocabulary and methods I have identified (which I will summarize in chapter six) along with the tensions and lingering questions I still have are best explored in relationship with others, and as research methods in action.

2.7 Stage two: Develop a narrative timeline and begin mapping

In stage two, I began analysis of the Scott County Outbreak and its aftermath by examining news stories and press releases to develop a timeline of the operational decisions of practitioners and politicians and how those decisions informed immediate response to the crisis, and more sustained policy development.

Proposed research plan:

Syringe exchange in Indiana has received extensive local and national media coverage since 2015 because of the rising concern about the opioid epidemic in the US, and as I outlined in chapter one, the myriad of complex problems tangled in response to that epidemic, including disease prevention, syringe exchange in Indiana has received extensive local and national media coverage since 2015. I planned to include a wide range of public documents in my initial survey of the news and institutional documentation related to the outbreak and the subsequent needle exchange law. I planned to locate press releases and other documentation that chronicled the operational decision making related to implementing and supporting syringe exchange, including news articles related to the outbreak, and to syringe exchange and the opioid epidemic more broadly. The scope of documents I would collect was vague in my initial plan. Because my preliminary research took into account both the trajectory of the Scott County outbreak, and how counties were implementing syringe exchange after statewide syringe exchange was authorized there was a wide range of possibilities and a constantly expanding time frame, and I was unsure about what the scope of this textual analysis should entail. For example, I traced the path of needle exchange policy and discussion playing out in county council meetings and in local news reports as several counties in Indiana worked to implement needle exchange, but these developments are ongoing, and complex and I had to consider the feasibility of this study for dissertation research, given the constraints of time and scope.

Document analysis to trace what happened in the wake of a public response to crisis is a traditional and flexible method for understanding the role of technical communication in sense-making (Vealey, 2016; Weick, Sutcliffe & Obstfeld, 2005; Dragga & Voss, 2003). Storytelling gives language to the actions that were taken (Weick, 1988) in response to the initial outbreak,

which allowed me to establish the geographical and ontological epicenters of this study, and helped to identify possible research partners in the community and in other fields of research, for example, public health and public policy development. Preliminary research showed that Monroe County has been highly successful in establishing a syringe exchange program. Alternatively, Tippecanoe County received authorization for a needle exchange in 2016, but struggled to win public support and establish a location for the exchange to operate. I planned to trace the trajectories of these different iterations of syringe exchange programs in order to identify the evidence of the tacking back and forth of boundary objects practitioners take up to address problems. I intended this analysis to help me develop a grounded coding structure for mapping response, while also narrowing the field of possible interview subjects.

Enacted research methods:

Data collection:

The wide range of documents I surveyed in preliminary research was useful in helping me to understand the shape and trajectory of syringe exchange in Indiana, but was less useful for a more standardized approach to data analysis. The broad scope I envisioned for textual analysis was difficult to manage. In order to develop a timeline of the Scott County outbreak specifically, I limited my scope to a set of 32 press releases curated by the Indiana State Health Department (ISDH) related to the HIV outbreak released between February 25, 2015 and May 2, 2016. I worked with a research librarian to locate legislative documents related to syringe exchange in Indiana. I used the Gannett Newsstand database, which aggregates Midwest and national news stories, to identify 192 news stories written between February 1, 2015 and January 31, 2016, using the search terms “Scott county” and “HIV outbreak.” I then vetted both press releases and news stories to eliminate documents that did not directly address the outbreak or syringe exchange, and

to determine a broad but manageable dataset of related news stories. I eliminated two press releases issued in response to an unrelated tuberculosis outbreak in Indiana, and narrowed the data set of news stories based on two criteria. First, I eliminated duplicate stories filed by journalists at multiple regional outlets. When identical or near identical stories with the same byline ran, for example, in a Kentucky newspaper and in the *Indianapolis Star,* I selected the version of the story that ran in the Indiana paper. It was not unusual to encounter multiple iterations of the same story with identical bylines and publication dates in various regional papers. Second, I eliminated stories that were only tangentially related to the timeline in Scott County. For example, I eliminated some stories that focused on the opioid epidemic in neighboring states or cities without direct connections to the Scott County outbreak. I also eliminated some stories from Indiana not directly related to outbreak or the development of syringe exchange. For example, I eliminated a story about arrests made in Scott County of alleged drug dealers. While the involvement of law enforcement in the Indiana opioid epidemic is relevant to the larger conversation about how to respond to this complex problem, the stories detailing these arrests were neither useful for building a timeline for public health response to the outbreak, nor relevant to the emergence of syringe exchange. Ultimately, I gathered 35 news stories published in the same time frame established by the ISDH press releases (February 25, 2015 and May 2, 2016). These press releases and news stories formed my data set I used for close analysis for this stage of the study, which I explicate below.

Data analysis: Timeline development

While the press releases and news stories covered the same time frame, the information contained in each data set was different. For example the press releases were useful for identifying operational changes guided by health department practitioners, but the wider themes, in terms of

shifting attitudes and language, were often more evident in news stories that contextualized information in the press releases with quotes from decision-makers and experts, and with related developments happening in sites outside of Scott County—including hearings held in the State legislature and press statements made by the governor or the Centers for Disease Control (CDC). I read both data sets separately, then combined them in a chronological spreadsheet that organized news stories and press releases into one informational timeline. I made note of specific elements including:

- **Operational developments**, for example when the outbreak was declared, and when the governor authorized the emergency temporary exchange.
- **Textual development**s, such as changes to the format and informational structure of press releases, including a bi-weekly update on the number of people who had tested positive for HIV.
- **People speaking about the outbreak**, for example, spokespeople quoted or experts interviewed by journalists.

I used this information to develop the timeline and analysis featured in chapter three, and to help me develop a list of possible interview participants for later recruitment—for example, Beth Meyerson, the director of the Rural Center for AIDS/STD Prevention (RCAP), both gave testimony to state legislature during hearings about the outbreak, and was interviewed by journalists about the potential efficacy of policies being developed by the state. Based on this data analysis, I developed a list of potential interview participants for recruitment, as described below.

Data analysis: Tracing sanitizing metaphors

Using the same data set of press releases and news stories related to the outbreak, and informed by the narrative timeline I developed, I performed a second stage analysis of the documents, analyzing each document at the sentence level for repeated themes and objects, stakeholders, and metaphors used to describe and direct the operational response to the outbreak. I had planned to develop a grounded coding scheme to analyze the documents (Clarke, 2005), but found that trying to develop such a structured coding schema without the input of practitioners currently engaged in administering syringe exchange, and the expertise of researchers from other fields such as public health, would have little value in supporting collaborative decision making. Instead, I used a series of analytic memos (Saldaña, 2016) drafted while completing three iterations of interpretive and holistic analysis (Roozen, 2003). Memos focused on different aspects of the data that surfaced through iterative readings. My first memo focused on the "nuts and bolts" of the timeline: what happened when, and who was involved, and which practitioners I should add to a recruitment list for interviews. In my second memo, I start to identify the relationships between human agents (for example the governor, county health practitioners, and experts in harm reduction) and the metaphors they used to describe work. For example, this discussion from one on my memos helped me make a connection between the metaphors used to organize work and my interest in how boundary objects move between stakeholders:

> Johnson's (2018) chapter in *Methodologies for the Rhetoric of Health and Medicine* describes the value of recognizing sensitizing factors that are translated and reproduced in scientific documents in order to build infrastructure that supports an idea. He describes sensitizing factors as symbols that organize both vocabulary and materiality around concepts. These are metaphors that don't just shape language but help define what is

> materially available, and who has access. (75). I think I've identified "model building" as one of the sensitizing factors in the Scott County response. What happened in Scott county is both unprecedented and unsurprising, given the complex network of problems that rural communities like Scott County face. Running through the articulations of operational response, both in news accounts and in the press releases is the feeling that the outbreak in Scott County isn't a novel event, it is a prescient event. "Building a model for response" is a metaphor through which boundary objects move.

Adapting this method of tracing sensitizing metaphors (Johnson, 2018) was useful for identifying metaphors that could focus my analysis of documents and guide the questions I asked of interview participants. A further discussion of "building a model for response" as a sensitizing metaphor is detailed in chapter four. This data analysis process also helped me to develop a conversation guide for interviews with practitioners which I have included as Appendix A.

Reflection:

I was aware, in tracing, both in the media accounts and the available public policy documents, who and what is allowed to speak in response to the outbreak. While some individual voices of practitioners, lawmakers, and advocates are visible, it is often the case that what speaks is the assemblage: the policy itself as enacted in multiple ways through mundane documents, community interpretations, and cooperative decisions made in the moment. While these decisions are reflected in the documents, and attention to how sensitizing metaphors organize work is, I think, a highly useful tool for working across institutional and disciplinary boundaries, to engage in the level of mapping necessary for sustained research, partner relationships have to precede textual analysis, and would include more iterative discussion where analytical memos and potential coding schemes could be developed together and refined through shared knowledge-building.

While I'm cognizant of the limitations of this analysis, it did serve as a productive ground to further develop this case study and timeline, and as a method for developing a conversation guide for interviews with practitioners.

I expected to accomplish more with the coding schema and mapping related to the outbreak than I was able to do prior to my interviews. Coming up against the limitations of my own knowledge, and the limitations of a textual analysis approach to this work was unsurprising—I knew from my initial design of this project that I would need to work with practitioners and other researchers to develop the layered, complex analysis necessary to focus collaborative work such that it supports day to day operations and amplifies the narratives of those whose wellbeing is affected by institutional response. I was also attentive to the gaps and silences present in these public documents. People who use drugs are often used solely as a framing device in news articles. They are not recognized as people with real traumas, whose lives are affected by the criminalization of addiction and stigma attached to substance abuse disorder. While their names, behaviors, and sometimes pictures are present in the articles, they are never the focus of the story. People who use drugs are represented as a problem, and always as part of an assemblage that includes the needles, the drugs, and the policies that affect them. As I note below, this is one of the reasons I decided to limit my participants to public health care professionals engaged in the outbreak and response.

2.8 Stage three: Recruitment and interviews

Proposed research plan:

The interview portion of this study was designed to engage the point of view of public health workers and researchers addressing the problem of syringe exchange, or IV-drug related disease prevention more broadly from outside the field of technical communication. Interviews

were established as semi-structured discussions (Spinuzzi, 2012, 2015) about points of interest and metaphors that organized work as identified in stage one of this study. I planned to conduct between three and six interviews with county health workers and scholars doing similar work in other disciplines. Interviews would include an initial discussion, a follow up interview, and member checks (Alsup, 2010) to discuss the conclusions and methods outlined in this study. My initial plan included a preliminary interview, a follow up interview, and a member check interview for each participant.

In developing my IRB protocols for this study, I had to consider how my participants might be identified. Because of the geographical nature of this work, and the specificity of its subject matter, truly anonymizing my work would be difficult, if not impossible. Rather than attempting to fully de-identify data, I planned to follow ethical practices well-established in community engagement research (Moore & Elliot 2016; Flowers, 2008; Cushman 1996, 1999, 2002) that seek to engage research participants as partners who have voices in and potential to benefit from further research and sustained collaboration that creates effective results. Thus, anonymity was not an option. I explained this approach to interview participants during recruitment, and made clear that member checks would engage my interview participants and give them an opportunity to share feedback or concerns regarding the inclusion, discussion and conclusions of my study results.

Enacted research methods:

Using my preliminary web research, and my textual analysis, I identified eighteen potential interview participants including practitioners at ISDH, at four different county health departments (Scott County, Monroe County, Clark County and Tippecanoe County), and researchers from Indiana University and the University of Kentucky whose names or organizations were mentioned in conjunction with the Scott County response. I focused on counties that were within easy driving

distance to facilitate face-to-face interviews, and counties where the process of developing or administering syringe exchange varied. For example, Monroe County was the largest syringe exchange program operating in Indiana in 2017. Tippecanoe county's exchange was much smaller, and was highly contested both in the local media and between groups like law enforcement, public health, and the county council. Because of the contested nature of syringe exchange in some counties, I wanted to make sure potential participants were comfortable talking to me, and that my requests for interviews wouldn't place undue demands on their time or their working environments. Thus I planned no more than three hours of interview time for each participant.

I made a conscious decision to focus participant recruitment on public health professionals rather than law enforcement professionals, syringe exchange participants who were seeking treatment or services from public health services, or other members of the community, such as people living in neighborhoods near syringe exchange services. There are several factors that went into this decision. First, I am keenly aware of this gap in the research story I am telling here, but I am also aware of the tendency, particularly in community engaged research projects, for researchers to choose sites and study participants for whom their research could not be truly reciprocal. Second, given the exploratory nature of my project, its scope, my timeline for completion, and the likelihood that when I continued this research it would not be in partnership with the Indiana counties where this case study was developed, I chose to limit the scope of my research for this study to practitioners and researchers for whom study participation was less demanding and potentially problematic. Third, my interviews with practitioners confirmed what I already knew from my experience and existing scholarship regarding participatory research and social justice action in technical communication—engaging the questions, concerns, and expertise of the community, particularly those most likely to be silenced or marginalized by my limited

engagement and the institutional systems that frame my position as a researcher are complicated. Negotiation with partners and practitioners, and the time and space to develop community ties, local knowledge and trust is crucial to doing sustainable, ethical research that responds effectively to the needs of a community.

As I extend this research beyond syringe exchange in Indiana, I will ask practitioners and interdisciplinary researchers how to include the broadest possible representation of community members in the research design from the beginning—as partners whose knowledge and expertise is valued and compensated if necessary. This was summed up best in my interview with Chris Abert, the executive director of the Indiana Recovery Alliance: "When we go out into the world and we want advice from someone, whether it's expertise or knowledge that we don't have in the professional world, we call them consultants and we pay them. When we do that with people who use drugs, we call them clients or subjects or whatever" (Abert, 2018). Including partnerships with public health researchers, mental health practitioners, and community advocates to develop inclusive, reciprocal methods is central to my work moving forward.

In May 2018, I contacted potential participants via email using the guidelines established in my IRB protocol. I received immediate responses from Erika Chapman, the harm reduction program coordinator at ISDH, and from several practitioners at the Monroe County health department. I scheduled interviews with Chapman and three practitioners at the Monroe County Health Department: Jessica Hartley, Kathy Hewett, and Melanie Vehslage. I was also invited to observe a meeting of the Monroe County syringe advisory council on July 5, 2018. I attended that meeting, and had the opportunity at that time to follow up on my email to Chris Abert, the director of the Indiana Recovery Alliance (IRA). Recruitment enabled me to identify five participants willing to participate in interviews:

- **Erika Chapman**, Harm reduction program manager at ISDH who manages compliance, outreach and technical assistance for counties administering harm reduction programs, including syringe services programs.
- **Kathy Hewett,** Lead health educator for Monroe County Health Department who supervises the syringe services program in Monroe County
- **Chris Abert,** Founder and Executive Director of the Indiana recovery alliance who directs the non-profit organization contracted to administer the syringe services program in Monroe County.
- **Melanie Vehslage**, Harm reduction health educator in Monroe County who assists outreach at the IRA as well as managing data entry for reporting services to the state health department
- **Jessica Hartley**, Disease intervention specialist for ISDH who operates out of Monroe County. She works with patients including education, care coordination, and contact tracing.

After explaining study procedures and obtaining informed consent, I conducted one hour, face-to-face interviews with these five participants, which I recorded and later transcribed. Questions during my interviews were derived from my conversation guide (Appendix A), but were semi-structured discussions with participants. As a result, there are consistent themes in my questions, such as including questions about how the trend of "building a model for response" which I observed in ISDH press releases informed their work, as well as questions about what kinds of data collection or research might better support syringe services programs. However, my interview questions often expanded or changed based on participant answers, and their areas of expertise, following a trajectory based on the participant's work and their interest in my questions. For

example, Chapman's interview included a much wider discussion about harm reduction as a principle guiding work at ISDH, and Abert's interview followed the narrative of how the IRA was formed, which was new information not available in textual analysis of documents related to the outbreak.

I intended to conduct follow up interviews with each participant once I had the opportunity to analyze interview data in relationship to the textual analysis I had already completed in stage one, but I did not anticipate the volume of new information I would accumulate from my interview participants during our initial interviews. In integrating new information about the trajectory of syringe exchange in Monroe County, how it differed from my assumptions about how syringe exchange programs emerged in Indiana, and how syringe services programs continue to evolve three years after the Scott County outbreak, I found the scope and trajectory of my research changing. For example, the story of the IRA radically changed my understanding of the emergence of syringe exchange in Indiana, revealing a history I was unaware of, and which I discuss in detail in chapter five. Given the amount of discovery, Instead of conducting follow up interviews based on the assemblage mapping I detail in chapter five, I decided to forgo a second round of interviews, though I am preparing member-check memos for each of my participants to review with them what information I included from our interviews, and to receive feedback and approval for the way they are represented in this case study.

Another limitation of this research was my inability to connect with other researchers or scholars currently engaged in response to the opioid epidemic in Indiana. I spoke briefly, by email with Beth Meyerson, the director of Rural Center for AIDS/STD Prevention (RCAP) at Indiana University, but she was unfortunately on sabbatical and traveling outside the country while I was conducting my research. While I didn't get an opportunity to interview Meyerson, or associate

director Carrie Lawrence, who works closely with and conducts research in partnership with the IRA, I was able to attend a panel presentation Lawrence presented at the South Central Opioid summit in October 2018, and I have incorporated a paper Meyerson and Lawrence published on the complications of implementing syringe exchange programs in Indiana under the current policy constraints into my data analysis (Meyerson, Lawrence, Gillespie, Raymond, Kelly, & Shannon, 2017). When working on my study design, I was cautioned about the difficulty of connecting with researchers in other fields for interviews, but I did not anticipate the extent to which the barriers of time, distance, and disciplinary difference might limit my ability to recruit other academics as interview participants. I believe there is significant work to be done to build relationships and make effective arguments for humanistic research in partnership with other disciplines, and I will look to solid models for this moving forward (some of which I have cited both earlier in this chapter and in chapter three). In order to develop the interinstitutional and interdisciplinary approach to research I would like to participate in, I will need more time and space to build relationships with other scholars. I also anticipate that having the resources that come with being tenure-track faculty at a research institution that includes a medical school will make it easier for me to build the necessary partnerships for interdisciplinary work in the future.

Reflection:

My interviews helped me identify a history of syringe exchange represented neither in public health care discourse nor in the news media, and exposed complicated relationships between competing metaphors for understanding both official and unsanctioned responses to the outbreak. Even so, I had hoped for a more collaborative approach to outcomes and discussion based on the movement between my analysis from a technical communication perspective, and that of practitioners and professionals who engage these problems from other points of view. Alsup

(2010) recommends incorporating an approach that stays conscious of the value of anomalies and unexpected patterns in data and responses (p. 101-102). I hoped to conduct interviews that allowed for this reflexive work, including true negotiation and discussion about potential questions and the scope and possibilities for future research and engagement. Because, in execution, this project is a case study, and my level of ongoing engagement with these sites is unclear, and frankly, because of the time frame for dissertation research, the third stage of this project focused on my data analysis without the reflexive involvement of participants through follow-up interviews. In a longer term project that moved beyond case study into sustained research sites, I would work to develop a more consistent expectation and purpose for regular reflective conversations and collaborative analytical memos rather than formal interviews. In order to truly engage the layered, multi-faceted research design this methodology calls for, I need more time to establish partnerships, shared goals for action, and shared questions for research. I acknowledge this limitation not only here, but in the member check memos I am preparing for participants.

2.9 Stage four: Iterative data analysis and rhetorical mapping

As I said in my stage three reflection above, much of the information I gathered in my preliminary interviews challenged some of my assumptions about how syringe exchange programs expanded in Indiana after the Scott County outbreak. Some of the metaphors I thought were important to policy and the organization of every day work were less interesting to the practitioners I interviewed, and new metaphors I hadn't considered before emerged. As I studied interview transcripts, I began to understand an important data story regarding community outreach and activism in Monroe County, and I discovered an alternate timeline and trajectory for the emergence of syringe exchange in Indiana that I wanted to compare to the Scott County timeline. As a result, stage four of my research deviated more from my original plans than the other segments of my

research, as I altered my data analysis to account for dropping the follow-up interviews and investigating more fully the contrast between my initial analysis and the interview data.

Based on my original textual analysis of the Scott County timeline, and my participant interviews, I mapped when stakeholders engaged with syringe exchange programs in each county. (The results of this mapping are explicated in chapter five.) Similarly, the emergence of sensitizing metaphors that were more salient to my interview participants prompted a re-examination of policy documents, specifically the text of the governor's executive order, both the 2015 and 2017 iterations of the syringe exchange law, and two iterations of policy guidance issued by ISDH regarding syringe exchange. laws, program development. I noted both structural changes and language changes that signal how response from ISDH shows movement between "public health emergency" and "harm reduction" as sensitizing metaphors that organize work. I also identified possible ways that syringe exchange timeline that unfolded in Monroe County influenced the overall capacity for a more harm reduction centered response in ISDH guidance. I also used my interviews to identify possible emerging metaphors currently organizing work, and the questions or motivations underpinning those metaphors.

Using these layers of analysis, I mapped different stakeholders in relationship to both stabilized metaphors identified in stage one of this study, and the emerging metaphors or questions that arose in my interviews. For this I adapted assemblage mapping as described by Angeli (2018). She describes her process, and the barriers she experienced developing partnerships and access while studying emergency medical technicians (EMT) as part of her dissertation research. She outlines a method for mapping interactions between "stakeholders, communication channels, power dynamics, and the shared values of stakeholders" (p. 247). Drawing on Johnson's (2018) note that combining methods for tracing sensitizing metaphors and assemblage mapping might be

a “formidable” method for tracing the rhetorical and material networks that are formed through the use of sensitizing metaphors (p. 76), I use this case study to test a mapping strategy that combines elements in both methods. Angeli centers stakeholders, then maps their relationship to other stakeholders and work sites, and their position in relationship to core values. She also maps their communication networks. Because I am interested in how sensitizing metaphors organize work, and how different stakeholders value (or oppose) those metaphors, I mapped individual as well as institutional stakeholders, and their orientations to both stratified and emerging metaphors. Rather than mapping the communication pathways that were crucial to Angeli’s stakeholder maps, I traced different stakeholders’ engagement with, or resistance to emerging metaphors. (See chapter five for this mapping and its further implications for further research.)

3. NEW MATERIALIST METHODOLOGY

3.1 Praxis grounded in new materialist theory

In order to consider how technical communication researchers can best participate in sustained response to complex problems, it is necessary to consider how definitions and approaches for teaching and research in technical communication shape our understanding of what communication is and does. As I said in chapter one, defining technical communication as mediation that bridges or translates across gaps in expertise or discursive knowledge does not adequately account for the complexity of technical communication in action and limits our ability to see communication research contributing to sustained ethical response to material conditions. I argue for a more circulatory conception of technical communication, one that takes into account the ontological impacts of communication. Reading through Kittler (2009) and Star (1999), Peters (2015) describes media as both ontology and infrastructure. Media are "ontological shifters" (p. 25) in that media does not translate what is unfolding elsewhere, but contributes to how the world unfolds in particular ways. That is, media is not simply a representation or a translation of what is already in the world. What is in the world, our ontological realities, unfold from our engagement with those realities. As Peters says, "media are our infrastructures of being, the habitats and materials through which we act and are" (p. 15). Put simply, media isn't a go-between; it is co-created with all the stuff that makes up the world and how we experience it. In this view, technical communication as media, or mediation is implicated in how we respond, and how we take action as we make sense of complex problems. In this framework, technical communicators have both the responsibility and the opportunity to pay more careful attention to what emerges from mediation as practice.

Peters argues that an infrastructural understanding of media is necessary to understand the ontological implications of media. In fact he goes so far as to say, "Ontology, whatever else it is, is usually just forgotten infrastructure" (p,18). He draws on a Latourian example to talk about the generative power of media, and how the mediation of information makes the world in particular ways. He describes Pasteur's discovery of the microbe, and Latour's assertion that before Pasteur discovered microbes, they did not exist in the human imaginary-- but upon the discovery and the circulation of that new knowledge which reformed our understanding of the biosphere, "we forgot that [microbes] didn't exist before" (p. 41). While this example places human-centered knowing as the arbiter of existence, which is reductive and detrimental to a more complex and inclusive understanding of our ecology, it is a useful example for illustrating what Peters means when he says ontology is forgotten infrastructure. Mediation (the microscope, Pasteur's seeing, the visibility of microbes, his documentation of the phenomena, and subsequent publication, discussion and action taken as a result) and the ontological shifts that emerge because of that mediation, become forgotten or invisible infrastructure, the "what always was" that we didn't know before, without attention to that emergence and what possibilities it shapes. The language and methods of traditional media studies, Peters argues, are not adequate for attending to media as ontological force, one that is not limited to human understanding but is embedded in complex networks of human-non-human assemblages, "We need a better name for the infrastructural aesthetics and ethics of being alive with others" (p. 380). I agree, though it is not only names we need, but methodological frames and methods for response. Peters infrastructural and embedded approach to media studies is not unfamiliar technical communication scholars (e.g. Spinuzzi 2005, 2003; Hart-Davidson, Bernhardt, McLeod, Rife & Grabill, 2007; Weber & Khademian, 2008), so his description of media as circulatory is valuable for developing methods for collaboration that

includes technical communication research as part of an interdisciplinary response to problems. Attention to emergence can help researchers be more accountable, both to our results and to our communities when technical communicators participate in mediation and knowledge-making as a response to problems. The new materialist methodologies I assemble and explore here take up similar arguments about the ontological nature of infrastructure, and I have selected these frames as a starting point for developing both a vocabulary and research heuristics that support technical communication research in circulation, in partnership with others who engage and respond to complex problems.

Harm reduction programs in Indiana are part of an emergent response to the crisis of HIV and opioid addiction, and therefore serve as a useful case for exploring how different new materialist methodologies might further an ongoing conversation about the nature of technical communication. In order to understand how technical communication contributes to emergent response, it is necessary to study that emergence in its multiple assemblages, such that we attend to both what came before and what we forget wasn't always there (what becomes invisible) once policy and procedure are codified. For example, my initial read of press releases and the timeline related to the outbreak focused on the operational response to public health emergency, the advent of needle exchange programs in Indiana, and how we might see the crisis as a catalyst that created space for a kind of response that was politically impossible prior to the outbreak.

Operational decisions that shift possible response is one important thread of this research, but it doesn't take into account the broader history of harm reduction, the many communities and researchers who were already engaged in response to the opioid epidemic prior to the outbreak, and the physical and mental health experiences of people who use drugs, all of which inform how the new policy emerged. We need methods of research that allow for layering, for reading timelines

and events through one another. We need methods that are attuned to difference and multiplicity that allow for knowledge making grounded in listening to and amplifying the kinds of evidence and methods for response that are often silenced, discarded, or co-opted by more institutionalized and accepted methods. In order to get at the heuristic questions that might inform such methods, I examine four methodological frames that are useful for studying the complexity of ontological infrastructure and how attending to that infrastructure can support collaboration and action, thus framing the question central to this research project: **How can technical communicators participate in a sustained, collaborative, inventive, and ethical response to complex problems?**

New materialisms, at least as they interest me, continue and contribute to feminist methodologies based in a commitment to social justice. Coole and Frost (2010) describe a critical new material perspective as one that, like feminist and class theory, accounts for bodies in relation to the socioeconomic systems and material environments in which they are embedded (p. 19). At the same time, new materialisms critique how we conduct research that responds to bodies embedded and imbricated in systems of power; new materialisms call for more empirical, phenomenological attention to "corporeality as a practical and efficacious series of emergent capacities" (p. 20) that affect and are affected by human and non-human actors. Critical new materialism is an orientation to political action that "calls for a detailed phenomenology of diverse lives as they are actually lived—often in ways that are at odds with abstract normative theories or official ideologies" (p. 27). The complexity of the current opioid epidemic as a symptom of the entangled concerns that include, but are not limited to: modern pharmaceutical development, poverty, shifts in energy policy, and access to healthcare require us to think of response not only as responding to the human bodies impacted by the crisis, but about those bodies in the midst of

an assemblage for which "normative theories and official ideologies" have no existing capacities for response. The problems overflow the boundaries of our current ways of being and knowing in the world. We need better approaches to collaboration and research that can account for, and be accountable to the human (and non-human) bodies affected by crisis.

As I examine the Scott County HIV outbreak, I'm aware of my cultural-linguistic training when I research news reports and public documents. The ways that actors are named certainly makes possible the ways those actors are seen in the world. Johnson (2018) describes the connection between language and material impacts when he uses the concept of sensitizing metaphors and the repetition and standardization of such metaphors as infrastructural knowledge work. He describes how these metaphors have material impacts by using the example of how sensitizing metaphors related to protein and health shaped FDA food labeling practices. In a similar way, I am interested in the sensitizing metaphors that organize work in response, first to the immediate crisis of the HIV outbreak, and then to the larger question of the opioid epidemic and harm reduction. This technical understanding that sensitizing metaphors—repeated, institutionalized, and codified in policy—organize work and open up some possibilities for response while foreclosing others must be deployed in conjunction with methods that trace and account for our ways of making and mediating knowledge, and how the outcomes of our research affect the complex ecologies of the communities in which we work. Barad (2007) describes this as *ethico-onto-epistemology*, meaning that we are **responsible** for **being** and **making known** simultaneously. In order to understand what an ethico-onto-epistemological (say that three times fast) approach to technical communication might look like in practice, I begin this review with a discussion of infrastructure and boundary objects in order to frame the questions that I think are best served by a new materialist methodology, then consider how four ideas: boundary objects

(Star), multiplicity (Mol), agentive capacity (Bennett), diffraction and intra-action (Barad) can be used develop vocabulary and methods that support collaborative research. As I outline these ideas, I make connections to current research and theory in technical communication where applicable, and make arguments for how I am employing or expanding on current technical communication research methods in this study.

3.2 Characteristics of infrastructure and the movement of boundary objects

In "Ethnography of Infrastructure" (1999), Star named nine characteristics of infrastructure that can make visible the networks, practices, procedures, and tacit agreements that underpin collaborative work. Two of these characteristics are important to establishing new materialist methods for studying emergent infrastructure in response to crisis. According to Star, infrastructure is: "Visible upon breakdown," and "Big, layered, and complex, and because it means different things locally it is never changed from above...Nobody is really in charge of infrastructure" (p. 382). The first point, that breakdown makes infrastructure visible, might seem too obvious, but it is key to uncovering the interdisciplinary knowledges, varied expertise, and multi-faceted relationships necessary for collaborative response. While living in a state of crisis-response isn't ideal, it seems, at this moment in time, this is how we most often go about the work of addressing complex problems in our communities. The second point, that infrastructure is situated, distributed across networks with competing definitions and use-cases and is therefore changed incrementally rather than globally is well understood in technical communication research. However, the consequences of that distribution—that no one is in charge of infrastructure—is challenged by the critical turn in technical communication and extended by the current focus on new materialist methods. Infrastructure, seen as impenetrable bureaucracy or monolithic institution, allows for critique—but not action. In contrast, when researchers attend to

local problems and imagine situated rather than generalizable responses, they can more fully engage in cooperative interventions to affect underlying infrastructure and create space for better ways of working (Porter, Sullivan, Blythe, Grabill, & Miles 2000).

One way to get at the infrastructure, and consider how local, situated response can affect that infrastructure is through the study of boundary objects. Boundary objects, a concept described by Star (1988) and later Star and Greisemer (1989) and Star and Bowker (1999), are a flexible arrangement of practices that allow for cooperation without consensus. The flexibility of boundary objects, that is, the way a set of processes, agreements, and materials, can be read by different practitioners from different points of view, has been taken up by many in social science, information science, and the humanities to describe how groups of stakeholders work together. Over the course of her work Star often found herself answering the question "Can't anything be a boundary object?" (Star 2010, p. 605). However, flexibility is only one aspect of boundary object formation, and further attention to the other characteristics of a boundary object—the forms such objects take, and the movement from ill-structured agreement to specific application for local use—is important if we are interested in how the formation and movement of boundary objects contributes to the infrastructure of complex response.

Boundary objects are assemblages that groups act toward and with (pg. 603). If we, for example, take up "syringe exchange" as a boundary object for study, then we can examine how different working groups put this vague term, and its assembled material objects, definitions, agreements and processes to use without necessarily coming to a consensus about the disagreements and controversies inherent in the shared object. County health workers can develop best practices and policy guidelines to administer exchange programs; lawmakers can determine circumstances under which syringe exchange is sanctioned policy; law enforcement can make

decisions about how they will respond to the complexity of sanctioned syringe exchange and illegal possession of drug paraphernalia. Community organizers and advocates can use syringe exchange as a vector for improving the health outcomes of people in their community, while at the same time negotiating the scope and understanding of syringe exchange as a tactic for outreach and capacity building. One less studied condition of boundary object formation is this capacity for "groups that are cooperating without consensus [to] *tack back and forth* [emphasis added] between forms of the object" (p. 605). The *tacking back and forth* Star describes is not about taking up one conception of the object over another, but rather is concerned with tracing the movements between the ill-structured, vague, tacit processes that allow for cooperation and the tailored, more specialized or codified standards and infrastructures that make objects useful to some groups and not useful or exclusionary to others. One reason this aspect of boundary objects may be less studied is the complexity of this movement. "We are in a sense stuck with using Newtonian language for quantum phenomena...boundary objects are at once temporal, based in action, subject to reflection and local tailoring, and distributed throughout all of these dimensions" (pg. 603). It is in this multidimensional aspect of studying boundary object formation that I find such important resonances with new materialist theory, and see a need for employing new materialist methodology to get at the layered, complex, and often contradictory assemblages that serve as boundary objects when we consider our response to wicked problems.

To put this in more concrete terms, examining this tacking back and forth of objects (assemblages) in the "working groups" that must cooperate to respond to problems is an ontological project that includes a multiplicity of actors, including non-human actors. These assemblages of actors determine the reality in which boundary objects, as a set of work arrangements that are at once material and, procedural, and distributed among conflicting working

groups emerge, are maintained, are stratified into systems and infrastructures. I am interested in both the formation and the stratification of emergent infrastructure, and how tracing this tacking back and forth informs our understanding of how to more deliberately and ethically respond to a multiplicity of evolving, entangled, complex problems.

The formation of new boundary objects is required when some members of cooperative groups are excluded through the specialization and standardization of objects, and therefore must form new processes that allow for cooperative work without consensus. For example, while the Governor authorized the emergency syringe exchange in Scott County, and that authorization came with official guidelines for implementation, it is clear from my initial research that the syringe exchange as a boundary object was in a constant state of negotiation between practitioners, addicts, and members of the community. How the exchange would operate, the services it would include, what would be considered as successful, or acceptable was a series of processes, negotiations, and public conversations which are evident in my initial examination of press releases and news stories. I will return to this movement of boundary objects between working groups, and the formation of new boundary objects in later chapters of this study.

3.3 Multiplicity understood as intervention and performance

Star (1989) talks about boundary objects as necessary for collaboration as people work from the point of view of different "social worlds." For Star, boundary objects, because they account for the intersections between worlds, allow for more complex ecologies of study than Latour, Callon and Law's idea of translation, which takes a more transitive approach to knowledge making, tracing the networks of information between experts and non-experts. (p.389). Mol's thinking about multiplicity moves both the ideas of network theory and the ecology of boundary objects forward in important ways. Mol's research, as I discussed in chapter one, focuses on

disease and medical treatment. While Star might consider a particular disease a boundary object that different working groups pick up in different ways, Mol considers those different orientations to a disease as multiple and simultaneous. Understanding how practitioners, patients, and the public collaborate, make decisions, and move between multiple conceptions of reality in order to respond to disease is useful for thinking about the movement of boundary objects, and how groups tack back and forth between different practices, agreements, and assemblages as boundary objects.

In the introduction to this study I posed multiplicity as an action-oriented approach to studying complexity that helps us to get at the ways our research can frame methods for more collaborative and sustained response. Mol (1999) argues that research grounded in ontological multiplicity requires different metaphors, ones that take into account how coexisting realities of an object are enacted and entangled in practice. Multiplicity "suggests a reality that is *done* and *enacted* rather than observed (p. 77). Intervention and performance (rather than observation and translation) she argues, are metaphors that allow us to ask a different set of questions that highlight the "different performances, different versions, and different realities that coexist in the present" (p. 79). Mol's studies use the multiple realities of anemia (1999) and atherosclerosis (2003) to work through a methodology for studying multiplicity as active--as intervention and performance, such that we can better understand coexisting realities of a disease and, in turn, respond better to the disease. Intervention and performance as metaphors that organize research allow Mol to ask four questions that are also valuable for developing collaborative research methods designed to recognize and center difference and the necessity for cooperation without consensus in response to problems:

- **Where are the options?** This highlights the distributed nature of operational decision making, and how, as we make options explicit, we often discover that options for

response are not located at the site of decision making. In fact, considering what options exist without locating those options in context means we are always in danger of our options being located elsewhere, preventing effective decision making and action.

- **What is at stake?** This highlights the complexity of shifting options, and the intersecting realities that inform a complex problem. An approach to research that centers multiplicity requires attention to identity, lived experience and material reality that requires "open-endedness, facing tragic dilemmas and living-in-tension"(p.83) as conditions of research that do not allow researchers to determine stakes from one position and move on, but require us to stay in the question about stakes as options are identified and enacted.
- **Are there really options?** This highlights the entangled nature of multiplicity. How different versions of an object relate to, interact, or stand in for one another as they move from one situation to another, and how those interactions disclose or displace possible actions. What is possible at one site, and the assemblage of multiplicities available in practice is not a given.
- **How should we choose?** This highlights the contingent nature of research actions and operational decision making in practice, and foregrounds how we evaluate effectiveness, by considering a more complex model for how we determine who is affected, and which effects we count as successful. This question of method, especially when asked in relationship to the health and well-being of others, focuses the collaborative nature of decision making and requires us to make inclusion in the decision making process part of the methodological approach we must account for. Asking how we will choose is also an opportunity to consider who will choose, and what information is available for consideration when choosing. (Mol, 1999 pp. 81-86)

Ontological politics as a frame for research methods is useful for its connection to technical communication research that addresses communication in practice, through the tracing of active networks, (Spinuzzi 2005, 2003) workplace practice, (Hart-Davidson, Bernhardt, McLeod, Rife & Grabill, 2007; Weber & Khademian, 2008), and the distributed nature of work that often obscure sites of decision making and make actors difficult to trace (Pigg, 2014; Read & Swarts, 2015, Spinuzzi, 2014). Because multiplicity assumes more than one version of an object can exist and be acted upon, Mol's approach can help foreground boundary objects as an assemblage of practices that tack back and forth, while also overlapping and entangling. Star suggests that versions of a boundary object are discarded and reformed by groups as they become more or less useful. Mol suggests that rather than disappearing and reforming, objects can persist, multiply and create new possibilities for action as they become a version of reality experienced by those who use them. For example, rather than tracing "syringe exchange" as one boundary object that stakeholders take up from different positions, we can study syringe exchanges as a multiplicity of objects that stakeholders assemble as a version of practices, tools and policies situated as material response. That these boundary objects exist simultaneously with other versions, rather than replacing them is important for understanding response to wicked problems in context. Response in one context and our methods for studying response are not necessarily transferable across contexts. Understanding how stakeholders navigate multiplicity in policy and decision making helps to frame a method that can better account for how difference informs both our participation and methods for intervention.

Because Mol takes up disease as her case for examining multiplicity as complex action, it is easy to see connections between her approach and the study of harm reduction in Indiana as a case for examining response to complex problems. In both cases while we are interested in public

health and "doing disease better," it is the methodological frame for doing complexity better in multiple contexts that is most valuable. Mol's method is question driven, and does not promise resolution or closure through definitive results. She argues for an empirical model that doesn't establish closure and consensus as its intended outcome. She argues for ontological politics as a frame because "politics resonates openness, indeterminacy. It helps to underline that the question of 'what to do' can be closed neither by facts nor arguments...doing good does not follow on finding out about it, but as a matter of, indeed doing. Of trying, tinkering, struggling, failing, and trying again" (2003, p. 177). When doing, rather than concluding is prioritized as the outcome of research methods in technical communication, participation and sustained engagement with our communities becomes foundational to, rather than an offshoot of our scholarly work.

3.4 Agentive capacity of infrastructure

Star's characteristics of infrastructure (1999) make clear its layered nature, its tendency toward inertia, and its positioning of human capacities to affect incremental change within distributed networks. I find in Bennett (2005) an extension of infrastructure as active assemblage that further de-centers our human capacities in order to make more visible the ways that distributed networks and the infrastructures that support these networks are also potential actants with *agentive capacity*. Bennett highlights the problem of an epistemology that names "structures, surroundings, contexts, and environments [as] background settings rather than spirited actants" (p. 455). When agency is human-centered, it limits our perception and the possible sites for political intervention. Bennett describes agentive capacity as the ways assemblages can "not only to impede or block the will and designs of humans bus also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own" (2009, p. viii). Approaching the study of boundary object formation with this understanding of assemblage is useful when we consider the effects of policy

on those a policy is intended to serve. Furthermore, if we understand technical communication as part of multiple assemblages that circulate then we become more responsible for the agentive capacity of mundane documentation, and therefore more attuned to how policies enacted, reproduced, and circulated shape possibilities—and impact the lived experience of those with whom our documentation interacts.

Bennett uses the example of the 2003 North American Blackout to describe the capacity of the cascade to "speak" and act in ways that required experts, politicians, and communities to consider the power grid differently—to consider its actions and responses when making operational and political decisions. This conception of response, including non-human actors in working groups, speaks to Star's conception of boundary objects neither as concrete objects nor groups of individuals, but as assemblages of processes and agreements. This capacity for things to "speak and act," to "locate agency [in a] human-nonhuman working group" connects with what Carolyn Rude (2009) has described as the central question of technical communication: "How do texts and related communication practices mediate knowledge, values and actions in a variety of social and professional contexts?" (p. 176). As I consider the relationship between Star and Bennett, and particularly Star's call for more attention to the movement of boundary objects, I want to think carefully about how technical communication research and pedagogy that frames documentation as mediation or translation between stakeholders empties an assemblage of documentation and procedure of its agentive capacity.

Texts mediate knowledge, values, and action. This is clear in Scott County, given that health department reports and Indiana State Department of Health policy documents operationalize response and create and/or explicate what is possible for practitioners and agencies in their interactions with the community. The approach to better understanding these complex mediations

goes far beyond simply tracing the pathways of the policy documents, how they evolve, who contributes, and who is silenced or made invisible as first responses to stem the outbreak transform into policy response. That is, it is important to think about mediation as a verb here, its active capacities to shape what it possible, as counties consider the possibility of syringe exchange as a response to public health problems. Bennett's work demonstrates the necessity and difficulty of tracing the complex working group—the human-nonhuman assemblage in which these documents function—with the goal of identifying the power imbalances and inequalities a simplistic theory of mediation can erase. Considering the agency of the assemblage is one way to expose how treating technical communication as a bridge between groups limits the possibilities for collaborative material, political, and social response to complex problems like substance abuse and addiction. In other words, because mediation in technical communication has signified at best neutrality and at worst invisibility and control, more critical approaches must enliven mediation as a verb, helping technical communicators and the texts we produce become more accountable for our participation in assembled working groups. This attention to mediation as active (and therefore accountable) is supported by and contributes to current research methods in technical communication grounded in participatory design (e.g. Moore, 2017). In chapter five, I draw on the idea of agentive capacity, and use assemblage mapping (Angeli, 2018) to identify stakeholders and how the operational decision making and metaphors that organize work. In tracing these assemblages I am attempting to account for the non-human actors in the assemblage, including sites like the syringe exchange and the mobile exchange. While these sites don't operate independently from the practitioners that administer them, accounting for the spaces created by public health response, and how those spaces create, foreclose, or shift access to care, we can see how the assemblage speaks by thinking about to and for whom it responds. Technical

communication doesn't only exist between stakeholders, it is also the media, the stuff in which we are entangled (Peters, 2016). I also consider the differences between assemblage mapping to trace emergent capacities, and mapping that also takes into account the multiplicity, that is how metaphors like "public health emergency" and "harm reduction" shape the different realities in which stakeholders operate even when they must collaborate to deliver services. Continuing to unpack the relationships between these different conceptualizations of infrastructure as entangled and multiple while also accounting for the agentive capacity of the built infrastructure is necessary in order to get at the "tacking back and forth" moves of boundary objects in working groups responding to the Indiana opioid crisis.

3.5 Diffraction and intra-action as methodological foundation

In situating technical communication research as a capable partner in community response to complex problems, I reach for a variety of theoretical frames to both understand and respond to complexity. Star (2010) talks about the difficulty of naming a method designed to foreground complexity "we are in a sense stuck with using Newtonian language for quantum phenomena" (603). Barad (2007) works to address the difficulty of research that must account for multiple dimensions of action and cooperation by drawing both on her knowledge of quantum physics and the frameworks of postmodern and feminist theory. Rather than trying to flatten or frame out the complexity of multiple dimensions of thought and action, she argues for an interdisciplinary *diffractive methodology* which moves beyond "mere acknowledgement that both material and discursive, and natural and cultural, factors play a role in knowledge production by examining how these factors work together" (p. 25). Like Star and Mol, Barad argues that our methodologies must grow out of collaboration and action, with attention to the differences in knowledge-making practices that shape reality. Diffractive methodology, according to Barad, is a commitment to

accounting for differences that matter. When Barad uses the term "matter," she isn't speaking simply of importance or weight, but "mattering" as a verb: "The point is not merely that knowledge practices have material consequences, but that *practices of knowing are specific material engagements that participate in (re)configuring the world*" (p. 91). As I develop methods for collaboration and response in technical communication, the value of response as a verb that creates and sustains emergency capacities and possible realities is emphasized by taking up Barads approach to understanding mattering as ontological, as world making. As we design research methods, we are not only choosing ways of understanding the phenomena we study, but we are, through our work, helping the world to unfold in particular ways, and contributing to the conditions for emergent phenomena. Longo (2006) echoes this idea in terms of a cultural studies approach to technical communication. A study "imposes ordering on the object and its contents, thereby including some ways of understanding the object and excluding others…a cultural study of technical writing would explore the silences, absences and exclusions still held within the dominant knowledge and discourse of that field's practices" (p. 126). A new materialist study of technical communication requires that we not only explore the absences, silences, and exclusions in our research practices, but address them and develop methods that not only account for but work to repair the damage such practices have inflicted. This methodological approach extends Longo's call for a cultural study of technical communication, and takes up the more recent challenge to take a social justice approach by developing methods that uncover and address systemic inequalities by working to redress them (e.g. Agboka, 2012; Haas, 2012; Jones, 2016; Moore & Elliot, 2016)

Dominant knowledge practices are often invisible, particularly in specialized discourse communities of skilled practice. In fact, as Longo's research demonstrates, keeping those

knowledge practices invisible in order to maintain systems of control has historically been a hallmark of technical communication. “Good technical writing is so clear that it is invisible” (Longo, p. 111). In other words, good technical writing taps into the tacit knowledge of a community such that it can “fit into the existing web of tacit knowledge, workflow, and work tools” (Spinuzzi, p. 166). Barad’s conception of intra-activity shows the problem with seeing technical communication as invisible, as if the apparatus doesn’t affect what is possible. Considering what technical communication makes visible (or invisible) in a given situation is to, as Barad says, be accountable for the “marks on bodies” left by the apparatus we use to carry out activities (p. 174). Our goal as researchers should be to work with others to identify tacit knowledge, the ways of ordering objects within frameworks that matter—that make the world in particular ways—with attention to the gaps, breakdowns, silences, and exclusions within those frameworks that when made visible can expose capacities for cooperation and collaborative response.

So, when I talk about *diffractive methodology* as responsive research in technical communication, what I’m getting at is being more deeply engaged with complex problem solving by partnering with experts distributed across networks to do work that addresses immediate needs while also paying attention to the need for sustained response. Barad might describe this as a method that engages “intra-action” rather than “interaction” (p. 140-141). As she describes these partnerships of knowing, they entail “differential responsiveness and accountability as part of a network of performances. Knowing is not a bounded or closed practice, but an ongoing performance of the world.” (p. 149). This echoes Mol’s call for research methods that aren’t grounded in definitive results and closure, but a sustained interest in questions that support action and response that allow us to do work better. I see potential models for this research by looking to

other scholars operating at the intersection of rhetoric, technical communication, and interdisciplinary work. For example, Mulvaney and Druschke (2017) recently published a study drawing on interviews with members of the fishing and research communities working to address issues of climate change in New England. Participants' responses highlighted the complications of reciprocity and the need for more trust, collaboration, and listening between different kinds of researchers and practitioners engaged in understanding a changing ocean. Among the complications were central questions about what counts as evidence when considering policy changes and practical applications among fishers. Mulvaney and Druschke describe data collected by fishers in the community and its value (or lack of value if it is perceived as not scientifically rigorous) to the climate scientists and policy-makers determining regulations and interventions to protect fisheries (p. 180). They also noted that communication and trust between members of the community, researchers, and policy makers are barriers to effective and sustained collaborative research.

3.6 Crafting new materialist methods

One of the problems for this approach to empirical research is the extent to which the differences that matter—the capacities for response—are emergent from rather than prescribed by research practices. This is an approach where mixed methods are required. It is an approach that is exploratory and heuristic rather than conclusive. For example, it was tempting to begin this project with the hypothesis that technical communication of skilled practitioners facilitates emergence in response to crisis. This seemed evident in the day-to-day work of the public health nurse in Scott County, who assumed the role of community educator, explaining and demonstrating the need for syringe exchange programs as a public health response. But this kind of hypothesis narrows the scope of research, and limits what can be included as evidence. If my

hypothesis is limited to the immediate day-to-day response of practitioners in the aftermath of crisis, I position technical communication research as a tool of observation and translation alone, one that limits the potential phenomena, actors, and situations my research can include, therefore limiting my ability as a researcher to participate in the ongoing response to problems. Technical communication research that frames out the messiness of the larger assemblage in order to focus on one aspect of a phenomenon is easier, but limits both the possible questions and the potential for response. This methodology emphasizes the extent to which our research practices are at the heart of what we do as technical communicators if we are willing to see our work not as a bridge between experts and non-experts, but as part of a circulatory system through which we build a collective world. Thinking through how practices of making and sharing knowledge order the world—not only how we understand the world, but how our practices make our material conditions for being in the world—is difficult, and it strains the boundaries of how technical communication has been traditionally defined outside of our discipline. An ontological frame for technical communication is much less stable and less generalizable than imagining technical communication as a set of flexible skills that will allow professionals to communicate across areas of expertise and facilitate participation with non-experts outside of their discourse communities. Instead our research methods become a heuristic for determining pathways for participation and active response, the goals of our research become enacting better practice rather than observing and articulating the actions of others.

The diffractive approach Barad argues for doesn't emerge from tidy methods that lead to conclusive results and clear implications for pedagogy and practice. Instead technical communication researchers interested in participation and response to complex problems are better served by thinking of our methods as a recursive, theory-driven heuristic for addressing problems

in context (Johnson-Eilola & Selber, 2012; Sullivan & Porter 1997). To that end, I summarize how the theoretical frames assembled here inform my methods and my conclusions throughout this study by highlighting the active verbs each theory adds to my heuristic for sense-making and response, while serving as a cross reference to draw attention to how theory informs my methods, exploratory conclusions, and helps to make visible the questions and orientations to work that serve as a heuristic for future research collaborations and partnerships designed to respond to problems.

4. CRAFTING A TIMELINE OF RESPONSE

While chapter one addressed the broad timeline of the Scott County, IN HIV outbreak, and the subsequent passage of syringe exchange legislation in Indiana, this chapter will present a more complete timeline of events surrounding the outbreak, my analysis of press releases and news stories written during the initial outbreak response, and some of the relevant history of syringe exchange and harm reduction in the United States. One purpose of this study is to provide a timeline of events and textual analysis that can help public health practitioners see the links I see, as a technical communication researcher, between the events that unfolded, and how those events were documented. Communication between practitioners and researchers is necessary for effective collaboration, and a case study like this gives us a starting place for discussion. As I will discuss at the end of this chapter, my document analysis helped me to determine both who my interview participants should be, and what initial questions I would bring into our interview conversations.

This analysis is also a valuable starting place as a sensemaking tool. Sensemaking, as an operational response to crisis (Weick, 1999), has often been used to help organizations understand what happened and evaluate capacities for response in the future. Sensemaking activities are reflexive, meaning they help practitioners understand what happened and how the operational decisions made in the moment reveal both existing and emergent infrastructure. In moments of crisis, decisions are often made with more public scrutiny, and with a more distributed network of stakeholders, where mundane institutional decision making can have lasting impacts on policy and procedure (Weick, Sutcliffe & Obstfeld, 2005). Sensemaking is a method that pays attention to how operational response is enacted, in that it accounts for how response can "bring events and structures into existence and set them in motion" (Weick, p. 306). Sense-making helps researchers understand how "the answer to the question 'what's the story?' emerge[s] from retrospect,

connections with past experience, and dialogue among people who act on behalf of larger social units." (Weick et al, 2005 p. 413). This chapter is my starting point for retrospective analysis, in which I also identify participants for further dialogue and perspective as I move into interviews and mapping in later phases of this study.

The simplistic timeline in the table below serves as a summary, and also a reference point as I later complicate the timeline with more granular details and overlapping narratives unfolding in other Indiana communities, which I do in chapter five. I also use this initial timeline to show the escalating number of people diagnosed with HIV in the Scott County area. Most of the people diagnosed during this outbreak live in Austin, Indiana, a town of approximately 4,000. While this study focuses on theory and method related to technical communication research, and the Scott County outbreak is used largely as a case study through which I can frame questions and methodological concerns related collaborative research methods, I also want to keep visible the people these numbers and analysis represent. As of May 2, 2016 ISDH had identified 191 people who tested positive for HIV in Scott County and whose lives are shaped by the operational decisions made by public institutions represented in this study. One ongoing concern of this research is to consider how to include the communities directly and materially affected by complex problems in substantive ways. My interview participants raised these questions, and I revisit what a more inclusive model for this research might look like in chapters five and six.

4.1 Initial timeline of events

Table 2: shows the timeline of events related to the Scott County HIV outbreak from January 23, 2015—May 2-2016

Date	**Event**	**# of cases identified**
January 23, 2015	A cluster of HIV diagnoses in Scott County are identified by disease intervention specialist with ISDH.	11
February 23, 2015	ISDH issues the first press release documenting the outbreak.	30
March 20, 2015	ISDH requests CDC team including epidemiologists and disease intervention specialists to help with contact tracing. The state begins a 90 day public awareness campaign focused on HIV testing.	68
March 25, 2015	Governor Pence declares a public health emergency in Scott County and authorizes temporary emergency needle exchange by executive order.	--
March 27, 2015	ISDH establishes an "incident command center" to coordinate public health emergency response.	81
April 4th, 2015	Needle exchange program begins in Austin, IN. The "one-stop shop" includes syringe exchange, HIV/HCV testing, vaccinations, and resources to help people sign up for the Indiana state health insurance program (medicaid).	89
April 7th, 2015	The Indiana House passes legislation authorizing syringe exchange programs in Indiana.	--
April 17th, 2015	A mobile needle exchange is announced for Scott County. The health commissioner attributes the sharp rise in HIV cases to increased testing.	130

Table 3: Table two continued

Date	**Event**	**# of cases identified**
April 24, 2015	Governor extends initial 30-day emergency needle exchange for another 30 days with a second executive order.	142
May 5, 2015	Governor signs SB 461 into law, authorizing syringe exchange in Indiana.	149
May 26, 2015	Hours at Community outreach "one-stop shop" are reduced. Last press release issued from the "joint information center".	162
June 10, 2015	Access to testing and needle exchange in Austin, IN reduced to one day per week.	169
June 17, 2015	Long-term planning report issued by ISDH.	
June 25, 2015	Community outreach center in Austin, IN closed.	170
November 6, 2015	Retesting initiative, in partnership with the CDC begins in Scott County.	184
May 2, 2016	Public health emergency declaration extended to May 2017.	91

A basic timeline is useful for understanding the shape of the operational response. I was able to identify some of the subtle operational changes that could be explored in more careful detail with further analysis. For example, the March 27, 2015 creation of the incident command center as the source for ISDH public information related to the outbreak was an indicator that required more careful analysis of changes in communication. Similarly, the April 4, 2015 creation of the "one stop shop" for syringe exchange, and the subsequent creation of the mobile exchange were evidence of operational decision making that might benefit from further analysis. My initial questions were simple: How did an operational response to crisis make possible the politically

untenable, that is, how did an HIV outbreak create a space for the emergence of syringe exchange in Indiana? What seemed most important to me was the divergence between political and material realities, that is what was true for politicians, and what had defined the political reality of syringe exchange in Indiana shifted in response to what was suddenly a public emergency that could no longer be ignored, regardless of carefully guarded political ideology. The day-to-day response of public health practitioners and epidemiology experts built infrastructure that demanded syringe exchange as the solution to a problem, and that infrastructure, once in place, also began to influence mechanisms for further response. As I noticed these layered, and opposing realities unfolding together, it became more clear to me that new materialist methodologies would be a useful tool for tracing and explicating the emergence of syringe exchange in Indiana.

4.2 Making sense of the outbreak

What seemed most important in analyzing both the press releases and news stories I examined in this phase of the study was to start tracing the tacking back and forth of boundary objects that Star describes as the movement between vague or tacit sets of agreements and more stratified policy. Syringe exchange itself is one such boundary object, and thinking about how that boundary object was realized in different ontological frames (for example, that of politicians vs that of public health practitioners responding daily to the outbreak in Scott County) was one way I went about my document analysis. This required that I identify both stakeholders and the potential decisions, objects, and agreements that make up syringe exchange. In order to explore some of the more complex aspects of this movement represented in communication between stakeholders, including how day-to-day operational decision making informed possible modes of response and policy development, I mapped major events related to the outbreak response. As I outline in chapter two, I began by reviewing the relevant press releases issued by ISDH from February 25,

2015 to May 2, 2016, which ISDH still maintains as part of a curated archive documenting the HIV outbreak in Southeastern Indiana (in.gov). I also identified local and national news stories, published in the same time frame, that covered the outbreak and the state public health response. I reviewed both the press releases and news stories on a paragraph by paragraph level, mapping the events in news stories alongside the relevant press releases, using holistic analysis (Roozen, 2010) to highlight how the text makes operational decisions visible, both for collaboration and for communication to the public. I carefully considered language, both in the operational response and in the quotes offered by individual officials, practitioners, and advocates speaking to the press so I could begin to identify the sensitizing metaphors used to describe and organize the state's ongoing repose to the outbreak. (The reference list for press releases used in this analysis can be found in Appendix A, and a further description of my methods for collection and inclusion is discussed in chapter four.)

Because I was interested in how different groups, through their communication and decision making, built their reality of the outbreak, and because I am attuned to those realities as multiple, I looked for a method that would help me identify differences in the emerging infrastructure supported by different stakeholders. Attention to sensitizing metaphors in my selected data set was a constructive way to look at the relationship between the language used for communication, and the material effects of that language as communication circulated and stakeholders made decisions. Sensitizing metaphors are a key element of what Johnson (2018) describes as an "infrastructural approach to rhetoric in health and medicine" (p.61). Sensitizing metaphors are the rhetorical background knowledge of operational decision making—that is, they are the symbols and shorthand used and published repeatedly to frame processes and develop commonplaces that can be used by practitioners, the media, and the community to understand and

make decisions about what is happening. Attention to these metaphors is a rhetorical approach to research that "gets at the invisibility of infrastructure" (p.65). Recognizing these metaphors is essential because they create shared understanding, organize work, and allow for collaboration across sometimes disparate groups. In other words, sensitizing metaphors can help researchers and practitioners identify boundary objects and their movement (Star, 2010). I will further describe boundary object formation and movement in chapter three. In the remainder of this chapter, I will outline one key finding that informed my interviews with practitioners, that is, **sensitizing metaphors shift in public discourse as operational response unfolds**.

4.3 From local problem to public health emergency

As indicated in the previous timeline, the cluster of HIV cases that signaled an outbreak were identified in January of 2015. The first press release informing the public of the outbreak was made on February 25, 2015. These initial press releases took a "news reporting" approach to describing the outbreak. They detailed the agencies responding, explicitly connected the outbreak to IV-drug use, and called for drug addiction intervention. For example, the first press release says mentions IV-drug use as the main vector for disease transmission in the second sentence of the release. It goes on to say "State health officials are working closely with local health departments, health care providers and others to contain the spread of HIV in southeastern Indiana." ISDH released only two other press releases between February 25 and March 25 when Governor Pence declared a public health emergency. These initial press releases are not detailed with the daily operational choices being made by ISDH in Scott County. Throughout February and March, press releases included boilerplate text with toll-free numbers for HIV testing, a substance abuse and addiction hotline, and weblinks for both the health department and the state health insurance program. This is the kind of information that ISDH would want a news agency printing this story

to pass along. Press releases prior to the declaration of a public health emergency show that there was little expectation that the general public would be interested or concerned about day-to-day response.

On March 25, 2015, Governor Pence declared the outbreak a public health emergency, and subsequently authorized a 30-day emergency needle exchange program in Scott County. At the time of his announcement, the outbreak had grown to 81 people newly infected with HIV. Pence also announced the formation of an "incident command center" for further media response, and to consolidate county, state, and federal resources and expertise as the response moved beyond HIV testing and contact tracing to a proactive strategy for syringe exchange to stem the outbreak. Following the formation of the incident command center, the press releases changed in several important ways. ISDH press releases no longer included individual contact information or names of spokespeople from ISDH. Press releases were issued from the "joint information center" and the purpose of the reports shifted from news reporting to documenting the operational response to the outbreak. That is, each press release began with the number of positive cases identified, then documented which agencies and organizations were responding. The individually oriented boilerplate from previous releases disappeared. Releases became memo-like with headings and bullet points. Rather than repackaging the daily developments of the outbreak as news, ISDH began sharing a memo-like reporting on activities via the press releases, such that it is clear in the memos issued through April and May how the daily realities of operating the emergency syringe exchange began to shape both ISDH infrastructure and the public understanding of the problem.

Twice weekly press releases through April and May catalogued operational response and documented the organizations, agencies, and partners assembled to respond to the crisis, as well as the rising number of positive diagnoses. For example:

- The emergency needle exchange, named the "one stop shop," opened on April 4, 2015 as a center for testing and for registering people for the needle exchange program.
- The agencies included in the one stop shop expanded to include help with state issued IDs; birth certificates; enrollment in HIP 2.0 insurance; HIV testing and immunizations, including tetanus and Hepatitis A and B; and referral services for substance abuse and mental health treatment. A local church organization provided transportation for needle exchange and testing.
- Press releases offered community guidance about what to do if citizens found needles in their yard or street.
- Hours of operation for the one stop shop changed to include evening hours, at the request of community members.
- Workforce Services was added to the list of agencies available through the one stop shop.
- The Scott County Health Department began operating a mobile needle exchange.
- Reports targeted a one-to-one exchange rate for needles, documenting the number of needles distributed and collected by the health department, without describing the value of needle exchange for improving health outcomes and reducing the spread of disease.

In tracing these movements through the press releases, I mapped newly formed coalitions. Local church organizations, substance abuse programs, and national organizations like the CDC and the Harm Reduction Coalition were gathered to develop a system for responding to the unfolding outbreak. (I share this map, and further discussion informed by practitioner interviews in chapter five.)

The sensitizing metaphors in the initial response are easy to spot. "Outbreak," Containment", and "Emergency needle exchange" inform how people understood what was

happening in Scott County, and how the health department and the state government planned to treat the crisis—as an isolated disease outbreak that could be contained without addressing the wider problems that led to the outbreak. Governor Pence used military metaphors to describe the response as a "surgical strike," and the deployment of state resources as "boots on the ground." (Dolan, 2015). Jerome Adams, the state health commissioner, talked about the need for collaboration to "stem the tide of the outbreak." However, as the situation in Scott County drew national attention, more experts and practitioners who understood addiction and harm reduction were brought into the conversation, and the scope of a problem deeply entangled in opioid addiction and rural healthcare became more evident, the language used to describe the work in Scott County began to shift.

4.4 From "surgical strike" to "building a model for response"

I noted an interesting shift in the language about 60 days into the response, which is partly driven by the involvement of the CDC, and partly by an evolving understanding about what sustained response to disease prevention in the midst of the opioid epidemic might look like. As the outbreak grew and became the largest U.S. outbreak of HIV since the 1980's, unprecedented because of its rural location and direct ties to opioid addiction, it quickly drew attention from both national media and the Indiana state legislature. National coverage of the story meant that the narrative was no longer being controlled only through state press releases. Journalists interviewed residents, experts in the field of harm reduction and addiction recovery, and officials from the CDC about the new needle exchange in Scott County. A national, if targeted, conversation about the efficacy of syringe exchange programs, and the inadequacy of a 30-day emergency exchange was beginning in media outlets outside of the Midwest like *The New York Times, and Rolling Stone.* The state legislature held hearings to explore a state law authorizing syringe exchange, despite the

governor's threat to veto any such legislation. Interviews with local officials underscore how local and state officials understood the response—as short term, focused only on the containment of HIV in the area. For example, in an interview with *The New York Times*, Austin, Indiana police chief Donald Spicer said, "My biggest fear with this is [ISDH and the CDC will] come in like a hurricane and then after 30 days they leave us high and dry. Don't leave us. Stay with us until we get past this thing." (Goodnough, 2015). Local concerns were still focused on the immediate problems and the daily operations questions in Scott County, but the increase in media attention was also widening the conversation to consider more long-term implications and the value of syringe exchange strategies in response to drug use and addiction.

Experts who testified to the state legislature, as well as those interviewed by the press, started to frame the Scott County outbreak as a warning of things to come, not an outlier or isolated problem. A local family doctor, noting the increase in Hepatitis-C cases in the area, observed, "This could explode everywhere in Indiana" (Rudavsky, March 2015). Jonathan Merriman, director of the CDC's National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention, described the Scott County outbreak as a "warning" to other practitioners seeing similar patterns of increased hepatitis-C infections in other rural communities. (Campo-Flores, 2015). In April, the CDC issued new national guidance for public health workers and health care providers, noting the 84% coinfection rate of hepatitis-C among newly diagnosed patients with HIV in Scott County. (Campo-Flores, 2015). This shift to a wider conversation about Scott County, not as an isolated incident, but as a warning of things to come, gained strength in the national media coverage. Daniel Avery, policy director for the Harm Reduction Coalition, said "I worry this isn't going to be the last one...it's what I call the second phase of America's opioid epidemic" (Dolan, 2015).

At the beginning of May 2015, the Indiana state legislature began debate on a bill that would authorize syringe exchange programs in counties that could prove risk-factors for HIV outbreak, including increased rates of hepatitis-C infection. State representatives, who, like Governor Pence, had opposed syringe exchanges because they believed syringe exchanges enable drug abuse, found themselves rethinking their stance. State representative Ed Clere explained, "You adapt and you evolve based on the world we live in, so we're going to have to see if that requires a pivot for us." (AP, 2015). On May 5, 2015, Governor Pence signed SB 461 into law, authorizing syringe exchange programs in counties that could demonstrate high risk for a potential outbreak. By mid-May, Indiana state health commissioner Jerome Adams had shifted his language about the outbreak from emergency response to focus on sustainable response—and on building a model that could be implemented by other communities. Syringe exchange in Indiana as a sustained response to disease prevention in the midst of the opioid epidemic was not part of any political reality at the beginning of 2015, however, just a few short months later politicians had invented a reality, through legislation, where syringe exchange in Indiana was possible, not only in Scott County, but as a state-wide response to a public health emergency.

This shift from "emergency response" to "building a model for sustainable response" is important because of how this new metaphor organized the work of ISDH. Counties now had a new mechanism for responding to the health concerns of IV-drug users. Instead of managing a short term response to a problem, ISDH began to organize resources and develop infrastructure for syringe exchange programs in other Indiana counties. State sanctioned syringe exchange programs in Indiana allowed public health practitioners, local partners, and university researchers already engaged in supporting these programs in their communities to coordinate with a wider

network of harm reduction practitioners and advocates. (I further discuss this shift in chapter five as I look more closely at policy guidance documents issued by ISDH.)

4.5 Metaphors organize work

Table 4:Shows how two different metaphors, "public health emergency" and "building a model for response organize different kinds of work

Public Health Emergency	**Building a Model for Response**
● Outbreak ● Boots on the ground ● Surgical strike ● Contain the infection ● Emergency Needle Exchange	● This could happen anywhere ● Creating a blueprint ● Complex problem ● Treatment and support ● Harm reduction

As I summarize in table four above, I found the shift in metaphors that organized work, from public health emergency to "building a model for response" a compelling starting place for considering how metaphors organize work, and it was this concept that focused my interview questions. Cataloging the agencies and stakeholders detailed in the press releases and news stories also helped me to compile a list of potential interview participants for recruitment. As I detail in chapter two, when I discuss participant recruitment methods, my initial list included county and state public health professionals, community activists, academics in public health and HIV/STD prevention, and policy makers at national foundations. One key interview participant was Erika Chapman, who directs the harm reduction and syringe services program at ISDH. While my initial interest was in "building a model for response" as a metaphor that organized work, my interview with Chapman, and other public health practitioners shifted the focus to other metaphors that further shifted public discourse surrounding syringe exchange programs in Indiana. I will discuss these changes in detail in chapter five, but as I conclude this chapter, I begin to account for the shift from of the shift from "emergency needle exchange" to "harm reduction," as a metaphor that

organizes work, and I review a brief history of harm reduction practices in the U.S., and in Indiana specifically.

4.6 From emergency needle exchange to syringe services and harm reduction

Tracing how the immediate need to address the crisis in Scott County allowed for the emergence of new mechanisms for response in Indiana makes visible how seemingly mundane policy decisions can create space for different responses and different realities for addressing IV-drug use as a community problem. One significant marker for this shift was the change in ISDH policy language from "emergency needle exchange" or "needle exchange programs" to "syringe services programs." The initial guidance published by ISDH in June 2015 is titled "Syringe Exchange Program Guidance for Local Health Departments." The updated 2017 guidance manual is titled "Syringe Services and Harm Reduction Program Manual for Local Health Departments." While these changes seem subtle, as sensitizing metaphors that organize work, they have significant policy consequences. Syringe services programs shift emphasis from a one-to-one needle exchange rate, which is often a concern of law enforcement and the community. This shift allows a more diverse response to people's needs, and allows for more partnerships, both within agencies, and between public health practitioners, mental health practitioners, and the community. There are two examples that demonstrate how incremental policy changes that result in new metaphors organize work in ways that shift what is possible for response to complex problems.

4.7 Shifting metaphors as response unfolds

Table 5: shows a shift in sensitizing metaphors to "emergency needle exchange" and "harm reduction"

Emergency needle exchange	**Harm reduction**
● IV-drug users are the problem ● Focus on registration, monitoring ● One-to-one needle exchange ● **Containment as the goal**	● Chaotic drug use is the problem ● Syringe services ● Naloxone training ● PrEP ● **Well-being & recovery is the goa**l

The shift to a *harm reduction* as the sensitizing metaphor allowed for new partnerships between teams within ISDH. My interview with Erika Chapman revealed how partnerships within the agency, with teams focused on STDs including viral hepatitis, and teams focused on reducing overdose deaths through distribution and training to administer overdose reversal drugs like Naloxone or Narcan have diversified the ways that individual communities are engaging the problems experienced by those with substance abuse disorder. Other partnerships led to programs with an emphasis on pre-exposure prophylaxis (PrEP) to reduce the risk of HIV infection for people who inject drugs. The addition of Naloxone training and PreP are now central to the ISDH public health response to opioid addiction. These changes, which are first administrative, made at the level of policy and operational cooperation, have material impacts on how county exchanges develop grant strategies, and expand the vectors they have for connecting with those in the community who can benefit from harm reduction programs. I will return to how harm reduction as a sensitizing metaphor organizes work in chapter five when I examine the emergence of the syringe exchange program in Monroe County, Indiana.

Harm reduction and the emergence of syringe exchange programs in Indiana

The recent outbreak has renewed attention to harm reduction strategies, but syringe exchange programs like those currently operating in Indiana have a long history deeply entwined

with public response to both drug use and the spread of diseases like Hepatitis-C (HCV), HIV and AIDS. These programs were first developed in the early 1980s in the Netherlands in order to respond to drug use in a manner which prioritized harm reduction rather than criminalization. Dutch researchers and policy makers decided that a public health approach responding to the problems related with IV-drug use, namely the spread of HCV and other blood borne illnesses through needle sharing, would be more effective than policing or treatment programs alone. Debates about the efficacy of the competing philosophies of supply reduction or criminalization of drugs and drug users, and the public health response known as harm reduction has always been entangled with the HIV/AIDS epidemic that spread across Europe and the United States shortly after Dutch harm reduction programs began (Inciardi and Harrison, 2000). Policy makers that support harm reduction cite multiple studies that show the efficacy of syringe exchange programs in reducing infection rates for hepatitis and HIV. For example, a recent (2009) comprehensive review of international research regarding the efficacy of syringe exchange programs found "compelling evidence that increasing the availability, accessibility, and both the awareness of the imperative to avoid HIV and utilization of sterile injecting equipment by [injection drug users] reduces HIV infection substantially" (Wodak and Cooney, p. 802). A similar study, reviewing published research on the effectiveness of syringe exchange programs (SEP) found that in 42 published studies, involving both U.S. and international SEPs showed significant evidence that SEPs reduce HIV risk behavior, and instances of HIV transmission (Gibson, Flynn & Perales, 2001). These comprehensive studies, which both demonstrate the breadth SEP research, and the efficacy of SEPs for improving public health outcomes, have done little to persuade those opposed to syringe exchanges for ideological reasons.

Despite compelling empirical evidence that harm reduction approaches generally, and syringe exchange programs specifically, reduce the spread of infection, the United States has been slow to adopt syringe exchange, even in the height of the AIDS epidemic at the end of the twentieth century. Currently there are approximately 226 SEPs operating in the U. S., with more than 60 of those exchanges opening in the last three years, in the wake of new legislation in Indiana and seven other states. Opponents tend to take a "zero tolerance" approach to drug use that focuses on supply reduction and criminalization. Indiana? This case? While opponents tend to be unswayed by empirical evidence that shows efficacy of harm reduction programs, they are often quick to cite some early Canadian studies that showed a higher incidence of HIV among drug users that utilized syringe exchanges (Bruneau, J., Lamothe, F., Franco, E., Lachance, N., Désy, M., Soto, J., & Vincelette, J., 1997; Strathdee, S.A. et al., 1997). The conflicting ideologies of harm reduction and zero tolerance/criminalization, have continued to play out in public policy debates, and are receiving new attention as the opioid epidemic and an increasingly partisan political landscape make responding to the rising complications of IV-drug use visible in communities across the country even more difficult. For example, the newly elected sheriff in Scott County, IN, has taken a hard line approach to criminalization and arrest, while stating his opposition to SEPs, regardless of research and reports that demonstrate how SEPs decrease risk behaviors, encourage recovery, and engage people who inject drugs in community building and education in ways that promote disease prevention and among people who inject drugs (e.g. Des Jarlais and Semaan, 2008; Semaan & Leinhos, 2007).

This push-pull between law enforcement strategies, anti-drug policy, and public health research has informed the formation of practitioner and research networks for harm reduction since the 1990s. Federal prohibition on funding for syringe exchange programs and syringe exchange

research has been in place in some form since 1988. Some restrictions were lifted in 2015, but which U.S. counties could receive federal funding was limited by a CDC report identifying counties with high risk factors for HIV outbreak (CDC.gov, 2018). These barriers to funding, both for research and for syringe exchange services have led to a national network of private foundations that have supported harm reduction research, education, and practice outside the structure of federal and state public health policy response. Of particular interest to this study, and how researchers can think methodologically about outreach and community building as research outcomes, are the formal and informal university and community partnerships that helped to develop infrastructure for harm reduction programs despite state and federal opposition.

Two central resources for syringe exchange and harm reduction programs in the U.S. are the Harm Reduction Coalition (HRC) and the North American Syringe Exchange Network (NASEN). Both organizations formed in the early 1990s as a response to the HIV epidemic, and the lack of attention to harm reduction as a viable strategy for reducing the transmission of HIV among people who inject drugs. The HRC, formed in 1993, was established a coalition of public health workers advocates and drug users committed to better health outcomes and stigmatization for people who use drugs ("about us", n.d.). Similarly, NASEN, formed in 1992 began as an informal network of syringe service providers that worked to leverage buying power and distribution. As the organization has grown it has helped to provide resources to new SEPs through access to at-cost supplies and funding grants. ("NASESN a Dave Purchase initiative" n.d.). These national organizations, as well as state level private organizations operating SEPs regardless of state-sanctioned harm reduction policy are central to understanding how current SEPs are operating in Indiana. The Chicago Recovery Alliance, established in 1992 as an activist organization doing community outreach and providing syringe exchange services and HIV testing

was integral to the formation of both Prevention Point Indiana, an activist-run syringe exchange program that operated in Indiana in the early 90s (Stevens, 1997), and more recently the Indiana Recovery Alliance (IRA), which began distributing syringes in Monroe County, IN in 2014 (see chapter five for further discussion of the emergence of syringe exchange in Monroe County). One significant feature of these programs is the relationship between SEPs and university research. Activist led programs like these relied on a provision of state law that exempted research projects from state syringe prohibition laws (Aamidor, 1994). In my interviews with the current director of the IRA, these tactics, for partnering with research projects in order to get access to resources are still at the heart of activist-driven harm reduction efforts, and create an opportunity for those of us interested in research as a response to complex problems like the opioid epidemic to think purposefully about how the resources and privileges afforded to us as university researchers can directly benefit work in our communities.

As Indiana moves beyond its initial response to the HIV outbreak that eventually led to in a syringe exchange law in Indiana, the conflicts between harm reduction and ideological opposition to "enabling drug use" continue to complicate responses to rising infection rates of Hepatitis-C in several counties. Hepatitis, and other blood borne infections are considered a risk factor for increased instances of HIV infection. While syringe exchange was seen as a viable, though not uncontested, response to the outbreak in Scott County, as syringe exchange programs have spread to other Indiana counties, implementation has been uneven and opposition is growing in some counties. In October 2017, county councils in two Indiana counties that initially authorized syringe exchanges voted to defund those exchanges over moral objections to "enabling addicts" and "facilitating illicit drug use" (Hedger, 2017). Public health workers in other counties including Tippecanoe County, which started its own syringe exchange in August 2017, are facing these same

pressures (Bangert, 2018). The need for syringe exchange programs to show efficacy and compliance, even while empirical evidence of success is often overwhelmed by a public sentiment of moral outrage and a fear of increased criminal behavior. This skepticism is reflected in journalism about syringe exchanges, which tends to feature a mix of voices: public health workers, CDC experts, local law enforcement, community members, and sometimes the addicts themselves. Included in this mix of voices are the procedures, policies, the needles and the viruses themselves, all of which also speak as part of this assemblage where methods for policy implementation and response are often unclear and contested. The goal of this study is to tease out some of the threads of this complex response, and identify methods for research collaborations that engage with, rather than hinder or dismiss the work of community advocates, while also considering how to best engage with and enhance the work of scholars in other fields who are also working to address complex problems.

5. INTERVIEW ANALYSIS AND ASSEMBLAGE MAPPING

In chapter four I outlined the timeline of the outbreak, and some of the metaphors that emerged and organized work during the initial outbreak response in Scott County. My analysis in that chapter, informed by the press releases and news stories that were publicly available, helped me to identify possible interview subjects and determine starting questions for those interviews. (This process is described in more detail in chapter two.) In in this chapter I introduce three of my interview participants and trace several data stories that emerged as I moved between textual analysis in chapter four and the new information gathered from practitioners currently working to build capacity for response to the opioid epidemic in Indiana. By looking at the different threads that emerged as I developed this case study together, or as Barad might say, through one another, I trace how the metaphors "public health emergency" and "harm reduction" shape the work of practitioners working in different areas of operational response.

Sustained response to complex problems like the opioid epidemic require a network of practitioners to respond to the daily exigencies of program administration while also planning for future action. This network spans government and institutional structures, research sites in a variety of fields, and sites for direct engagement with the community. Work is distributed across these sites and requires communication through political, social, physical, and technical infrastructures. I frame technical communication as the media—the circulatory system through which infrastructure is built, maintained, and redesigned. Indeed, I argue that the relationship between how we circulate and communicate information helps to make the material conditions through which our capacities to respond emerge. Technical communication is participatory in that we are engaged in making visible what *is* and what is possible—and the ontological frames I take up in new materialist theory argue that what *is* is not a given waiting to be discovered.

What is possible and what is real in practice is co-created through our methods for sensemaking and discovery. The practitioners I interviewed for this phase of my project do not simply operate from different ideological and professional points of view. They operate, as Mol describes, from a multiplicity of realities. Syringe services programs show up differently for different stakeholders, and the day-to-day reality of what syringe exchange *is* changes based on how those stakeholders interact with syringe exchange as a boundary object. Syringe exchange is a law with compliance requirements. It is also strategy for reducing disease transmission. Furthermore, it is a method for connecting with people in the community with substance abuse disorder. The multiple realities that emerge from syringe exchange aren't siloed—for example, the program manager I interviewed at the Indiana State Health Department (ISDH) is responsible for translating syringe exchange law for county health departments, and she is responsible for ensuring compliance with the law. She also has years of experience with harm reduction research and philosophy and moves between different ontological realities in order to effectively do her job.

Technical communication researchers, who focus their attention and expertise on the relationships between ontology, circulation, and emergence, need methods that engage multiplicity to more effectively collaborate with the myriad other stakeholders gathered by complex problems. We need to follow multiple threads, layer different approaches and experiences, and engage different stakeholders to seek out intra-action where we can, as Barad argues, hold ourselves responsible and develop ethical practices for developing a research apparatus. I see this as working with others such that our research can amplify and support emerging infrastructure and capacities for response that practitioners and experts across disciplines are developing. Attention to multiplicity, as Mol describes it, in terms of how different stakeholders respond to and experience metaphors in practice can help to get at how those metaphors organize work. Thinking about where

that organization allows for collaboration and invention is one way to get at the ontological possibilities entangled in those metaphors.

5.1 Participant Interviews

As noted in my methods chapter, I interviewed five participants, including two ISDH employees, two public health practitioners at the Monroe County department of health, and the executive director of the non-profit organization, Indiana Recovery Alliance (IRA). The Monroe County health department contracts with IRA to run the syringe services program in Monroe County, which is located in Bloomington, IN. Bloomington is also the home of Indiana University which houses a medical school and a large public health program, including the Rural Center for AIDS/STD Prevention (RCAP), a public health research collective that works to address the issues of rural communities responding to HIV/AIDS, STDs, and the current opioid epidemic. As I will note later in this chapter, the proximity of a large research university with researchers engaged in community response in rural communities is an important aspect of how the syringe exchange program in Monroe County developed—both before and in the aftermath of—the passage of SB 461.

All five of my interviews were useful, and helped me to understand the day to day realities of community outreach and harm reduction in Indiana. I draw on information from those interviews as I illustrate the sensitizing metaphors that organize work. In this section, I move between interview analysis and further textual analysis to tell three important data stories that are significant to understanding both the emergence of syringe exchange, and the value of this case study as a frame for developing technical communication methods. I also focus on the three interviews that were most useful in helping me trace he metaphors of "public health emergency" and "harm reduction" as they emerged in response to the opioid epidemic in Indiana. My

interviews with Melanie Vehslage, a harm reduction health educator for Monroe County, and Jessica Hartley, a disease intervention specialist for ISDH were informative, and might be useful for other aspects of this research, but their interviews were not central to the data stories in this chapter. For the scope of the analysis contained in this chapter, I focus on three interviews with practitioners who clearly show how metaphors both organize work and support the different ontological worlds through which syringe exchange emerges as response.

Erika Chapman, Harm Reduction Program Manager at ISDH

Chapman has been working in HIV prevention since 2006, spent time working as the viral hepatitis coordinator for ISDH and eventually became the HIV surveillance coordinator. Her background is in public health and harm reduction related to substance abuse disorder. As the HIV surveillance coordinator at the time of the 2015 outbreak, she was involved with the creation of the emergency needle exchange in Scott County. After the passage of SB 461 she was tasked with developing policy guidance and providing technical assistance to counties that wanted to apply to run syringe exchanges. She helped to develop the infrastructure for reporting and compliance required by the new state law. The initial policy guidance, published by ISDH in June 2015, provided county health departments basic information and a roadmap for navigating the new law. In 2017, she became the harm reduction program manager at ISDH. As I mentioned above, she is responsible for making sure counties currently operating syringe services programs are in compliance with the law, including proper reporting of their services. She is also responsible for providing technical assistance to counties that are interested in implementing harm reduction programs, including syringe exchange, and she helps educate practitioners on best practices—including the principles of harm reduction that guide effective outreach work. She works in close partnership with the teams focused on overdose prevention, viral hepatitis, and HIV response at

ISDH. This partnership is one element of the evolving operational response at ISDH that has allowed for a shift from emergency response to harm reduction best practices as a metaphor that organizes work. The partnership with other working groups has allowed for more attention to and funding for interventions like naloxone training and distribution, and Pre-exposure prophylaxis (PrEP) medication to increase HIV prevention among at risk groups.

Chris Abert, Executive Director for Indiana Recovery Alliance

Abert is a community organizer and outreach coordinator who helped found IRA as a grassroots organization addressing the needs of the homeless and people who use drugs in the Bloomington area. His engagement with harm reduction strategies grew directly from his experience as a social worker, his history as a former intravenous heroin user, and the way he understands the lived experience of people in the community. Unlike other practitioners I interviewed, he does not have an institutional background in public health. Abert worked with other volunteers in the community to fulfill tangible needs, for example, providing warm coats and blankets for people who lived and slept outside during Indiana winters. He organized volunteers and developed a network for providing harm reduction services, including syringe exchange and naloxone for overdose reversal more than a year before SB 461 sanctioned syringe exchange in Indiana.

Kathy Hewett, Lead health educator for Monroe County Health Department

Hewett has worked in public health for 20 years. She is currently responsible for supervising the public health side of the syringe exchange program in Monroe County. She has been a disease intervention specialist, and has worked in communicable disease response, as well. Hewett described how substance abuse and mental health concerns have always been involved in some aspect of her work in public health. When Monroe County first began meeting with partners and organizing the application for a syringe exchange in August 2015, the effort was led by the emergency preparedness coordinator, but when that person left, Hewett's background made her most suited to take over the effort. She currently supervises reporting, coordinates with partners in the community, and writes grant funding to support the syringe exchange in Monroe County. The community-oriented nature of the syringe services program in Monroe County is significant, both for how it shapes the partnership between Monroe County health department and the IRA, and how this approach seems to influence ISDH policy guidance. Hewett says, "What we did is basically a call-out for all the organizations that were interested...the city, the hospital, large mental health groups like Center Stone, the Miller Health groups, and different treatment facilities." Later in this chapter I will talk more about the role Hewett plays as supervisor for the Monroe County syringe exchange program, and how her work illustrates the way practitioners negotiate the multiple realities of syringe exchange.

5.2 A tale of two metaphors: "public health emergency" and "harm reduction"

This case study yielded two very different pictures of how syringe exchange programs in Indiana emerged in response to the current opioid epidemic. As I detailed in chapter four, the Scott

County HIV outbreak was the crisis event that triggered an institutional/governmental public health response to IV-drug use. This response was practitioner driven, focused on the knowledge and policy tactics available to public health professionals working in Scott County and at the state health department. My interview with Jessica Hartley, a disease intervention specialist who serves 12 counties including Monroe County, confirmed that it was the disease intervention specialist serving Scott County who initially identified a cluster of six new HIV positive diagnoses in the small rural community of Austin, IN in January of 2015. The months of emergency response and news coverage that resulted in SB 461, and a more long-term response to the opioid epidemic through syringe exchange programs in Indiana unfolded through a network of state, local, and federal public health professionals, advocates, and law-makers. In the case of the outbreak, the pathway to sanctioned syringe exchange programs used "public health emergency" as its organizing metaphor.

Public health emergency as organizing metaphor for governmental response

Unlike the basic timeline of events outlined in chapter four, the timeline below focuses on the stakeholders that engage with the outbreak, and some of their institutional or community positions. I developed this timeline using the press releases and news stories I analyzed in chapter four. Different stakeholder groups engaged with the outbreak as it progressed; they are represented by different colors on the map below.. Community groups engaged are in blue. At first this involvement was limited to the patients newly diagnosed with HIV and their families, but the community groups engaged expand as the outbreak was announced to the media, and a public health emergency declared. The "government" designation, represented in green, includes city, state and county health departments, the governor and the state legislature, as well as federal involvement from the Centers for Disease Control (CDC). The research designation, represented

in red, includes both national organizations like the North American Syringe Exchange Network, (NASEN), the Harm Reduction Coalition (HRC), the Midwest AIDS Education and training center, large treatment centers like Centerstone and IU Health, and Indiana University. Experts, institutions, and national advocacy groups are included in this category. While these organizations, researchers, and healthcare providers were, of course, engaged with the issues of opioid addiction and disease prevention long before the outbreak drew both governmental and media attention, I found no clear evidence that their perspective, recommendations, or expertise were considered during early responses to the outbreak. Indeed, the governor's initial insistence on a short-term syringe exchange program is evidence of how little practitioners engaged in the initial response were able to argue for long established best practices for harm reduction and community outreach at the beginning of the crisis.

Crisis event: Scott County outbreak

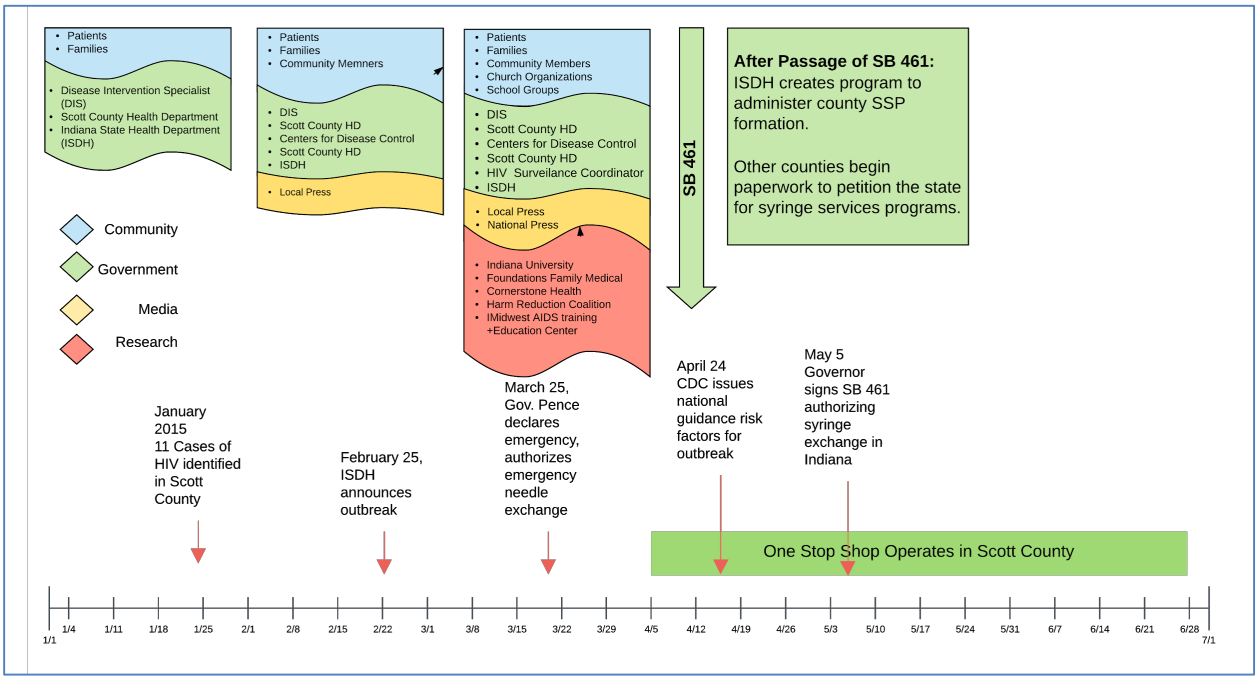

Figure 1shows the stakeholders gathered by the Scott County outbreak in relationship to the timeline for the outbreak.

The timeline above shows how the top-down, institutional knowledge of emergency response was shaped by ideological and political opposition to syringe exchange and other harm reduction practices. Community involvement was limited to those directly impacted by new positive HIV diagnoses, and the agencies engaged at the beginning of the outbreak were limited to county and state health departments and the treatment professionals to whom patients may have been referred. As the severity of the outbreak became clearer, more institutional mechanisms were engaged to direct the problem. A public announcement about the outbreak increased media attention, and ultimately greater attention by the governor and state lawmakers. As I outlined in chapter two, responding to a "public health emergency" was the primary work stakeholders were engaged in, and both press releases and policy documents republished and transmitted this metaphor for organizing work.

An important aspect of tracing sensitizing metaphors is looking for the ways they are translated and republished across policy and guidance documents such that these metaphors become shared vocabulary for organizing work and understanding processes (Johnson, 2018). This demonstrates the relationship between sensitizing metaphors as Johnson describes them, and boundary objects as Star describes them. How sensitizing metaphors organize work can get at the movement of processes and operational decision making that Star described as tacking back and forth between the vague and the organized (2010). What is stratified in policy documents also shapes more informal decision making, and shifts the public vocabulary for how to best respond to problems. Chapman described this as a different way of listening when we talked about how county health practitioners were talking about syringe exchange after the passage of SB461:

> For those communities that know that they want to be doing something more to serve people who inject in their communities, I think that they're kind of looking at it or

considering it maybe in a different way. Even if they determine that it's not a good fit for their community, I think that they still are at least listening to the idea. And not that they didn't before, but I think it's just a new way of listening.

Syringe exchange continued to exist as it had prior to the outbreak in the public imaginary—as enabling drug addicts in a way that is antithetical to "the war on drugs," but it also began to emerge differently, even among those who opposed syringe exchange as they understood it. Syringe exchange emerged as an emergency response tool. As I described in earlier chapters, this multiplicity might be best exemplified by the public health nurse in Scott County and the state legislators who found them advocating for syringe exchange despite their earlier opposition. For many, especially those conditioned by a law enforcement response to drug use, the reality of syringe exchange exists differently than it does for public health workers and mental health professionals who understand IV drug use as a mental and physical health problem rather than criminal behavior. With the passage of a law sanctioning syringe exchange, the intersections and negotiations between those different realities results in infrastructure for listening and responding differently than public health workers could before passage of the law.

Despite the new way of listening Chapman described in her interview, it is clear that the immediate institutional response to the Scott County outbreak focused on containment. As illustrated in chapter four, the governmental response took a militaristic tone, echoing both disaster response and a long history of the "war on drugs" mentality that characterizes U.S. response to drug use. After my interviews, I returned to the text of the executive order authorizing emergency needle exchange issued by Governor Pence, as well as SB 461 itself, and the policy guidance issued by ISDH to coincide with the new law. The governor's executive order 15-05, issued in April 2015, described the outbreak as a "public health disaster emergency" and invoked his

executive power under disaster response as the "occurrence or imminent threat" of a crisis. The purpose of the executive order authorizing a temporary, emergency needle exchange program in Scott county was highly focused—to control and stop the epidemic and create a path for "prevention and suppression of disease." The governor's order does not draw on any language related to harm reduction or long-term response. Notably, the executive order names "harm prevention" as a strategy to "provide technical support with respect to harm prevention and disease containment." This phrase, "harm prevention" is not one used by practitioners, but seems to be an attempt at taking the language of harm reduction and shifting it to fit the governor's ideological approach to addressing drug use in terms of prevention and "containment" with little attention to the long term needs for treatment or the history of harm reduction as a response to chaotic drug use, as I described in chapter four. The order frames the outbreak as a short term problem with clear, "medically necessary" short term goals. Criticism of the governor's executive order among public health workers, the CDC, and harm reduction experts was immediate, and resulted in hearings in the state legislature about the necessity of a more sustained response to the consequences of the opioid epidemic. In fact, that the governor had to reauthorize his order for a 30-day needle exchange with a second executive order extending the emergency provision for another 30 days is evidence that despite the governor's ideological conviction against needle exchange as part of a comprehensive response, the material reality and the scope of the problem was something he had to address.

The state legislature, in passing SB 461 in June of 2015, began to address some of the long term problems of IV-drug use, and did create a policy mechanism for syringe exchange in Indiana, but much of the operational mechanics of the bill maintained the militaristic, emergency response-focused language of the initial executive order. SB 461 authorized syringe exchange programs in

Indiana only when the state health commissioner had evidence to declare a public health emergency in a county. Programs could be authorized in counties where:

- There was evidence of an HIV or HCV epidemic and
- The primary mode of transmission is IV drug use and
- A syringe exchange program (SEP) is the medically appropriate response.

The law made clear that no state funding would be allocated to support the formation of syringe exchange programs. Meaning counties would have to fund syringe exchanges themselves, or tap into foundation grants and non-governmental organizations that traditionally support harm reduction measures like syringe exchange. The only indication in the initial law that legislatures were thinking of more sustained response and harm reduction policy is a requirement that syringe exchange programs needed to provide training on overdose response. It's not clear in the law if this is a requirement to provide training for the community, or only for those that worked in conjunction with the syringe exchange. However, in April of 2015, the Indiana state legislature passed "Aaron's Law" which allowed for community education training and administration of Naloxone for overdose reversal such that laypeople could legally carry and administer overdose reversal drugs like Narcan or Naloxone. Prior to passage of Aaron's law, overdose reversal drugs could only be administered by health professionals. This law made it easier for community based harm reduction programs to procure and distribute overdose reversal drugs like Naloxone and Narcan directly to those who inject drugs, their family members, and volunteers in the community. Some infrastructure for harm reduction strategies was emerging alongside the framework for syringe exchange as response to the public health emergency of HCV and HIV transmission. These small mechanisms that indirectly signal a need for harm reduction strategies as part of the emergency response authorized by SB 461 show the complex nature of syringe exchange, and hint

at the partnerships and networks that must be built to allow for cooperation among these disparate groups. Syringe exchange as boundary object that must serve stakeholders operating in different ontological frames begins to emerge here as an assemblage of people, organizations, objects, policies, and sites for distribution. Because the law requires that counties declare a public health emergency in order to authorize syringe exchange, it requires county health workers and county governments to literally name and develop infrastructure for a public health emergency if they want to respond to the realities of the opioid epidemic in their community.

In conjunction with the passage of SB-461, ISDH issued guidance for counties considering syringe exchange programs. The document, released June 4, 2015, is titled "Syringe Exchange Program Guidance." This detail is important: a title change in later iterations of the document, which I will discuss in more detail shortly, signals shifts in how ISDH partners with counties and centers a harm reduction, rather than emergency response—an approach that continues to this day. The guidance document is eleven pages long. It begins with this introduction:

> Syringe exchange programs (SEP), also known as syringe access (SAP) or needle exchange (NEP) programs are a harm reduction intervention that has been in existence since the late 1980s and has been scientifically proven to reduce transmission of HIV, hepatitis B and C, and other blood-borne pathogens in people who inject (PWI).

This brief description of syringe exchange as an intervention that reduces transmission of disease is the only way harm reduction is discussed in the document. This signals that though harm reduction principles may be emerging in this document, it's focus is on syringe exchange as emergency response, rather than on harm reduction as a public health approach to treating substance abuse disorder that can include syringe services. The guidance document includes a section on the history of syringe exchange programs in Indiana, which is limited only to the scope

of the outbreak (rather than outlining the more complex history of syringe exchange in Indiana that I briefly discuss in chapter four.) The document describes the situation is Scott County, the subsequent emergency needle exchange and the passage of SB 461, allowing for syringe exchanges in response to a public health emergency. The two goals of SEPs detailed in the policy document match up with the language in the law, placing the focus on reducing disease transmission, but there is some indication of a shift toward more sustained response as support for people who inject drugs:

- To provide a clean syringe for every injection instance in order to reduce disease transmission.
- To provide an entry point for substance abuse and treatment and other resources.

The second bullet here helps to show how, in this initial policy guidance, specialists at ISDH were helping to widen the conversation about what services should be included in syringe exchange programs by framing syringe exchange as an entry point for other resources, including treatment. Chapman, in her interview, described this as removing barriers to recovery. She says, "my job as a public health professional is to try and keep them as healthy as possible...so that when they are ready for treatment they have one less barrier to recovery from their substance use disorder." These subtle cues in the first policy guidance document show how Chapman, as a state employee with expertise, and a commitment to harm reduction best practices must move between "public health emergency" and "harm reduction" as organizing metaphors. I will return to this moving between ontological frames later in the chapter.

The policy guidance, like the law highlights that "there are no federal or state funds available to support the development, implementation, or evaluation of syringe access programs." However, the document also includes a list of resources for information and possible funding. The

health department would provide "technical assistance" for counties considering SEPs, including statistics and county epidemiology profiles to help counties determine their risk factors for, or the presence of, a public health emergency. For example, Hewett mentioned in our interview that because testing for viral hepatitis (HCV) was uncommon before treatment for the virus was available, and testing has increased now that there is possible treatment, most counties can show increased numbers of HCV, and the risk of further HCV infection—one of the statistical hurdles necessary for a county to declare a public emergency. The guidance document also includes a list of national organizations, including NASEN and the HRC who could help counties understand policies and gain access to syringe buying programs. The inclusion of these national organizations that operate with harm reduction as their organizing metaphor demonstrates again how counties operating syringe services programs must operate in cooperation organizations where the material response substance abuse disorder is different than the one framed by the new syringe exchange law.

Other significant elements of the initial policy guidance document include a checklist to help counties begin their application process and meet the requirements of the law, and a chart with "menu options" related to administering SEPs. The focus of this menu is language and vocabulary related to the primary purposes of SEPs as detailed in the state law, including methods for registering participants, possible points of access (e.g. the health department, a mobile exchange, an offsite location, or a partnering pharmacy), and possible transaction and delivery methods. For example, the document explains the difference between a "one-for-one" exchange program where participants could only get clean needles for each used needle they return, and a "one for one plus" model where the number of syringes given to a participant are based on a discussion about their use, and syringes are given based on need, rather than a one to one exchange.

As the first sanctioned syringe exchange program in Indiana, much emphasis was placed on the exchange rate--needles returned/needles given-- in weekly press releases issued by ISDH during the initial response to the outbreak, and exchange rates continue to be a difficult part of the conversation when counties launch syringe exchange programs. This is a consequence of understanding syringe exchange as enabling drug use or enabling criminal behavior, rather than an effective harm reduction response. This also highlights the syringe itself as boundary object that shows up differently for different stakeholders, as I discuss in chapter four.

5.3 Harm reduction as organizing metaphor for community outreach

My interview with Abert was instrumental in helping me to map how different metaphors organize work in response to crisis. One important data story that emerged from my interviews was the differences between how syringe exchange emerged in Scott County and Monroe County. My early textual analysis led me to see the Scott County outbreak as the inception point for syringe exchange in Indiana. However, my interview with Abert revealed very different circumstances and timelines for syringe exchange in Monroe County, while also tapping into the larger history of harm reduction activism in Indiana that I discuss at the end of chapter four. Both the Scott County timeline and the Monroe County timeline are important for understanding both how syringe exchange emerged as a response in Indiana, and how the metaphors that organize work in response to crisis are important to tracing sensitizing metaphors as boundary objects that both organize work and allow for cooperation without consensus.

I was surprised to learn, through participant interviews, that the emerging pathway for syringe exchange in Monroe County did not begin as a consequence of SB 461 adding a mechanism for syringe exchange programs as an institutional response to a public health emergency. The crisis event in Monroe County, as I learned from my interview with Abert, was

the death of Ian Stark in December, 2013 (Crawford, 2013), Stark was a homeless person who froze to death in the stairwell of a Bloomington apartment complex. Community activists already organizing in response to perceived harassment of homeless people by Bloomington law enforcement were galvanized by Stark's death. In Abert's words, the IRA began as a volunteer outreach project in Bloomington, "This kid froze and we were like, screw it, we're just going to get some bikes and bike trailers and get people to donate blankets and jackets to us, and go out make sure that people don't freeze to death. And we'll make relationships with people." The group modeled themselves after the Emma Goldman Youth and Homeless Outreach Project (EGYHOP) in Olympia, Washington. EGYHOP is an all-volunteer organization that does "community outreach by offering emergency supplies and services to the homeless in the Olympia community, especially during hours when people cannot access traditional, more institutional services" ("about us" 2019). The Bloomington outreach group began to understand how the opioid epidemic impacted the larger problem of homelessness. As Abert explained, "It didn't make sense to try and protect people from freezing to death without also trying to protect them from disease transmission and overdose." The group had no experience with syringe exchange, and initially intended to buy syringes from a pharmacy. Given laws related to syringe possession and distribution in Indiana, this was not possible. Syringe possession for IV-drug use is a felony in Indiana, and both volunteers and people who inject drugs could be subject to arrest. Syringes aren't available from pharmacies without a prescription. Abert reached out to organizations providing harm reduction services in other cities, including The Harm Reduction Institute of Indianapolis, run for decades as an underground syringe exchange program by the late Larry Pasco, and the Chicago Recovery Alliance, another syringe services program founded in 1996 by community organizer Dan Bigg. (Haberle, 2015). Using information gathered from this network, Abert founded the Indiana

Recovery Alliance (IRA). As the IRA began distributing syringes to people who inject drugs in greater Bloomington, IRA activists used a common strategy of sharing data with a national research project in order to run an unsanctioned syringe services program more than a year before the Scott County outbreak was announced and SB 461 made sanctioned syringe exchange possible. This tactic, of submitting data to a research project, is one Abert mentioned in his interview. Syringe possession for drug use was illegal. Distributing needles as an unsanctioned needle exchange was also illegal, but distributing syringes for research purposes was a gray area within the law that allowed exchanges in Chicago and Indianapolis to work within their communities. This is another instance where understanding multiplicity and the realities created by informal infrastructures is important. Distributing syringes is illegal, collecting data for research and recruiting study participants is not. Activists who were making space for harm reduction practices despite the law used these layers of complexity to do work in the community despite institutional and political obstacles. Abert mentioned Don de Jarlais, a researcher at New York University, as a partner for collecting study data, though it is unclear from my interviews how formal this research partnership was. However, the IRA was also developing relationships with local public health researchers and healthcare providers in Bloomington. In our interview, Abert described his engagement with local stakeholders as IRA established themselves as an underground syringe exchange:

> We were giving out syringes and Naloxone and we started meeting with IU Health and Positive Link which is the local HIV care coordinator and some other stakeholders to talk about being above ground...and we would just start laughing because that was never gonna happen, particularly under the Pence Administration. Then three months later, four months later, Scott County happened.

The network of stakeholders that gathered to support syringe exchange in Bloomington prior to the Scott County outbreak is a much different assemblage than the one gathered by the Scott County Outbreak. In the following section I will map and discuss those differences.

Crisis event: Ian Stark's death

Indiana Recovery Alliance (IRA), a community-based organization whose organizing motivation was not only disease prevention, but response to the material needs of people who inject drugs in Bloomington, gathered a more complex and diverse network of stakeholders from its inception. Infrastructure for the IRA was more distributed. The group tapped into institutional knowledge by building relationships with researchers, health service providers, and mental health programs in Bloomington, while also building relationships and gathering knowledge and methods from other activist networks for procuring syringes and distributing syringes. The principles of harm reduction, including a commitment to positive change in all its forms—determined not by prescribed institutional standards of prevention and abstinence, but by those who themselves are experiencing the effects of chaotic drug use—set a much wider framework for what counts as success, and whose experience is central to recovery. This is an important point of reference for how we, as technical communication researchers can contribute to community response to complex problems. Whose data or experience is counted as evidence of success, and whose knowledge is sanctioned as part of decision making is key to building research. As Barad suggests, attention to what our research apparatus makes visible is necessary and researchers must consider how our instruments amplify and support the efforts of practitioners engaged in every day response through community outreach.

Like the map of the Scott County outbreak discussed earlier in this chapter, the map below represents the timeline for the emerging syringe exchange in Monroe County. As in Figure 1,

stakeholder groups are represented by color. The Blue sections of the map show community members gathered by Ian Stark's death and the formation of Indiana recovery alliance as community outreach organization. Red sections represent the involvement of national organizations and local research partners that engage in harm reduction research or provide tools and strategies for harm reduction services. The green sections of the map represent government institutions. The most significant change on this map, especially for considering the role of research in responding to complex problems is the difference between institutional structures that supported the IRA as a grassroots community outreach organization. Governmental infrastructure doesn't show up in this assemblage map until Aaron's Law is passed in April of 2015. And partnerships between the IRA and the Monroe County health department cannot form until after the passage of SB 461 in June of 2015. Also significant to this map is the ongoing partnership formed between the IRA and the Monroe county health department. This partnership brings together the two ontological worlds I have identified in this study.

The Emergence of Syringe Exchange in Monroe County

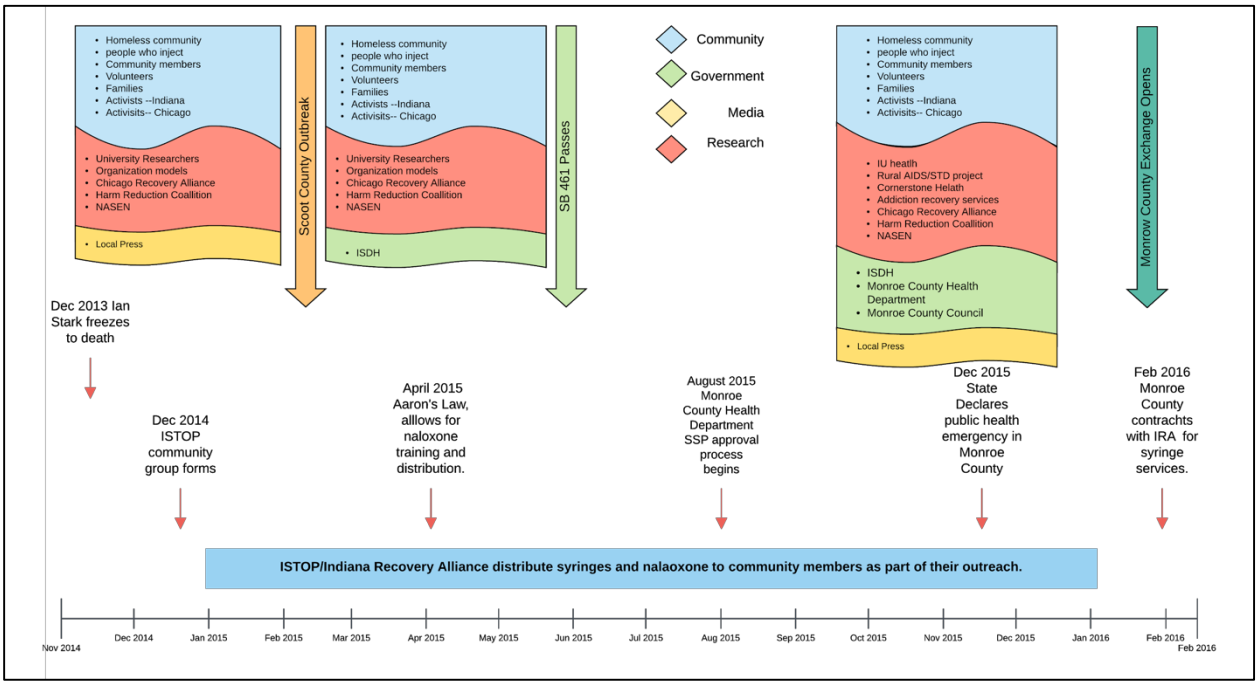

Figure 2 Shows how stakeholders gathered in response to Ian Stark's death in Monroe County, and how that event coordinates with a timeline for syringe exchange emerging in Monroe County.

Two stories from my interview with Abert help to further illustrate this point. Because of my initial text analysis, and my perspective as a technical communication researcher, I began my interviews intent on tracing how "building a model for response" was the organizing metaphor for supporting and growing syringe exchange programs in Indiana. When I asked Abert about how IRA had served as a model, or what models they drew on when deciding how to set up the Monroe County exchange, he talked about how the most overlooked resources in developing a successful syringe services program are those participants who the program is designed to serve.

> I think people miss that all the time. They'll call us, they'll call other organizations, they'll be like, how many do we give out? We're like, ask the people how many they want. How much do we put in this? Ask them how many they need in this. Should we do this? What

> if they're doing that? Well, ask them. It's like this infinite ... It feels very paternalistic the way people who use drugs are treated. Like they couldn't possibly be an expert in their own lives and be able to articulate what they need.

The inclusion of participant knowledge, and the expertise of those with lived experience is central to how the Indiana Recovery Alliance has built their response model, and to understanding how the infrastructure they built has influenced the trajectory of harm reduction services, not only in Monroe County, but in the larger framework of support for syringe services programs in Indiana. Abert talked about the tendency for communities to do syringe services or addiction recovery work without gathering input from, or building community with people those programs are designed to serve. "There are lots of service programs that don't involve participants at all. In fact, the vast majority of them, but the largest ones do. I always think that's interesting. Seattle, Chicago, us, and you'll see that again and again." While I made a conscious choice in this study to focus on practitioners rather than people who inject drugs, the local knowledge and lived experience of participants who use syringe services programs is central to how I frame collaborative work moving forward, not only because participants have knowledge to contribute, but because inclusive research practices can help to build community and support destigmatization and successful growth of syringe services programs like the IRA. Organizations like the Harm Reduction Coalition (HRC) have a long history of research and knowledge sharing practices that center the experience of people who use drugs for example, they publish *Harm Reduction Communication,* a journal that "aims to amplify voices that have traditionally been marginalized or left out" (Winklestien, 2011, p.2). In *Harm Reduction Communication,* researchers working directly with syringe services and outreach programs share insights gathered from working in community to do research that responds to local needs.

When the IRA can't gather enough information from the community, their next most reliable resources are other drug-user focused service programs, like the Chicago Recovery Alliance, or national organizations like the HRC which is, as much as possible, administered by people with lived experience related to drug use. One problem, Abert noted, with respect to researchers or volunteers interested in partnering with the exchange is the assumptions they make about the value of local knowledge sourced from other drug users. He showed me several informational pamphlets they regularly share with participants that detail, for example, safer injection practices and wound care. He described a counselor who came in offering to volunteer and to help design materials. Abert gave them a copy of this safer drug use pamphlet to help them learn about participants. The counselor took the pamphlet home, read it and when they came back, the first thing they did was question a reference to Vishnu made in the pamphlet, effectively saying that drug users wouldn't know who Vishnu was, so it wasn't right for the audience. Abert used this as an example of the kind of "parachute in" expertise that is often described as a problem of community engagement or service learning work. (e.g. Cushman, 2002). He said, " I want to help. Here's how you're doing it wrong already before you've even stepped in and talked to any participants, assuming that we wrote that, the participants wouldn't be smart enough to know who Vishnu is." My interview with Abert highlighted an important element of social justice oriented and participatory research already noted by many scholars, and reinforced by feminist and new materialist methods: taking seriously the expertise of those often most marginalized by institutional models, both for addressing complex problems, and for conducting community oriented research.

Another version of this problem, of understanding and including people who use drugs lived experience in research models, was featured in the 2011 issue of *Harm Reduction*

Communication. A sociologist at DePaul university who has served as the research coordinator for the Chicago Recovery Alliance since 2001, described a longitudinal ethnographic study of drug injection in the Chicago area that included hundreds of video-recorded injections and twelve years of ethnographic research (Scott, 2011). Scott's article focused on the problem of safer injection procedures and the extent to which people who inject take up this knowledge and incorporate it into their injection practices. One of his major conclusions was the problem of teaching safer injection practices from the standpoint of "gloom and doom risk," meaning that safer injection education was geared toward teaching a linear process of clean injection practices in order to reduce the likelihood of disease prevention. Scott described how a conversation with someone who injects drugs at a session for teaching safer injection technique caused him to reframe an important lesson about shallower injection technique in a way that was useful to a community who already understands that using drugs is a health risk, and safe injection procedures even when understood are often not implemented. He reframed the value of shallower injection that does not puncture both sides of a vein in terms of "leaky veins," meaning a vein punctured twice with a too deep injection will "leak" the drug rather than delivering all of the prepared drug into the bloodstream. Scott quoted the participant as saying "You actually taught me something, Doc...We need useful information. Enough of the scare tactics. I mean you're still telling me about bad health and shit, but this is different because it's, like dope fiend useful" (p.8). The conclusion of Scott's article was that harm reduction practitioners need to rethink their frames for teaching and helping people who inject drugs incorporate safer injection practices into their routines. What information is useful to the user, and how to frame needed information so that users are most likely to incorporate best practices into their workflows, is at the heart of technical communication research focused on user-centered design and user experience. This story, for me shows the potential for partnership with

researchers in other fields who are already deeply engaged in harm reduction in their communities because this story makes visible how technical communication and public rhetoric expertise can help to amplify and support work that builds community. This story also challenges institutional norms for what counts as evidence and what counts as research because we tend to imagine response to the opioid epidemic as moralistic, focused on abstinence and crime prevention, rather than on the incremental positive change that drives harm reduction as community-centered outreach work.

5.4 Practitioners work across shifting metaphors

The syringe services program in Monroe County is a useful example for understanding how practitioners work across the ontological worlds that form through different sensitizing metaphors. Both the infrastructure developed through "harm reduction" and through "public health emergency" were needed before the Monroe County health department and the IRA could work together to form the current iteration of the syringe services program. Despite the tensions that persist between "public health emergency" as the metaphor that underpins the state policy response to IV-drug use in Indiana and the best practices for harm reduction, the Monroe County program is the largest in Indiana. How this partnership was established, and how its success shapes emerging policy response in Indiana is my focus for the remainder of this chapter.

By the time the Monroe County Health Department started building its application for a syringe services program in August of 2015, the IRA had been distributing Naloxone and syringes and referring people in the community to other services for more than a year. As demonstrated in the previous section, their work helped to develop a network of community participants, activists, researchers, and national organizations who support and promote harm reduction strategies. While the Monroe County Health Department had to operate within the institutional boundaries

established by the passage of SB 461, the public health practitioners at the Monroe County Health Department demonstrated a commitment to community involvement and understood the importance of the infrastructure already being developed by the IRA. Abert talked in his interview about how once it was legal to do so, the county health department reached out to their organization for information and partnership.

My interview with Hewett at the Monroe county health department further illuminated how the community outreach orientation that the IRA adopted from other syringe services programs like the Chicago Recovery Alliance influenced the formation of the county syringe services program sanctioned by SB 461. Hewett explained, "what we did is basically a call-out for all the organizations that were interested and wanted to talk about doing this, so [we] had the city, the hospital, large mental health groups like Centerstone, the Miller Health group, different treatment facilities, and different social service organizations." The Monroe County health department used infrastructure established through the "public health emergency" metaphor, by drawing on ISDH resources. For example, Hewett described the technical county profiles that ISDH developed to help counties review their infectious disease numbers and develop an application that could effectively make a case for declaring a public health emergency in Monroe County, and therefore getting the greenlight for an exchange. At the same time, input by other stakeholders in the community informed the development of their program. One notable element of the Monroe County plan is a syringe advisory council, made up of county and state health department administrators, representatives from the Bloomington city and Monroe County councils as well as representatives from mental health and treatment organization and researchers from RCAP. The syringe advisory council meets quarterly to discuss the issues and ongoing decision making related to harm reduction services in Monroe County.

The two timelines, mapping when stakeholders engaged with the emerging syringe exchanges in Scott County and Monroe County, help illustrate how sensitizing metaphors organize work, and how the different metaphors allowed for different kinds of cooperation across distributed networks. My goal in representing these two different timelines is not to privilege one over the other or set up a dichotomy of "good" infrastructure or "good" sensitizing metaphors. Instead, I am thinking about how new materialist methodology, focused on multiplicity and how attention to the assemblages that gather and support work in multiple ontological frames can help technical communicators develop research methods attuned to the complexity of response. Such methods can allow for new ways of seeing and listening, as Chapman highlighted, and can helps us to get at opportunities for participation, intervention that amplifies and sustains the ontological phenomena unfolding in the day-to-day operational and rhetorical decision making that supports harm reduction response. Attention to the differences in these timelines is useful for considering the circulatory nature of technical communication, and how different ways of doing work, based on what is most important and most readily at hand for practitioners can help to identify potential points for further collaboration and response where the expertise of technical communication researchers can support and amplify the successful response already unfolding. The table below summarizes how the different crisis events I identified in each county led to different emergent metaphors for organizing work.

Table 6 Shows how different crisis events resulted in different response, and different sensitizing metaphors that organized work

Scott County	**Monroe County**
● Crisis event: HIV outbreak ● Response is driven by the institution (Health Department) ● Sensitizing metaphor: **Public health emergency, disease prevention**	● Crisis event: Ian Stark's death ● Response is driven by the community (IRA) ● Sensitizing metaphors: **Community outreach, harm reduction**

The way that these metaphors circulate among stakeholders in order to build infrastructure is evident in some of the recent developments in syringe services in Indiana. One of the most important shifts is a new emphasis on harm reduction at the state level. In 2017, ISDH formed a harm reduction program at the state level. Chapman became the Harm reduction program manager, and the state issued new policy guidance. Of course, Chapman was aware of harm reduction philosophy and best practices long before the Scott County Outbreak occurred, but after two years of helping counties to launch syringe exchanges, educating partners about best practices, and the early success of the Monroe County exchange, ISDH has been able to foreground harm reduction as best practices that center health outcomes, destigmatization, and wrap-around support rather than focusing solely on disease prevention and containment. The policy guidance issued in 2017 does more to highlight how the goals of better health outcomes, including disease prevention, require a harm reduction strategy where syringe exchange is only one aspect of the response. This is a significant shift from the policy guidance document issued in 2015. The 2017 document also shows how despite the limitations of the law, which is still focused on responding to a public health emergency, the metaphors of community outreach and harm reduction guiding work for the Monroe County syringe services program circulate and contribute to the infrastructure of harm reduction throughout the state.

Some changes in the policy show a general shift in understanding about harm reduction, and how education by Chapman and others doing harm reduction work have created space for new mechanisms for response. For example, the title of the 2017 guidance document is the "Syringe Services & Harm Reduction Program Manual for Local Health Departments." This title alone shows a significant shift from the 2015 version of the document where syringe exchange was the focus. In the 2017 document syringe services and harm reduction signal attention to health

outcomes beyond disease prevention for people who inject. Chapman's welcome at the beginning of the document further demonstrates the shift in tone, away from emergency response and toward a harm reduction orientation that more fully serves and includes the community:

> Thank you for taking this opportunity to learn more about harm reduction and syringe service program options available to your community. As we have seen demonstrated in Indiana and beyond, syringe service programs are a critical entrance point for engaging people living with the disease of addiction with health, mental health and substance abuse treatment, and other services to support their recovery while preventing HIV, HBV, HCV, and reducing the incidence of bacterial infections.

Reducing infection and preventing disease are still an important part of the goals of syringe services programs, but Chapman's welcome focuses first on harm reduction and how syringe services programs work as an entry point for recovery. This is a significantly different tone than previous versions of the guidance document.

Comparing the introductory paragraphs of the 2015 and 2017 documents further demonstrates the shift to harm reduction as the metaphor that organizes work in response to addiction and recovery.

Table 7 Shows a side by side comparison of the introductory paragraphs from two versions of policy guidance issued by the ISDH.

2015 (1.0) Guidance Document	2017 (3.0) Guidance Document
Syringe exchange programs (SEP), also known as syringe access (SAP) or needle exchange (NEP) programs are a harm reduction intervention that has been in existence since the late 1980s and has been scientifically proven to reduce transmission of HIV, hepatitis B and C, and other blood-borne pathogens in people who inject (PWI). The primary objectives of SEPs are to: ● Provide a clean syringe for each injection instance to: Reduce the potential for transmission of HIV, hepatitis B and C, and other blood-borne pathogens. ● Provide an entry point for substance abuse treatment and care and other resources as appropriate to the individual.	Harm reduction is a public health principle designed to decrease the harm associated with human behaviors. Harm reduction can prevent illness or injury that may occur as a result of doing dangerous things. Some examples of harm reduction include wearing a seatbelt while driving, condom use during sexual activity, and syringe service programs that provide clean syringes and other materials to people who inject drugs. The Indiana State Department of Health (ISDH) directly and indirectly supports harm reduction programs across many different program areas as a way to support the health and wellbeing of all Indiana residents.

Notably, in the 2017 iteration of the policy guidance document, the initial purpose of the document is to expand understanding of harm reduction as a way to "support the health and wellbeing of Indiana residents." While syringe services programs are still mentioned as one harm reduction method, the emphasis on one-to one exchange, and "clean needles" to reduce disease transmission has dropped out of the introductory language entirely.

The guidance document shows several other important changes that signal a shift in how the state is responding to IV-drug use, and building infrastructure for harm reduction. The document outlines how counties can establish harm reduction programs without providing a

syringe exchange. This allows counties to consider how they might implement harm reduction practices like naloxone training, treatment referrals, testing, and harm reduction supplies that don't include syringe exchange.

1. The document announces funding available from the state to support harm reduction programs at the county level. While state and federal funding cannot be used to purchase syringes, counties may apply for grants to fund other aspects of their harm reduction strategies. (For example, in Monroe County this funding was used to hire a harm reduction health educator at Monroe County health department to assist the IRA with data entry, outreach, testing, and grant writing.)
2. In offering guidance for setting up a syringe services program, ISDH recommends the inclusion of an advisory committee: "Local health officials and program planners should engage local stakeholders to assisting with planning, implementing, and evaluating the program. These stakeholders should include but are not limited to law enforcement, first responders, substance abuse prevention entities, substance abuse recovery groups, potential referral partners, formal and grassroots community action groups, and interested citizens."

This recommendation for including an advisory council as part of development for a harm reduction program shows how the community outreach methods described by Hewett for forming the Monroe Count program are circulated and republished such that they become part of the available infrastructure for other counties continuing their own programs. This change in the policy document shows how movement between different ontological frames for responding to the opioid epidemic is embedded in the ongoing response to the opioid epidemic in Indiana.

The guidance document also includes a full copy of the revised law, SB 1438 which allows counties to make their own determination about syringe services programs without the approval of the state health commissioner. Each part of the law is explained in plain language, demonstrating the steps county health departments need to follow, and what they need to do to be in compliance with the law. The 2017 iteration of the guidance document has expanded from the initial 11 pages to 49 pages. The last 24 pages of the document are templates for organizing and documenting syringe services programs that are in compliance with the law. The need to balance compliance with state law and access to education and tools for harm reduction best practices guides Chapman's role as the harm reduction program manager. She is currently working with county representatives across the state to develop a more effective and efficient database for reporting information to the state and is working to incorporate both methods for reporting syringe exchange, testing, and Naloxone distribution data to keep counties in compliance with the law, while also better documenting referrals to treatment and other less tangible aspects of community outreach that help to improve health outcomes and overall wellbeing for people who inject. Research methods that can account for the more intangible successes of syringe services programs was a theme in all of my participant interviews. Looking for recurring themes like this across my interviews helped me to map institutions, organizations and practitioner positions such that I could account for movement between ontological frames and begin to establish how current concerns and questions are made visible as part of the assemblage of response. In the last section of this chapter I will illustrate that movement and frame how such mapping could serve as a starting place for collaborative research that supports harm reduction response.

5.5 Mapping distributed networks for response

The distributed network of partnership, education, and capacity building evident in the revised policy guidance from ISDH is also evident in how Monroe County and the IRA are supporting increased harm reduction education and access across the state. The Monroe County government hosts an annual symposium, "The South Central Opioid Summit" which brings together stakeholders from across Indiana, including city and county government, public health researchers and practitioners from IU, social services and treatment professionals from local and national mental health, HIV treatment, and addiction recovery services, first responders, law enforcement, and, importantly community members, volunteers, and activists who have experienced or are experiencing substance use disorder. I attended the second annual summit in September of 2018 with the goal of listening to the conversations, questions, and exigencies practitioners and partners at the summit were addressing. Overall, my time at the conference helped to clarify for me many opportunities for engagement and participation for technical communication researchers interested in collaborating with others to respond to complex problems. Three particular areas of focus raised by my interview participants as immediate needs were echoed in the sessions I attended at the summit:

1. **Better methods for demonstrating or articulating success of harm reduction programs:** All three of my interview participants talked about the difficulties of making visible, and documenting through data collection the more intangible elements of syringe services programs grounded in harm reduction. Abert talked about the burdens of increased documentation and the complications of current data collection methods when participants must both be registered for syringe exchange and anonymous in the database. Chapman and Hewett both described the problems of representing "the absence of

something" as a success. For example, how do you represent someone not getting a disease as a successful outcome of syringe services programs. Chapman further described the difficulty of accounting for the individual experiences and successes of participants, like someone tapering use and preparing to enter recovery while also protecting the privacy of participants.

2. **Decriminalization of syringe possession in Indiana:** All five of my interview participants mentioned the problem of felony convictions for syringe possession as a significant barrier to harm reduction. Both in my interviews, and in my observations at the South Central Opioid Summit, decriminalization of syringe possession in Indiana was framed as an immediate priority. Abert described best the complex network of problems exacerbated by felony convictions for syringe possession. One of the most visible public objections to syringe exchange is that syringe exchanges will result in more "dirty" needles being disposed of improperly, and the risk of exposure, for community members, law enforcement, and first responders to accidental needle sticks. However, everyone I interviewed, and the professionals speaking about this problem at the summit described fear of felony conviction as leading reason that people who inject drugs dispose of needles improperly. According to my interview subjects, one reason people who inject drugs don't hold on to a syringe long enough to dispose of it properly is because of the threat of felony conviction. Felony conviction for syringe possession is also a barrier to inclusive research. At the opioid summit, Dr. Carrie Lawrence from RCAP described the difficulty of hiring former IV-drug users as part of a university research team because of previous felony convictions.

3. **Engaging those who experience substance abuse disorder as partner**s: As I described earlier in this chapter, engaging people who inject drugs as partners with local knowledge is central to ethical research practices. At the same time user experience is central to how we understand effective and inclusive technical communication research that takes seriously social justice and a need to redress imbedded inequalities in our research design. At the opioid summit this was characterized by a call for a "nothing about us without us" framework when developing research, response, and policy initiatives.

Each of these exigencies are deeply entangled, meaning addressing one concrete problem—such as felony convictions for syringe possession in Indiana—requires rhetorical work to educate both the public and institutional stakeholders on the principles of harm reduction and the value of destigmatizing substance use disorder and addiction recovery as well as demonstrating the efficacy of harm reduction strategies for removing barriers to treatment, and reducing the instances of infectious disease and overdose in our communities. In order to get at some of the possible entrance points for collaboration and response where technical communication researchers could make substantive contributions I adapted Angeli's (2018) model for assemblage mapping to trace relationships between stakeholders, exigencies, and the metaphors that organize work. (See chapter two for a detailed explanation of how I adapted Angeli's model.) In the map below I situate "public health emergency" and "harm reduction" as sensitizing metaphors that have largely stabilized and continue to organize work in response to the opioid epidemic in Indiana.

Assemblage mapping to identify possible collaboration

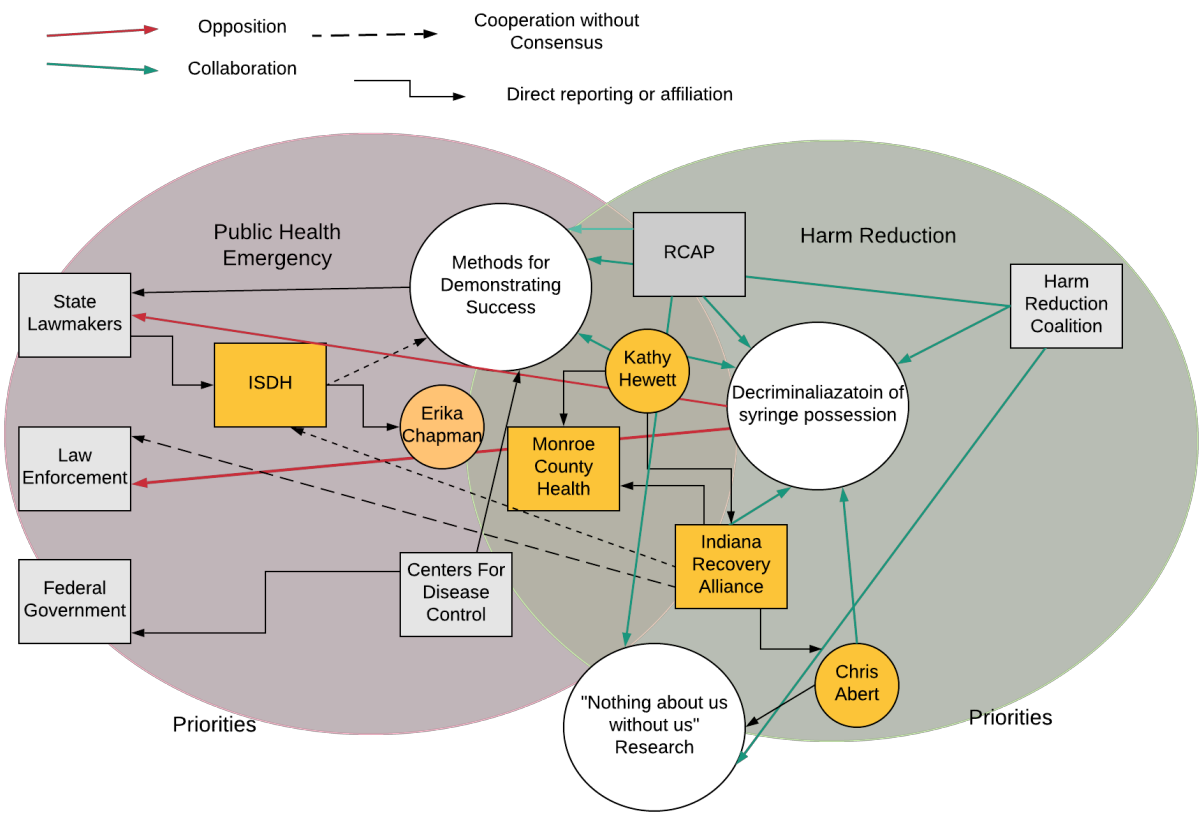

Figure 3 Shows an assemblage map using sensitizing metaphors to show relationships between stakeholders and the potential movement of emerging priorities as boundary objects where collaboration and response could support emerging infrastructure.

The goal of the map above is to show how different stakeholders are positioned in relationship to these metaphors, their networks for cooperation and collaboration, and their orientation to emerging issues around which current response and further research might focus. The Venn diagram that underpins this map shows the overlap between the ontological worlds represented by the sensitizing metaphors I have highlighted in this chapter. The extent to which this overlap has shifted over time is difficult to represent in a static map, but that movement is central to the possibilities for ongoing research partnerships. The organizations and individual practitioners I engaged with for this case study are marked in yellow, while other institutions and

organizations closely related are represented in gray. The three current exigences I illustrate in this chapter are represented with white circles. I used arrows to illustrate movement between the different metaphors, and made distinctions between kinds of movement. Arrows with dotted lines represent cooperation without consensus described by Star as a necessary component of boundary objects. If we consider syringe exchanges themselves as an assemblage that acts as a boundary object, this map shows how some organizations navigate between "public health emergency" and "harm reduction" as ontological frameworks for whom the reality of syringe exchange exists differently. For example, limitations inherent in the "public health emergency" conception of syringe exchange highlight the barriers to collaboration for the Indiana Recovery Alliance and ISDH or law enforcement, however because of the passage of SB 461 syringe exchange as an assemblage of agreements, processes, technologies and infrastructure serve as a boundary object for cooperation even as these institutions operate from different ontological frames.

Decriminalization of syringes, as an emergent issue relevant to all stakeholders is a more viable and real solution to those who understand syringe exchange from the reality of harm reduction, though state lawmakers and law enforcement who understand syringe exchange as a reality of responding to a public health emergency are most opposed to decriminalization as a practical response that will address issues related to both public health and the well-being of people who inject drugs. I used red arrows to represent this opposition. This opposition isn't intended to be a permanent barrier to cooperation, but it does highlight places where negotiation between stakeholders is most difficult, and where the shifting reality of responding to the opioid epidemic requires new boundary object formation. For example, The IRA has worked with other stakeholders, where there is more collaboration (represented on the map by green arrows) around this issue to draft two pieces of targeted legislation currently under consideration in the 2019

legislative session. One bill would further define a good Samaritan law to grant immunity to people who alert first responders to a person needing medical attention as a result of drug use. The second piece of legislation, titled the First Responder Safety Act is a targeted syringe decriminalization bill that would allow people who inject drugs to alert law enforcement officers and first responders to their syringe possession prior to a search without fear of prosecution for possessing the syringe. The incremental nature of this law, and its focus on safety for law enforcement and first responders shows how the negotiation between harm reduction and public health emergency as organizing metaphors continues in response to these problems.

I see assemblage mapping, like the example above, as an effective way to highlight areas for possible collaboration, where even though stakeholders are operating from or negotiating across a multiplicity of realities, sites for collaborative work emerge. Hewett serves as a clear example of someone working across these differences. As a public health practitioner, and the supervisor of the syringe exchange in Monroe county she must navigate multiple conceptions of syringe exchange, and manage a network of distributed partnerships in order to move work forward. In our interview she framed decriminalization of syringe possession as one of the most important issues currently impeding the public health response to the opioid epidemic she says, "I regularly mention it everywhere I go." The stakeholders currently engaged in operational response don't need this assemblage map to form collaborations and partnerships. The opioid summit held annually in Monroe County and the current legislation that these groups have drafted is evidence of that. However attention to the infrastructure and networks for collaboration that develop in the day-to day response to complex problems can help to reveal sites for collaboration, common questions, or operational objectives that need attention. Technical communication researchers are uniquely positioned to contribute this kind of analysis to ongoing response. For this study, the

assemblage map developed here is the culmination of my research and analysis. For the long term, as an element of a sustained community partnership, such a map would serve as an entry point for further collaboration. No doubt the practitioners I interviewed would see additions or edits to this map, and spending some time thinking together about its implications could reveal clearer strategies, research questions, and tactics for intervention while also creating a snapshot that temporarily reveals and stabilizes infrastructure in flux that allows assembled stakeholders to question that infrastructure and consider ongoing opportunities for intervention.

6. REFLECTION IN ACTION

6.1 Next Steps and Ongoing Questions

In this final chapter, I look ahead to my next steps as I conclude this case study of Indiana health care professionals and turn toward my ongoing research: working toward sustainable community partnerships where technical communication research can contribute to and amplify the work of those engaged in day-to-day response to complex problems. First, I discuss how I will share my work with interview participants and invite their feedback prior to publication. I then review my research questions and my plans for ongoing investigation, and then briefly discuss my plans for research as I conclude this case study.

6.2 Concluding the case study: Member checks and further interviews

As I described in chapter two, continuing a dialogue with my interview participants about how they are represented in this study, and listening carefully to their feedback about my conclusions, is important to my approach to ethical research. While most of my participants were outspoken individuals ready to share their work with me, I want to ensure my representation of their work will not cause them difficulty. At the same time, feedback from interview participants will help me come to more accurate conclusions and better realize the full value of the methods for tracing sensitizing metaphors which, on the one hand, were very productive, but which, on the other hand, generated results which my participants' responses put under serious pressure. How I might continue working with the participants I interviewed for this study is an open question that we will answer together. While I will not be in Indiana, and won't be able to be directly involved with the development of harm reduction strategies in Indiana, if any of my interview participants are interested in further collaboration, there is space for continued discussion and the kind of

dialogue I originally envisioned for this study. . Obviously, the issues my case study engaged are not unique to Indiana, so I expect that further discussion with practitioners about assemblage mapping as a method for determining points of collaboration would be beneficial. The practitioners who supported my work here could no doubt offer further insights and revisions to my case study analysis, just as they did in their initial interviews, as well as educating the more generalized methods I will develop as I move forward. I will offer participants the opportunity to determine their level of future participation as I develop published articles from this study over the next few years.

As I conclude drafting this dissertation, I will compose and deliver each participant a member check memo, requesting a response and inviting further engagement prior to the publication of my dissertation or any articles related to this study. Memos will include four elements customized for each participant: (1) A short summary of the analysis, including both sensitizing metaphors and assemblage mapping as useful tools for mapping possible points of collaboration; (2) A summary of interview material included in my dissertation, including references so participants can easily find passages where their ideas are discussed; (3) An assessment of potential risks considering my participants are fully identified in the study; and (4) An invitation for follow up interviews or discussion as well as potential collaboration for future publication. I will invite each participant to discuss their memo with me, revising my dissertation before deposit if needed, but more importantly shaping my future work. A sample member check memo is included here as Appendix C.

6.3 Ongoing questions for further research

The goal of this study was to explore methodological orientations for collaborative research that engages directly with communities to respond to material conditions. I wanted to understand

how technical communication between stakeholders circulated, and also learn more about how operational response to crises shifts public rhetoric and builds infrastructure to support action in the face of political and ideological opposition. Both my research questions and my tentative conclusions are heuristic in nature, focused on how I might work with practitioners to develop opportunities for collaborative response. As I move to a new institution in North Carolina, and consider either problems locally relevant there, such as the increased impacts of natural disasters due to climate change, or local iterations of response to the opioid epidemic through harm reduction, I will draw upon the results of this study to help me design research methods in collaboration with local partners. In the sections below, I briefly summarize the research questions I outlined in chapter two and collect the methodical and methodological questions I see as the principal outcomes of this study.

What methods help researchers understand the "tacking back and forth" movement of boundary objects?

As chapters four and five show, textual analysis and interviews can help researchers and partners identify the sensitizing metaphors that organize work. Operational decision making in response to crisis builds infrastructure that supports future work. However, in response to the immediate needs of a community, attention is rarely focused on that infrastructure and how it builds capacity for future response. By facilitating discussion and iterative mapping that reflects how metaphors organize work researchers can help to make visible the assemblages of people, policies, technologies, and agreements that different metaphors gather and support. Assemblage mapping, as I illustrated in chapter five, can serve as an effective method for making infrastructure visible such that we can identify points of movement or emergence where further action can amplify successes and collaboration can support capacity building for future work. I imagine

exploring further application and refinement of this technique through continued research with community partners, through collaboration with other scholars, both in technical communication, and in other fields where scholars respond to problems. I see potential for ongoing active research, and for developing these methods for teaching technical communication practitioners to better understand ethical practice and accountability, such that their work is inclusive and constructive.

How can we practice better?

Mol's concept of multiplicity describes how gathered stakeholders operate not only from different subject positions, but different ontological frames where shared objects, agreements, and technologies constitute different lived realities. Foregrounding these differences is essential to both assemblage mapping as I have framed it in this project and the inclusive research practices necessary for active research that aims for social justice. Attention to *whose* metaphors organize work and *whose* realities are taken into account as we intervene to build better infrastructures for response is the difficult, ongoing work central to moving this case study from a limited-scope methodological exercise to a sustainable project that engages community research in practice. For example, the assemblage maps I share in chapter five frame harm reduction from my perspective as a technical communication researcher interested in operational response, and take into account how public health practitioners responded to my questions and analysis. Absent from this discussion so far are other researchers already engaged in the question of how to best do harm reduction, such as social workers, anthropologists, political scientists, and public health care researchers. With the resources and influence of a faculty member, I also will be better equipped to engage law enforcement, lawmakers, and most importantly, the people who inject drugs and should benefit from the harm reduction strategies at the heart of the response I study here.

In further iterations of this project, I will be able to engage a more complex network of stakeholders, seeking to document the full breadth of response to a particular complex problem, and I will certainly design a research plan that includes these multiple voices. This is a place where understanding what is meant by collaboration is critical, and can be understood as one of the research questions to be explored. One ongoing question in this study is the difference between cooperation without consensus, which Star (2010) describes as a key component of the ways boundary objects work and how the movement of boundary objects leads to infrastructure. Flower (2008) also foregrounds the need for cooperation without consensus as necessary for sustainable public engagement work, though she uses different terminology than Star. Understanding stakeholder positions as multiple realities rather than different perspectives of the same reality can help us, as researchers, to value the need for cooperation without consensus, and at the same time, account for the circulatory nature of communication and the overlapping nature of multiple realities that rely on collaborative action. Mol (2003) describes this overlapping and shifting between ontological frames as an example of how patients, diagnosticians, and physicians work together in order to treat disease. In future work, I will be able to dedicate more attention to those overlaps, and more carefully investigate where researchers and practitioners can stabilize multiple ontological frames in order to practice better—to take better action that complements the work of practitioners and benefits the people those actions are designed to serve. The tension between cooperation and collaboration is evident in this study, and one place where continued research, in partnership with others, can lead to more specific heuristic questions and methods that can explicitly account for these tensions. My research interests in other areas, specifically how interdisciplinary teams collaborate and sustain the sites of research, intersects with the community engagement work I see as the next steps for this research project. I imagine future work that will

allow me to approach the study how researchers and practitioners alike engage cooperation, collaboration, and/or consensus, exploring the operation of these metaphors for interaction in depth.

How do we effectively engage with the capacities and trajectories of assemblages that emerge in response to crisis?

Understanding that assemblages emerge and take on trajectories with agentive capacity in response to crisis is one of the central reason I turned to new materialisms to develop the methodological framework for this research. At the same time, I recognize that further research and is needed to support the transformation of theoretical work about assemblages into viable practices. Seeing syringe exchange as a particular assemblage that emerged in Indiana in response to the opioid epidemic is a first step. My analysis illustrates how policy documents can show the trajectory of that assemblage as it develops through and across both statewide bureaucracies and local communities. Further analysis such as different kinds of assemblage mapping, collaborative coding of data with other scholars, and further discussion with research partners about the nature of assemblages will help me continue to develop my analysis.

I am particularly interested in recruiting other academics wrestling with these problems, engaging them as research participants who share the common goal of connecting academic and extra-academic conversations about complex problems. For example, public health researchers in Indiana (Meyerson, Lawrence, Gillespie, Raymond, Kelly, & Shannon, 2017) recently published a study of the twenty-four counties engaged in syringe exchange planning after the passage of SB 461 in Indiana. In their article they described the "emergence of health commons involving information and tangible resource sharing networks" (p. 973) as counties showed interest in and began planning for the possible implementation of syringe exchange programs. Their study

highlighted this emergence, but also identified the structural barriers to implementation that counties experienced as their plans for resource sharing (for example, counties sharing vehicles and resources for mobile exchange) were rejected by ISDH. Meyerson et al. described the networked sharing and planning among public health workers as "resource and epistemic commons" and briefly discussed how infrastructural and legislative barriers limited the efficacy of these emerging commons. There are clear parallels to draw between their study methods, including their focus on networks for both knowledge-sharing and resource sharing, and the new materialist framework I am working to develop. This is just one example of the potential opportunities for collaborative research, and highlights particular opportunities for technical communication researchers to contribute significantly to ongoing efforts to study the infrastructural and policy barriers they identified and develop practices to address them. Sustained attention which integrates analysis of their findings, their methods, and mine as well help all of us attune our methods to better respond to the needs of communities. Meyerson et al. describe how the ISDH required counties to "identify vertical system resources, even when such [systems] would duplicate services and costs" (p. 979). What's true of the operational barriers they identified is also true of siloed research initiatives. As I move forward, I will continue to seek opportunities to build relationships and make arguments for collaborative work where the skills and expertise of rhetoricians and technical communication researchers can add to the available means for response to problems—and where long-term collaborations can create feedback loops which offer benefits for all parties involved

What do we see and do when we understand our methods as ethical response with material affects?

As I discussed in both chapter two and chapter three of this project, the ethical approach which guides my research includes a commitment to technical communication scholarship that explicitly addresses and takes action to repair systemic inequalities. I see no other way to build collaborative frameworks for sustaining responses to complex problems. In chapter five, I briefly proposed a connection between ethnographic research done by Dr. Greg Scott, a sociologist who works directly with the Chicago Recovery Alliance, and user experience research in technical communication. I plan to explore how more time, attention and discussion with partners can help to clarify how the goals and methods of user experience research in technical communication can help to address the questions raised by ethnographic research in other contexts. In the conclusion to an article identifying problems with the current frames for teaching safer injection practices, Scott (2011) writes, "we have failed to be adequately innovative in how we learn about real world injections (even those of us who are former injectors) and about how [people who inject drugs] seemingly 'irrational' behavior is, in fact, perfectly rational" (p. 9). In her recent discussion of user experience research that creates space for less controlled encounters, Sullivan (2017) describes how controlled usability studies that focus on work have evolved as a mechanism of reducing error in user interfaces. She proposes user experience research that is *less* controlled, and *more* open to encounters with technology that users experience must accommodate outside of traditional work settings. The descriptive methods Sullivan describes as useful for cultivating this openness (e.g. story-telling, thick description, life logging, and conversation) are shared with ethnographic researchers across fields, and therefore can create a space for discussion about methods and negotiation about the research questions we could be attuned to if we listen and work together. As I move forward, my focus will be attention to research methods that facilitate encounters with the

multiplicity of others gathered by responses to crises, and allow for collaborative response that operationalizes our questions and build capacity for further response.

6.4 Beyond syringe exchange as a case study

While this project has focused on syringe exchange in Indiana as a case study, its central purpose was to clarify methodological frameworks and heuristic questions about how technical communicators can collaborate with others to engage complex problems. Because I knew from the beginning that my long term engagement with these questions would happen elsewhere, I've been careful about the scope of this project, and what I asked of participants who were unlikely to be long-term community partners. As I outlined earlier in this chapter, I will certainly complete this case study and publish some of my findings, but I do not yet know if syringe exchange will be the complex problem I continue to engage when I continue investigating my research questions as a junior faculty member at a new institution.

In chapter one, I argued that work of all kinds develops emergent practices in response to complex problems. To continue my research, I won't be asking, "What's next with my research about syringe exchange?" Rather, I'll ask: "How can I continue to learn how infrastructure is shaped by operational response and decision making? How can I collaborate with others to support emergent practices that build better communities?" This research orientation is rhetorically situated, and attuned to the communities I find myself in. As I relocate to Raleigh and begin work at NC State, I will be listening to my colleagues and looking in our communities for other areas where my expertise might be useful. The dynamics at play, both in terms of public rhetoric and technical communication, are by no means limited to the opioid epidemic. My interest with this project began with a *Huffington Post* article where a headline framed the possible response to a complex problem only in terms of political line drawing and blame: "Indiana Shut Down its Rural

Planned Parenthood Clinics and Got an HIV Epidemic ” (Bassett, 2015). Three years later, as I was preparing a writing sample to send to Raleigh, the *Huffington Post* repeated its singular framing, this time with a headline related to Hurricane Florence: “Six Years Ago, North Carolina Chose To Ignore Rising Sea Levels. This Week It Braces For Disaster” (Hatch, 2018). I see this repetition as more substantial than just the predictable teasing of click-bait: the insistence on clear lines of politically motivated cause and effect also points to the continued need for research that takes seriously the complexity of the problems we face, and the necessity of responses that avoid displacing complexity in favor of ideological commonplaces to embrace or disagree with. To frame this differently, regardless of our politics, personal ideologies, or intellectual in-groups, North Carolina first responders, civil engineers, educators, and planners are living and working in coastal communities where they must respond to the exigencies of climate change. Access to health care, affordable housing, post-secondary education, and, income inequality—these are all complex socio-technical problems that require interdisciplinary attention, and they are all problems where practitioners and community activists are already making decisions daily to mitigate the material effects of these problems on vulnerable, marginalized, under-resourced groups. As I make my home in a new community, my goal is to build relationships and listen carefully, looking for ways that I can best roll up my sleeves and get to work.

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APPENDIX A. ISDH PRESS RELEASES RELATED TO THE SCOTT COUNTY OUTBREAK

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May_2_2016_SCOTT_COUNTY_PUBLIC_HEALTH_EMERGENCY_DECLARATION_EXTENDED.pdf. (2015, May 2). Retrieved March 5, 2018, from http://www.in.gov/isdh/files/May_2_2016_SCOTT_COUNTY_PUBLIC_HEALTH_EMERGENCY_DECLARATION_EXTENDED.pdf

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APPENDIX B: INTERVIEW CONVERSATION GUIDE

Interviews with study participants will focus on their impressions, ideas, suggestions, and questions based on the textual analysis and mapping completed by McMullin in phase one of this study. Because this study is concerned mainly with identifying better methods for research and response to complex problems, the focus of these interviews will be on what practitioners and researchers from adjacent fields notice when they look at data and discussion generated by a technical communication approach to research. The interview participants in this study work with at-risk populations, and they work in contested spaces like needle exchanges where their daily work is often questioned and highly scrutinized. Unlike many public health-related studied, this study is not concerned with client or patient interactions. Questions will not involve specific clients, interactions, patient histories, individual client data, or the data related to the day to day operation of needle exchanges in Indiana.

Questions in this study will focus on how experts and practitioners in a variety of fields, with different orientations to research, to work, and to problem solving might develop better, more ethical, and more inclusive methods of collaborative response. This question guide will serve as a starting place for semi-structured discussion of the results of phase one of this study. Because phase one of the study is not yet completed, these questions may shift as the coding and mapping process proceeds. Any substantive changes to this interview guide will be submitted as an amendment before the interviews in phase two are conducted.

Introductions:

Interviews will begin with some ground rules designed to help participants feel comfortable and in control of what they share. Interviewer will share a brief background and reiterate their

intentions and purpose for interviews. Interviewer will share a brief background and answer any questions about their expertise, history, or research methods.

Interview participants will be asked about their interest in the study.

1. Why did they agree to participate?
2. What value do they see, if any in more collaborative research and response methods?
3. What benefits if any, do they imagine might come from this research
4. What are their expectations for participation, feedback and involvement in the discussion and conclusions of this study?

Research Methods:

Prior to the interview, participants will be given a brief summary of phase one research methods and results. Interviews will begin by asking participants about their overall impressions of the phase one study.

Questions might include:

1. What concerns do you have about this research model?
2. What seems useful to you?
3. What about the methods do you question?
4. How do you approach similar questions or problems when you have questions?
5. What gaps or errors do you notice?
6. What materials or sources would you add to better represent the complications of needle exchanges as public health response?

Discussion between researcher and participant will focus on methods for further investigation that might better represent this movement of information, and what kinds of questions and methods might allow for cooperation between the participant and a researcher, like McMullin, whose research orientation and methods are drawn from the field of technical communication.

If you have large tables or figures to include we ask that you use landscape pages and place the Appendix Title above the figure/table.

APPENDIX C: SAMPLE MEMBER CHECK MEMO

The following memo will be formatted on Purdue letterhead and sent, via email with an annotated copy of my dissertation:

Dear Chris,

As I wrap up my dissertation research, I wanted to have a conversation with you about the aims of my project, discuss how your interview informed my work, and describe what this project might look like as I move toward publication in the next year or two. In this letter, I'll remind you of my goals, share some of my initial findings, and describe how I represented our interview in my dissertation. I am interested in your feedback regarding both how I represented our conversations, and how, if you are interested,we might collaborate in the future to publish about the IRA and its evolution. Please review the notes below and the relevant sections of the dissertation file I have attached. You can email me to share any feedback or set up a time to talk via phone or video conference.

Research aims and outcomes:

Complex problems such as substance abuse disorder and harm reduction require a large network of stakeholders who work together across multiple levels including policy, research, and day-to-day operations. The central premises of my research are that 1) technical communication, meaning how information circulates between all of those stakeholders, helps to build infrastructure that supports mechanisms for response and 2) technical communication researchers can do a better job of leveraging their resources and expertise to support and amplify the important, on-the-ground work people are already doing to respond to immediate needs and develop sustainable programs centered on social justice.

My research suggested models for this in sociology (Dr. Gregory Scott at DePaul, working with the Chicago Recovery Alliance), public health (Dr. Carrie Lawrence and Dr. Beth Meyerson, and others working at RCAP) and medicine (Dr. Don Des Jarlais at NYU). Technical communication researchers are also making serious efforts to foreground community involvement and social justice as the purpose and aim of our research. With my dissertation, I am working to join those ongoing conversations and look for ways to collaborate with community partners to "do the work that needs doing," as you so clearly described in our interview.

One key finding of my research shows how the metaphors people use to describe their work help to build infrastructure and shift public conversations about addiction, recovery, and response to the opioid epidemic. For example, I highlight the difference in "public health emergency" and "harm reduction" as metaphors that organize syringe services, and how understanding differences in the infrastructure those metaphors build can help researchers and practitioners amplify and support the methods that best serve people who use drugs.

References to our interview for your review:

From our interview, I learned an entirely different narrative detailing how syringe exchange emerged in Monroe County, particularly how community outreach and activism allowed the IRA to build a network for harm reduction in Bloomington more than a year before the Scott County outbreak and the passage of SB 461. Our interview reshaped much of how I understood syringe exchange in Indiana, and drove some of my central conclusions about how different metaphors organize work. Our discussions about research, including how to include and compensate people who use drugs when determining research questions and methods are also central to the conclusions I draw in this exploratory study.

It is important to me that your words and thoughts are represented accurately, and in such a way that my research does not make you uncomfortable or concerned. I am including with this letter a

digital copy of my dissertation with sections where I talk about our interview highlighted in yellow. I will also summarize below the sections where I directly quoted or discussed information I gathered in our interview.

- In chapter two, I use our discussion to frame importance of focusing our research goals and resources on the needs of the community, including the need for including people who use drugs, and compensating them for their contributions. (pgs. 1-2, 20-22)
- In chapter five, I discuss the bulk of our interview, with a focus on 1) how IRA came into being 2) How harm reduction organizes work 3) What kinds of research can support and amplify harm reduction efforts. (pgs. 5, 17-27, 34-35)

Please review these sections and let me know if you want to suggest revisions, or have other feedback about how I have represented our interview. You can contact me via email, or I am happy to talk on the phone or via video conference.

Potential risks

Your work with the IRA means you have been an outspoken advocate and ally for people who use drugs, and that you are engaged in both policy and administrative work in multiple settings. As I explained before our interview, the specificity of your work makes it difficult for me to deidentify you as an interview participant in this study. I am also aware that others representing your work to new audiences could potentially complicate the day to day outreach work you do. I want to mitigate any of that potential risk by collaborating with you if you have questions or suggested revisions for how your words and your work are represented in any future publication of this study. Please contact me via email to share your feedback or to schedule a phone call or video conference if you prefer.

Future work

I am relocating to Raleigh, North Carolina where I will be an assistant professor of technical communication at North Carolina State University. I plan to publish based on this case study, and plan

to use what I learned here to establish community partnerships and get to work, helping to respond to problems in my community. I am interested in your feedback in three areas, (1) on how our interview is represented in future publication (2) your feedback, if you are interested in sharing on the mapping and conclusions I draw in chapter five and (3) on potential future collaboration for research or policy development that supports harm reduction.

I thank you for your participation in my research study. Sharing your time and expertise has been transformative for my thinking, and how I will approach research moving forward.

With kind regards,

Michelle McMullin
Assistant Professor of Technical Communication