Compromised Contraceptive Access in Disaster Settings: An Analysis of State-Level Contraceptive Policies, Title X Clinic Availability, and Emergency Refill Laws in North Carolina and Illinois

Virginia Kuulei Berndt, Ph.D. Student, University of Delaware

Introduction

There is a growing body of literature on illness and disability in disaster settings, including research on accessing medications during and after disasters [1, 5, 22, 43, 50, 52, 55]. Disaster preparedness guidelines and practices stipulate that patients should have one to three months' worth of medication on-hand in case of disaster [1, 12]. Research has detailed the difficulty in obtaining three months' worth of medication ahead of time, due to insurance policies and pharmacy practices [1, 5, 55]. Due to the near impossibility of obtaining the suggested amount of needed medications before disaster, people need to think quickly and improvise in times of disaster to maintain their health [1, 5, 55].

Despite the increasing focus on health management in disaster settings and the intersection of gender and disaster [2, 16, 17, 18, 19, 21, 37, 46], there is a lack of empirical studies concerning women's access to *reproductive healthcare* during and after disasters. The Institute of Medicine (IOM) declared contraceptives to be an essential resource in maintaining women's reproductive health [33]. Even during times of normality, however, women's reproductive health needs are often not viewed as needs nor healthcare and are sometimes viewed as morally reprehensible [4].

With a hegemonic public perception of women's reproductive healthcare as unimportant, superfluous, optional, and/or morally wrong, how are state-level contraceptive policies and emergency refill laws constructed in a way that may compromise women's ability to maintain an emergency supply of contraceptives and/or

hinder their contraceptive access in disaster settings? Using an inductive qualitative approach and content analysis, I compare Illinois' and North Carolina's contraceptive policies, Title X clinic availability, and emergency refill policies, where one state has more progressive contraceptive policies than the other. Specifically, I analyze (1) state-level private insurance contraceptive laws, (2) state-level Medicaid contraceptive laws, and (3) the availability of Title X contraceptive sites in both states. I then turn to (3) an analysis of North Carolina's and Illinois' emergency refill laws, where I find that only one state has such a law in place. This paper concludes with a discussion of implications, limitations, and directions for future research.

Literature Review

Disaster and Illness, Disability, and Healthcare

Researchers are paying increasing attention to illness, disability, and healthcare access in disaster settings [1, 5, 22, 43, 50, 52, 55]. These studies focus on patient and provider experiences as well as organizational-level perspectives and suggestions for future policies. Research has found that providers consider certain chronic diseases to be medical management priorities, including mental health, diabetes mellitus, respiratory illness, cardiovascular disease, and cancer [1]. In one such study, the most oft-cited barrier to providing care was maintaining medicinal continuity, which often stems from lack of medical record information and knowledge, as well as financial constraints. Researchers suggest that insurance companies relax their policies so that patients can obtain advanced prescription refills, adequate education to improve medical knowledge, and make health records more accessible to patients [1].

Several researchers have examined patient perspectives in disaster settings [5, 16, 43, 46, 50, 52]. Chronically ill and disabled individuals are less likely to have general emergency preparedness items but are more likely to have medication supplies on-hand in case of a disaster [5]. The necessity for daily focus on health-related needs prompts these individuals to prioritize having medication ready in case of an emergency or disaster. During disasters, disabled individuals found aid in able-bodied coworkers, friends, and neighbors. Despite the trend of being adequately assisted during disasters, lack of incorporation of disabilities into disaster protocols lead disabled individuals to sometimes be left behind in disasters or otherwise suffer [52]. Thus, many disabled individuals in these studies call for more attention to disability-specific needs during and after disasters [52, 55]. Some researchers have focused specifically on disabled children in disaster settings [50], finding that disabled children have a higher vulnerability to loss of or separation from their caregivers, higher risk exposure, and poor post-disaster outcomes, yielding further vulnerability among this population.

Other research focuses on organization-level healthcare access issues [16, 43, 46]. The National Organization on Disability (2007) published a report revealing that some shelters did not adequately identify those with special needs, leading to these populations being underserved. Moreover, disability assistance over-emphasized medicine as opposed to independent living and advocacy. There is sparse research on women's healthcare access, but researchers have proposed that disaster relief teams have experts in maternal health present and that contraceptives should be available during disasters through services such as the Strategic National Stockpile [16, 46].

Improvisation

Improvisation is an essential component to Sociology of Disaster theory and has been researched extensively by pioneers in the field [14, 15, 35, 36, 39, 45, 54, 60]. Improvisation refers to "[reworking] knowledge to produce a novel action in time to meet the requirements of a given situation" (39: 1). Particularly applicable to my study is Kreps and colleagues' (1994) measures of organizational change and maintenance of social arrangements. Their three-pronged approach consists of (1) the status-role nexus, measuring (in)consistency of role allocation, (2) role linkages, measuring (dis)continuity of existing role sets, and (3) level of improvisation in role performance, post-disaster [36]. These components incorporate both macro-level structuralist and micro-level interactionist perspectives, complementing existing improvisational theoretical perspectives that utilized a macro-level framework. This theoretical framework encompasses role continuity and emergence in disaster settings, where more change yields a higher tendency for role-*making*, and more stability yields a role-*playing* tendency. This is apparent in cases of healthcare access in disaster settings where, due to the near impossibility of obtaining the suggested amount of needed medications before disaster, people often need to improvise to maintain their health [1, 5, 55]. Patients may do so by rationing their medicines to prolong their limited supply or sharing their medications with others who may also need them [1, 5, 55].

<u>Disaster and Gendered Dimensions of Health</u>

Disasters have a disproportionate effect on women. Women are often ascribed roles as household and family caretakers in accordance with classic gender roles [49]. Because of women's roles in helping family members after disasters, for example, their ability to participate in education is negatively impacted [37]. Overall, women work

harder in the wake of devastation resulting from disasters, spending more time collecting and carrying resources home [49]. Disasters make it harder for women to fulfill their household duties and responsibilities as well, therefore disproportionately impacting women and women's health [49]. So, although ascribed gender roles negatively impact women's health [29, 53], disasters may have even greater consequences for women's health.

Resource scarcity heightens and reinforces gender inequality-reproducing structures as well. Men seek to retain their dominant positions by preserving unequal access to depleted resources, enhancing women's vulnerability [13, 40]. Moreover, disasters impact other household members, including children and sick adults; when women must take more time to fulfill their household duties because of disasters, there is less time to provide care to others. Women, therefore, carry the heaviest burden during times of disasters [11].

Disasters also negatively impact women's economic standing and independence [7, 18, 61]. They may halt education and cost self-employed women their workspace and supplies. Along with destruction of their valuable property, women are the first to give up their personal assets to sell in order to care for their families. Due to their ascribed roles as family caretaker, women are slower to return to paid work and are denied government relief due to the government's assumption that women are supported by their husbands [18]. This loss in economic standing and independence leads to a higher risk of poor health among women.

Despite the physical destruction of workspaces and the halting of their educational pursuits, women's workloads become even heavier in the wake of

disasters. For instance, women oversee finding emergency relief assistance, are the first to assist the injured, are deeply invested in search and rescue activities, and are likely to physically their protect homes and businesses from disasters [18]. Women are proactive in mitigating hazardous conditions and preparing their households for disasters [18]. Clearly, before, during, and after disasters, women work to ensure the needs of others before their own [18]. Thus, women's health is compromised through negligence of their own health to provide for their families and community members.

It follows that women recover from economic loss resulting from disasters more slowly than men. Women's less empowered status means that men's recovery takes priority, and men lead decision-making efforts in the home. Left with few options to economically recover, women instead adapt to their economically disempowered positions [18]. Thus, disasters increase women's economic insecurity and unpaid workloads, subsequently negatively impacting their health.

Contraception and Women's Health

Even during times of normality, women's reproductive health needs are often not viewed as needs nor healthcare and are sometimes viewed as morally reprehensible. Indeed, research examining the contraceptive clause Affordable Care Act (ACA), found through analysis of American newspaper articles that women's health and contraceptives were framed as mutually exclusive entities [4]. In these media narratives, this distinction went unquestioned to the point where it was mistaken for medical fact. Moreover, definitions of contraceptives as abortion-inducing superseded scientific definitions, yielding an alarmingly unclear picture of what contraceptives do. Compounding this media narrative is the current emergent discourse on women's

reproductive healthcare, including the impending potential to defund Planned Parenthood, which reinforces this hegemonic belief that women's reproductive healthcare is more superfluous than necessary.

Insurance Coverage of Contraceptives: Private Insurance, Medicaid, and the Uninsured

Private Insurance and Contraceptive Coverage

Before the ratification of the ACA, the United States Department of Health and Human Services commissioned the Institute of Medicine (IOM) to compile a list of preventive services that are necessary for women's health [57]. The IOM's final list of women's preventive health services included well-woman visits, screenings for gestational diabetes, Human Papillomavirus testing, counseling for sexually transmitted infections, and counseling/screening for Human Immune-Deficiency Virus [57]. The IOM also recommended that all United States Food and Drug Administration (FDA) approved contraceptive methods be included. Beginning August 1, 2012, employers were required to provide these copay-free preventive services to employees as part of the ACA [24]. The IOM noted that pregnancy itself is not a disease to be treated. However, health problems related to unintended pregnancy can be prevented through contraception. Women with unintended pregnancies are more likely to receive insufficient or no prenatal care, have depression, or experience domestic violence [33].

Although many insurance plans already covered prescription drugs, some did not provide coverage for the full range of FDA-approved contraceptive drugs and devices. Moreover, while some insurance plans may have covered contraception, the contraceptives may not have been cost-free for patients [24]. Despite this overarching, federal-level contraceptive clause, there are state-level contraceptive laws pertaining to

private insurance that may or may not cover contraceptives, including over-the-counter (OTC) contraceptive methods, prescription contraceptive methods, vasectomies, and tubal ligation [27]. Additionally, refusal clauses are nested within each state's law, allowing certain employers to be exempt, and these clauses range from limited to expansive [27]. These state-level contraceptive laws are analyzed in my forthcoming findings.

Medicaid and Contraceptive Coverage

Medicaid is a public program that provides health coverage to low-income individuals and families [31]. While all Medicaid programs are required to cover family planning services and contraceptives, the amount of coverage for contraceptives varies by state [31]. Of important note is the stark inequality *among* Medicaid recipients due to these differences in state-level Medicaid coverage. Nationwide, 33% of women ages 15 and older are Medicaid recipients [31]. The ACA provided the opportunity to expand Medicaid eligibility to include a higher number of impoverished individuals and families, but only half of states pursued this option [31].

Contraceptive Access among the Uninsured

Eleven percent of women in the United States remain uninsured, despite more affordable insurance options made available through the ACA [32]. This percentage of uninsured women remains stubbornly high due to financial reasons and broader lingering patriarchal frameworks. For instance, women are less likely than men to be insured through their own job and are more likely to get their coverage as a dependent [32]. This puts currently-insured women at a higher risk of becoming uninsured, whether

this would be due to a spouse's death or a spouse's insurer opting to drop family coverage [32].

Uninsured women thus often turn to Title X clinics for their contraceptive and family planning needs. Title X refers to a federal block grant for family planning clinics [30]. These clinics, which serve over 5 million patients per year, 92% of whom are women, can provide access to contraceptive services for little to no cost. Specifically, women who have incomes below 100% of the federal poverty line can receive cost-free services, and those between 101% and 250% of the federal poverty line are charged on a sliding scale basis [30]. Women with incomes over 250% of the federal poverty line pay a higher amount that helps the clinic to recover costs of providing services [30]. While these Title X clinics make contraceptives more accessible to uninsured women, these women are still the least likely to have steady access to contraceptives.

Methods

Sample

My sample consists of state-level contraceptive-related insurance laws and emergency refill pharmacy dispensing laws in the states of North Carolina (NC) and Illinois (IL). I have selected NC and IL as sample cases after an initial search of contraceptive healthcare policies revealed less progressive and more progressive contraceptive clauses within these two states' healthcare laws, respectively.[1] Analyzing two states with vastly different state-level contraceptive laws provides a meaningful

[1] See the Findings section for more information.

contrast in examining this research topic. As women of reproductive age[2] in NC and IL are insured through either private or public insurance, I have chosen to examine state-level contraceptive policies concerning both private insurance and Medicaid.[3] A small percentage of women remain uninsured, so I analyze the availability of Title X family planning services and clinic sites for NC and IL as well. State-level contraceptive policy data, Title X data, and Emergency refill law data were obtained from the Guttmacher Institute [24-28], Henry J. Kaiser Family Foundation [30-32], NC Administrative Codes [44], Office of Population Affairs [47], Planned Parenthood Federation of America [51], and Walls and colleagues [59].

Qualitative Inductive Approach and Content Analysis

For this study, I use a qualitative inductive approach. This approach is appropriate, given my research question, as it helps to (a) consolidate raw, textual data into a concise summarizing form, (b) create linkages between research objectives and findings from raw data, and (c) establish a framework of understandings or processes present in raw data [56]. This generalized inductive research approach provides a simplified way to derive reliable and valid findings compared to other extensive qualitative research methods. For the scope and the amount of data involved, this straightforward approach is ideal.

In this study, I employ content analysis to explore patterns and themes among state-level contraceptive-related and emergency refill pharmacy dispensing policies.

---

[2] Throughout this paper, "reproductive age" refers to ages 15 to 44. Although women can have children outside of this age range, most reproduction scholars define "reproductive age" with this age range [3, 23, 62].

[3] I exclude Medicare because my focus is on women of reproductive age, and Medicare covers individuals aged 65 and older. Additionally, my sample does not include Tricare policies or Indigenous Health Services policies.

Because these policies are somewhat brief, I tracked content analysis through an Excel spreadsheet, listing different components of each policy. For example, in state-level private insurance policies, I noted whether the refusal clause was expansive, broader, or limited. In state-level Medicaid policies, I noted whether prescription contraceptives, OTC contraceptives, and/or sterilization procedures were covered. I then compared the data from the states of NC and IL to compile my findings.

Contraceptive Need and Insurance Coverage for Women in NC and IL

North Carolina and Illinois have similar female populations who need contraceptive services and supplies. Data from the Guttmacher Institute [26] and the Kaiser Family Foundation [31] show that 22% of women in NC need contraceptive services and supplies, while 24% of IL women share the same need. In NC, 64% of reproductive-age women are covered by private insurance, and in IL, that figure rests at 66%. A higher percentage of reproductive-age women in NC (25%) have Medicaid coverage than in IL (14%). Finally, 9% of NC women and 16% of IL women are uninsured [26]. Despite a low percentage of uninsured women, over half of women in need of contraceptive services and supplies in both states are also in need of publicly-funded contraceptive services and supplies [26]. Two states with similar populations of women in need of contraceptive services creates the foundation for an “apples-to-apples” comparison and analysis of contraceptive-related policies, Title X clinic availability, and emergency refill laws.

Findings

State-Level Contraceptive Laws in NC and IL: Private Insurance

North Carolina's state-level private insurance contraceptive laws only cover prescription methods of contraception, while IL covers OTC methods, male sterilization, and female sterilization [27]. Moreover, NC has "broader refusal provisions" set in place, which "allow churches, associations of churches, religiously affiliated elementary and secondary schools, and, potentially, some religious charities and universities to refuse [to cover FDA-approved contraceptives]; hospitals are not allowed to refuse" [27]. Of relevance to this study, insurance policies in IL cover an *extended supply* of contraceptives, while NC insurance policies do not. Guttmacher Institute [27] defines "extended supply" as:

> Go[ing] beyond the federal guarantee by requiring coverage for contraceptive methods that are available over the counter without requiring the patient to first obtain a prescription, ensuring that women may receive a six-months or one-year supply of a method at once (rather than a one- or three-month supply, as is typical) or requiring coverage of male sterilization without out-of-pocket costs.

North Carolina covers only prescription methods, does not cover extended supplies of contraceptives, and the "refusal provisions" set in place are categorized as "broader," while IL covers a wider range of contraceptive methods and has more limited refusal provisions.

State-Level Contraceptive Laws in NC and IL: Medicaid

North Carolina and Illinois, largely, have similar state coverage of contraceptive methods in traditional Medicaid programs [59]. Both IL's and NC's traditional Medicaid programs cover 20 forms of prescription contraceptives, three forms of long-acting reversible contraceptives,[4] and two forms of emergency contraceptives [59]. The two states only differ in their coverage of OTC contraceptives, where IL traditional Medicaid

[4] Long-acting reversible contraceptives, sometimes referred to as LARC, include contraceptive implants and intrauterine devices (IUDs) [59].

covers four forms and NC traditional Medicaid covers none. This is remarkably similar to private insurance state-level contraceptive laws in these states; recall how IL covers OTC contraceptives in private insurance, while NC does not.

Of important note is that one form of emergency contraception, commonly known as “the morning after pill” is available OTC. While prescriptions for emergency contraceptives may be covered under Medicaid in NC, OTC emergency contraceptives are not. The efficacy of emergency contraceptive pills is dependent upon its ingestion in a timely manner, within 72 hours of unprotected sexual intercourse [47]. This means that if a woman with Medicaid in NC is unable to obtain a prescription for an emergency contraceptive pill quickly enough, then she may have to pay for the OTC emergency contraceptive at a nearby drug store in full, which can cost between $35 to $60 [47]. Emergency contraceptives are one of many types of contraceptives that should be readily accessible by women with Medicaid. Unfortunately, women with Medicaid in states such as NC are far less likely to have steady access to contraceptives than both (1) women with private insurance within and outside of the state and (2) women with Medicaid in states with more progressive Medicaid policies, such as IL.

State-Level Title X Family Planning Services in NC and IL

As detailed above, federally-funded Title X family planning centers are an integral component of women’s health maintenance. Indeed, over half of women in need of contraceptive services in both NC and IL used publicly-funded family planning centers to access contraceptive needs [26]. Thus, it is important to examine the availability of Title X family planning centers in these states.

In Illinois, there are 87 Title X service sites, 17 of those being Planned Parenthood sites, and at least 20 of those being specified youth centers [47, 51]. This is important, as Title X clinics ensure anonymity of clients and do not require parental assent for services; family planning services directed towards youth thus aid in preventing teen pregnancies. Moreover, many of these Title X clinics stock contraceptives on-site, making it easier for (1) young women with unstable or no personal transportation and (2) young women who fear being discovered by friends or relatives at pharmacies to fill any prescriptions or obtain any OTC contraceptives.

North Carolina has a total of 37 Title X family planning service sites, less than half the amount of IL's service sites [47]. Similarly, NC has about half the amount of Planned Parenthood sites as IL, with only nine sites state-wide [51]. Moreover, none of these sites appear to be youth-focused. Recall that, thus far, NC has private insurance laws in place that contain broader refusal clauses, and both private insurance and Medicaid laws cover fewer contraceptive options than Illinois. This means that even insured women in NC have fewer options and fewer publicly-funded sites to turn to. Moreover, these women are not guaranteed insurance coverage of contraceptives, as their employer could refuse to cover contraceptives altogether. If it is this difficult for insured women to obtain contraception, uninsured women face compounded difficulty in obtaining contraception through Title X clinics, as half the amount of Title X clinics as IL are attempting to serve approximately the same number of women seeking family planning care [26].

Emergency Refill Policies in NC and IL

As noted above, it is often difficult for patients to obtain medication to keep on-hand in case of an emergency or disaster [1, 5, 55]. However, some states have emergency refill policies in place that allow pharmacists to dispense prescription medications without practitioner authorization [34]. This allows patients to keep an emergency supply of their medications. However, the amount of medication pharmacists can dispense varies by state, where some states only allow a 72-hours' supply, and others allow the dispensing of a more-than-30-days' supply [34]. Fifteen states, however, have no emergency refill policies in place [34].

Illinois is one such state with no emergency refill policy [34]. This, of course, makes it difficult for women to have an adequate supply of contraceptives on-hand in case of an emergency or disaster. Citing the literature above, this may lead women to skip doses of prescription contraceptives to accumulate an emergency supply of contraceptives. In disaster settings, women may feel the need to share their contraceptives with others, as women maintain their caretaker and selfless roles even during disaster situations [2, 17, 18, 19, 21].

North Carolina, however, has a generous emergency refill policy in place. Pharmacists can dispense a one-time emergency refill of up to a 30-day supply of prescribed medication, if:

> (1) The prescription is not for a Schedule II controlled substance; (2) The medication is essential to the maintenance of life or to the continuation of therapy in a chronic condition; (3) In the pharmacist's or permit holder's professional judgment, the interruption of therapy might reasonably produce undesirable health consequences; (4) The dispensing pharmacist or permit holder creates a written order containing all of the prescription information required […]; (5) The dispensing pharmacist or permit holder notifies the prescriber or the prescriber's office of the emergency dispensing within 72 hours after such dispensing [44].

While this policy does state that 30-day emergency refills are legal and obtainable, there are many caveats to note. First, are points (2) and (3), where the medication must be essential to continuation of therapy, and the pharmacist professionally determines that there will be negative health consequences of discontinuing therapy. While contraceptive maintenance is essential for its efficacy, recall that researchers found that women's health is often framed as superfluous and unnecessary, and contraceptive use is sometimes viewed as morally reprehensible [4]. The power, in this law, is in the pharmacist's hands, entirely. If prescription contraceptives are not considered essential nor important, a pharmacist could refuse to provide an emergency refill. In NC, this could certainly occur as demonstrated by the less progressive contraceptive-related insurance policies and sparse availability of Title X clinics. North Carolina's policies favor women's healthcare less than other states. Therefore, while NC has an emergency refill law, the need for an emergency supply of prescription contraceptives may not be considered serious enough by the pharmacist.

Discussion

While NC and IL have had a similar amount of disaster declarations, NC has endured more widespread, severe disasters with long-lasting impacts [20]. Additionally, NC has some of the least progressive private insurance and Medicaid contraceptive policies in the nation. Compounding this is the lack of Title X sites in NC that are evermore needed, as, over the span of four years, there was a greater than seven percent increase in the number of women who needed publicly-funded contraceptive services [26]. In 2017, legislators proposed banning abortion in NC [28], and while

abortion and contraception are mutually exclusive, abortion is conflated with contraception in the media [4].

Heightened susceptibility to severe, widespread disasters with long-lasting impacts, coupled with regressive laws and legislation concerning women's reproductive health, yields a toxic equation that could result in negative consequences for women in disaster settings in NC. While NC boasts an emergency refill law that other states lack, this law leaves the decision to dispense emergency refills up to the pharmacists' "professional judgement." As the IOM declared contraceptives to be essential in maintaining women's health [33], it is reasonable that pharmacists would judge contraceptives to be important enough to warrant emergency refills. However, studies found that pharmacists' "deeply held values" dissuade them from dispensing contraceptives they morally disagree with [10 ,41]. Less progressive legislation sends a message that women's health is unimportant, and this may facilitate pharmacists' refusal to dispense emergency refills of contraception.

Directions for Future Research

This paper provides a beginning in examining contraceptive access in disaster settings. As contraceptives are essential for women's health [33], any study of contraceptive access is a needed contribution to the literature on disaster and healthcare access. Scholars could expand upon this study by interviewing women about accessing contraceptives in disaster settings and in normal times, showing how these macro-level policies impact women's reproductive healthcare access. Additionally, researchers could employ quantitative methods to illuminate broader patterns of contraceptive access in disaster settings on state or national levels.

Additionally, researchers could examine pharmacists' decision-making in dispensing emergency refills. As some states dispense up to a 72-hour supply and others dispense up to a "reasonable amount," [34] it would be fruitful to study pharmacists operating within this variety of emergency refill laws. A study could be structured where pharmacists are presented with vignettes, explaining why they would dispense emergency refills for certain medications. This expands upon findings of women's health being under-prioritized [4] and would provide a clearer picture of the ability for women to have an emergency supply of contraceptives on-hand.

Conclusions

There is a lack of empirical research on women's access to reproductive healthcare in disaster settings. By starting with an analysis of current contraceptive policies, Title X clinic availability, and emergency refill laws, we visualize the framework within which women can (1) maintain an emergency supply of prescription contraceptives and (2) maintain access to contraceptives in disaster settings. By analyzing IL's and NC's contraceptive policies spanning private insurance and Medicaid, along with Title X sites, it is clear that IL has much more progressive laws, where more prescription and OTC contraceptives are covered under private insurance and Medicaid, and Title X family planning clinics are more numerous. This allows women to more easily access and maintain access to contraceptives in times of normality, increasing the likelihood that they will sustain this access in disaster settings.

Despite its progressive contraceptive policies and numerous Title X sites, IL has no emergency refill laws in place, making it difficult for women to have an emergency supply of prescription contraceptives on-hand in case of a disaster. NC has a generous

emergency refill law in place, where pharmacists can dispense up to a 30-day supply of medication without provider approval [34, 44]. Dispensing of this refill, however, is entirely dependent on whether the pharmacist finds it to be necessary for the patient's health. When media narratives frame contraceptives and as unnecessary [4], and in a state where contraceptive policies are less progressive, might pharmacists be less likely to dispense emergency refills for contraceptives? North Carolina is vulnerable to severe, widespread disasters with lasting impacts [20], making this topic even more crucial to research. Researchers should interrogate the decision-making among pharmacists through interviews or vignettes. Additionally, research on contraceptive access during and after disasters through in-depth interviews would paint a fuller picture of women's reproductive healthcare maintenance in disaster settings.

References

1. Arietta, M. I,, R. D. Foreman, E. D. Cook, and M. L. Icenogle. 2009. "Providing Continuity of Care for Chronic Diseases in the Aftermath of Katrina." *Disaster Med Public Health Prep.* 3(3): 174-192.
2. Austin, K. F. and L. McKinney. 2016. "Disaster Devastation in Poor Nations: The Direct and Indirect Effects of Gender Equality, Ecological Losses, and Development." *Social Forces* 95(1): 355-380.
3. Bell, A. V. 2014. *Misconception: Social Class and Infertility in America."* New Brunswick, NJ: Rutgers University Press.
4. Berndt, V. K. 2013. "Religious Frames and the Contraceptive Clause of the Affordable Care Act." Thesis, Millersville University of Pennsylvania.

5. Bethel, J. W., A. N. Foreman, and S. C. Burke. 2011. “Disaster Preparedness among medically vulnerable populations.” *American Journal of Preventive Medicine* 40(2): 139-143.
6. Bharadwaj, P., H. Akintomide, N. Brima, A. Copas, and R. D’Souza. 2012. “Determinants of long-acting reversible contraceptive (LARC) use by adolescent girls and young women.” *The European J. of Contra. and Repro. Healthcare* 17: 298-306.
7. Burroway, R. 2010. "Schools against AIDS: Secondary School Enrollment and Cross-National Disparities in AIDS Death Rates." *Social Problems* 57(3): 398-420.
8. ---. 2012. "A Cross-National Analysis of Sex-Specific HIV Prevalence Rates and Women's Access to Property, Land, and Loans in Developing Countries." *International Journal of Sociology* 42(2): 47 -67.
9. Centers for Disease Control and Prevention. 2015. “Prescription Drug Time and Dosage Limit Laws.” (https://www.cdc.gov/phlp/docs/menu_prescriptionlimits.pdf).
10. Davidson, L. A., C. T. Pettis, A. J. Joiner, D. M. Cook, and C. M. Klugman. 2010. “Religion and conscientious objection: A survey of pharmacists’ willingness to dispense medications.” *Social Science & Medicine* 71: 161-165.
11. de Waal, A. and A. Whiteside. 2003. “New variant famine: AIDS and food crisis in southern Africa.” The Lancet 9391(362): 1234-1237.
12. Dept. of Homeland Security. 2017. “Prepare for Emergencies.” (https://www.ready.gov/prepare-for-emergencies).
13. Dunaway, W. A. and M. C. Macabuac. 2007. “‘The Shrimp Eat Better than We Do’: Philippine Subsistence Fishing Households Sacrificed for the Global Food Chain.” *Review* 30(4): 313-337.

14. Dynes, R. R. 1970. *Organized Behavior in Disaster.* Lexington, MA: D. C. Health.
15. Dynes, R. R. and T. E. Drabek. 1994. "The Structure of Disaster Research: Its Policy and Disciplinary Implications." *International Journal of Emergency Management* 12(1), March: 5-23.
16. Ellington, S. R., A. P. Kourtis, K. M. Curtis, N. Tepper, S. Gorman, D. J. Jamieson, M. Zotti, and W. Barfield. 2013. "Contraceptive Availability During an Emergency Response in the United States." *Journal of Women's Health* 22(3): 189-193.
17. Enarson, E. 1998. "Through Women's Eyes: A Gendered Research Agenda for Disaster Social Science." *Disasters* 22(2): 157-173.
18. ---. 2000. "Gender and Natural Disasters." International Labour Organization. (http://natlex.ilo.ch/wcmsp5/groups/public/@ed_emp/@emp_ent/@ifp_crisis/documents/publication/wcms_116391.pdf).
19. ---. 2010. "Women, Gender, and Disaster: Global Issues and Initiatives." New York: Sage Publications.
20. FEMA. 2017. "Data Visualization: Disaster Declarations for States and Counties." (https://www.fema.gov/data-visualization-disaster-declarations-states-and-counties).
21. Fothergill, A. 2004. *Heads Above Water.* New York: SUNY Press.
22. Fox, M.H., G.W. White, C. Rooney, and J.L. Rowland. 2007. "Disaster Preparedness and Response for Persons with Mobility Impairments." *Journal of Disability Policy Studies* 17(4): 196-205.
23. Greil, A.L., K. Slauson-Blevins, J. McQuillan, M.H. Lowry, A.R. Burch, and K.M. Shreffler. 2017. "Relationship Satisfaction Among Infertile Couples." *Journal of Family Issues* (Online First).

24. Guttmacher Institute. 2013. “Insurance Coverage of Contraceptives.” (http://www.guttmacher.org/sections/contraception.php).

25. ---. 2014. “Contraceptive Needs and Services: 2014 Update.” (https://www.guttmacher.org/report/contraceptive-needs-and-services-2014-update).

26. ---. 2015. “Data Center.” (https://data.guttmacher.org/states).

27. ---. 2017a. “Insurance Coverage of Contraceptives.” (https://www.guttmacher.org/state-policy/explore/insurance-coverage-contraceptives).

28. ---. 2017b. “Laws Affecting Reproductive Health and Rights” (https://www.guttmacher.org/article/2017/04/laws-affecting-reproductive-health-and-rights-state-policy-trends-first-quarter-2017).

29. Heimer, C. A. 2007. "Old Inequalities, New Disease: HIV/AIDS in Sub-Saharan Africa." Annual Review of Sociology 33: 551-577.

30. Henry J. Kaiser Family Foundation. 2015a. “Private and Public Coverage of Contraceptive Services and Supplies in the United States.” (http://kff.org/womens-health-policy/fact-sheet/private-and-public-coverage-of-contraceptive-services-and-supplies-in-the-united-states/).

31. ---. 2015b. “Population Distribution by Gender.” (http://kff.org/other/state-indicator/distribution-by-gender/).

32. ---. 2016. “Women’s Health Insurance Coverage.” (http://files.kff.org/attachment/fact-sheet-womens-health-insurance-coverage).

33. Institute of Medicine. 2011. *Clinical Preventive Services for Women: Closing the Gap.* Washington, D.C.: The National Academies Press.

34. Kim, J. 2014. "A Review of State Emergency Prescription Refill Protocols." (https://www.healthcareready.org/blog/state-emergency-refills).

35. Kreps, G. A. 1989. *Social Structure and Disaster*. University of Delaware Press.

36. Kreps, G. A. and S. L. Bosworth, with J. A. Mooney, S. T. Russell, and K. A. Myers. 1994. *Organizing, Role Enactment, and Disaster: A Structural Theory.* University of Delaware Press.

37. McKinney, L. and K. Austin. 2015. "Ecological Losses are Harming Women: A Structural Analysis of Female HIV Prevalence and Life Expectancy in Less Developed Countries." Social Problems 62: 529-549.

38. Medonca, D. 2001. "Improvisation in Emergency Response Organizations: A Cognitive Approach." Dissertation Thesis, Rensselaer Polytechnic Inst.

39. Medonca, D., G. E. G. Beroggi, and W. A. Wallace. 2001. "Decision Support for Improvisation During Emergency Response Operations." *International Journal of Emergency Management* 1(1): 30-38.

40. Mies, M. 1998. *Patriarchy & Accumulation on a World Scale: Women in the International Division of Labor*. New York: Zed Books.

41. Milosavljevic, J., N. Bogavac-Stanojevic, D. Krajnovic, and A. Mitrovic-Jovanovic. 2017. "Serbian gynecologists' and pharmacists' beliefs about emergency contraception." *Women and Health* 57(4): 508-519.

42. Murray, A. F. 2013. *From Outrage to Courage: The Unjust and Unhealthy Situation of Women in Poorer Countries and What They are doing about it.* Menlo Park, CA.

43. National Council on Disability. 2005. "Report on Special Needs Assessment for Katrina Evacuees (SNAKE) Project."

(http://nod.org/disability_resources/emergency_preparedness_for_persons_with_disabilities/).

44. North Carolina Administrative Code. 1995. “Emergency Prescription Refills” (http://www.ncbop.org/lawsrules/rules.1800.pdf).
45. Nigg, J. M. 1979. “The Emergence of Issues and Collective: Community Response to Earthquake Prediction and Its Consequences.” Dissertation, U. of California.
46. Nour, N. N. 2011. “Maternal Health Considerations During Disaster Relief.” *Reviews in Obstetrics & Gynecology* 4(1): 22-27.
47. Office of Pop. Affairs. 2017. “Title X Family Planning Database.” (https://www.opa-fpclinicdb.com/Browse/Search).
48. Office of Pop. Health Research & Association of Repro. Health Professionals. 2016. (http://ec.princeton.edu/questions/eccost.html).
49. Oglethorpe, J. and N. Gelman. 2008. "AIDS, Women, Land, and Natural Resources in Africa: Current Challenges." Gender and Development 16(1): 85-100.
50. Peek L., and L. M. Stough. 2010. “Children with disabilities in the context of disaster: a social vulnerability perspective.” *Child Development* 81(4): 61-68.
51. Planned Parenthood. 2017. “Find a Health Center.” Planned Parenthood Federation: New York, NY (https://www.plannedparenthood.org/health-center).
52. Rooney, C. and G.W. White. 2007. “Narrative Analysis of a Disaster Preparedness Emergency Response Survey from Persons with Mobility Impairments.” *Journal of Disability Policy Studies* 17(4): 206-215.
53. Smith, M. K. 2002. "Gender, Poverty, and Intergenerational Vulnerability to HIV/AIDS." Gender and Development 10(3): 63-70.

54. Stallings, R. A. and E. L. Quarantelli. 1985. “Emergent Citizen Groups and Emergency Management.” *Public Administration Review* 45: 93-100.
55. Stough, L.M., A.N. Sharp, J.A. Resch, C. Decker, and N. Wilker. 2016. “Barriers to the long-term recovery of individuals with disabilities following a disaster.” *Disasters* 40(3): 387-410.
56. Thomas, D. R. 2006. “A General Inductive Approach for Analyzing Qualitative Evaluation Data.” *American Journal of Evaluation* 27(2): 237-246.
57. U.S. Dept. of Health and Human Services. 2013. “Women’s Preventive Services” (http://www.hrsa.gov/womensguidelines/).
58. Wachtendorf, Tr. 2004. “Improvising 9/11: Organizational Improvisation Following the World Trade Center Disaster.” Dissertation: University of Delaware, Newark, DE.
59. Walls, J., K. Gifford, U. Ranji, A. Salganicoff, and I. Gomez. 2016. “Medicaid Coverage of Family Planning Benefits: Results from a State Survey.” (http://files.kff.org/attachment/Report-Medicaid-Coverage-of-Family-Planning-Benefits-Results-from-a-State-Survey).
60. Webb, G. R. 1998. “Role Enactment in Disaster: Reconciling Structuralist and Interactionist Conceptions of Role.” Dissertation: University of Delaware.
61. Wickrama, K.A.S. and F. O. Lorenz. 2002. "Women's Status, Fertility Decline, and Women's Health in Developing Countries: Direct and Indirect Influences of Social Status on Health." Rural Sociology 67(2): 255-277.
62. Wilson, K. 2014. *Not Trying: Infertility, Childlessness, and Ambivalence.* Vanderbilt University Press.