ENGAGING UNDERSERVED POPULATIONS IN CLINICAL RESEARCH UTILIZING CONCEPTUAL BIOETHICAL PRINCIPLES

A Thesis
Submitted to
the Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
MASTER OF ARTS

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August 2017

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ABSTRACT

Minority underrepresentation in clinical research is an ongoing dilemma that is an impediment to discovering the most innovative therapies for all patients. Additionally, the lack of engagement of underserved minority populations in clinical research limits these patients to traditional standard of care treatment, preventing the potential for innovative therapies clinical research may have to offer. Healthcare providers in underserved communities may struggle with a plethora of barriers they must strategize to overcome to increase access and awareness regarding clinical research for minority patients. Some of these barriers may include: mistrust, lack of awareness of clinical trials for minorities, socioeconomic issues, health literacy and education, and communication. These can be improved with planning, better trials for minorities, commitment to the community, and patient education.

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CHAPTER 1: A HISTORY OF ETHICAL VIOLATIONS IN RESEARCH

Minority underrepresentation in research studies and clinical trials should be addressed from an ethical and historical perspective. To gain an appreciation of the challenges, to develop strategies and to overcome the disparities of minority involvement in clinic trials, it is essential to be cognizant of previous violations and abuses of ethics and human rights.[1] The atrocities that occurred in Nazi Germany during World War II that led to the Nazi Doctors' Trial and the implementation of the Nuremburg Code in 1947 are often taught to medical professionals and researchers extensively, and are well publicized. There are many cases in addition to the events of World War II of historical racism paired with ethical violations that have occurred in the past century. These historical ethical violations are often not taught to medical professionals and researchers. Additionally, historical ethical violations are not discussed with patients to clarify any misinformation they may have regarding these events from the media or other sources. An honest and open dialogue related to historical ethical violation in clinical research is crucial when deciding to introduce clinical trials as an important option and alternative to traditional healthcare, as well as during the consent process.

The following is a brief timeline of events from 1900 to present day that would be beneficial to researchers as well as patients to learn from to work towards eliminating some of the mistrust and barriers that exist in research currently.

1900 Walter Reed Yellow Fever Study

Dr. Walter Reed and his colleagues designed an experiment in 1900 to prove how yellow fever was transmitted because it was a deadly epidemic killing thousands of

people a year. They wanted to prove how it was transmitted and theorized it was by either mosquito or infected air.[2]

The findings were that the mosquito did in fact transmit the disease. Research participants did not provide informed consent, were promised honor and historical memory, and were unknowingly subjected to an uncontrolled research environment. The researchers were eager for results, and pursued aggressive experimentation more as a means to put the mosquito theory to rest than to vindicate it.[2] This study begins a century of historical ethical violations in which we see research occurring without consent in underserved and vulnerable populations.

1932-72 The Public Health Service Syphilis Study in Tuskegee, AL

The Tuskegee Syphilis Study was a long term study sponsored by the U.S. Department of Health. This protocol studied the effects of untreated syphilis in 400 African American men. Researchers withheld treatment even when penicillin became widely available. Researchers did not tell the subjects that they were in an experiment. Most subjects who attended the Tuskegee clinic thought they were getting treatment for "bad blood."[3] This study went on for 40 years and was publicized by congress and national media in 1972 e to unethical research practices on human subjects. In 1995 President Bill Clinton provided a national apology for this egregious and unnecessary study.

1950s Radioactive Cereal Experiments at Fernald

The Fernald State School, originally called The Massachusetts School for the Feeble-Minded, housed mentally disabled children who had been abandoned by their parents. During a stretch between the late 1940s and early 1950s, Robert Harris, a

professor of nutrition at the Massachusetts Institute of Technology, led three different experiments involving 74 Fernald boys, aged 10 to 17. As part of the study, the boys were fed oatmeal and milk laced with radioactive iron and calcium. This study was funded by Quaker Oats as they were interested in creating nutrient enriched cereals and wanted to measure how iron and calcium were absorbed in the body. In another experiment, scientists directly injected the boys with radioactive calcium.[4]

1951-1974 Dermatology Experiments at Holmesburg Prison in Philadelphia

Dermatological experiments on inmates in Philadelphia's prisons were conducted for 20 years, under direction of Dr. Kligman for the University of Pennsylvania. Inmates were told that the experiments were for toothpaste, deodorant, shampoo, skin creams, detergents, liquid diets, eye drops, foot powders and hair dye. The experiments were also accompanied by constant biopsies and frequently painful procedures.[5] Over time it was discovered that in addition to this there were experiments involving mind-altering drugs, radioactive isotopes and dioxin. Dr. Kligman became very rich and successful despite these ethical violations. He became a famous name in dermatology by inventing Retin-A, the acne cream and wrinkle-remover and performing the clinical trials for this drug on inmates in Holmesburg Prison.[5] Inmates would be covered with gauze and adhesive tape because they were involved in multiple trials and being paid to do so. The experiments ended in 1974 as a wave of national publicity and congressional hearings put an end to most human experimentation involving populations such as prisoners and mental patients.[5] It should be noted that Temple University holds the photo archives for Holmesburg Prison and many of the inmates that served time there and were in experiments now live in North Philadelphia. For over 20 years, prisoner experimentation

was so common, that in the 1,200 person prison facility around 80 to 90 percent of inmates were involved in some form of experimentation during their incarceration.[5]

1951-Present Henrietta Lacks Immortal Cells in Baltimore

In 1951, a scientist at Johns Hopkins Hospital in Baltimore, Maryland, created the first immortal human cell line with a tissue sample taken from a young black woman with cervical cancer without her knowledge or consent. Those cells, called HeLa cells, quickly became invaluable to medical research—though their donor remained a mystery for decades.[6] Henrietta's cells were the first immortal human cells ever grown in culture. They were essential to developing the polio vaccine and many cancer therapies. They went up in the first space missions to see what would happen to cells in zero gravity. Many scientific landmarks since then have used her cells, including cloning, gene mapping and in vitro fertilization.[6] This is a well-publicized story that highlights both the importance of informed consent as well as patients understanding their participation in research.

1956-1972 Willowbrook Hepatitis Experiment in Staten Island

Intellectually disabled children housed at the Willowbrook State School in Staten Island, New York, were intentionally given hepatitis in an attempt to track the development of the viral infection. The study began in 1956 and lasted for 14 years. The researcher also wanted to determine the effectiveness of gamma globulin injections as protection against hepatitis. They justified their deliberate infections and exposures by claiming that given that there was a high rate of infection in the institution it was practically inevitable that the children would become infected.[7] There has been criticism

of the ethics of this experiment due to the vulnerability of the population, lack of informed consent and purposely infecting children with Hepatitis.

1963 Jewish Chronic Disease Hospital Live Cancer Cell Injections in New York

Chester Southam injected live cancer cells into 22 elderly patients at Jewish Chronic Disease Hospital in Brooklyn. He sought to learn whether people who were debilitated by cancer could reject cancer cells. None of the patients were informed about the risks, and were never informed that the experiment involved injecting live cancer cells. Several doctors told Southam they did not want their patients experimented on, but he used them anyway.[8] Two years later, the American Cancer Society elected him President; once again, demonstrating that the medical establishment does not necessarily consider violations of medical ethics an impediment to career advancement.[8]

1999 Jessie Gelsinger Gene Therapy Research in Philadelphia

Jesse Gelsinger wanted to help others overcome the same metabolic disorder he had, so he agreed to enter a gene-therapy trial at the University of Pennsylvania. A short time later, the 18-year-old American became the first person to die because of participation in gene-therapy research.[9] The event triggered heightened scrutiny of conflicts of interest in human subjects' research, including institutional conflicts of interest. The major question surrounding his death involved informed consent. Jessie was not informed that several other patients had experienced serious side effects from the therapy.[9] Before Jessie died, the Food and Drug Administration (FDA) required sponsors to disclose financial undertakings that might constitute a conflict of interest when they applied for approval or licensure of their products. That meant disclosure didn't take

place until after the trial was finished.[9] The director of the Penn institute where Gelsinger was treated owned stock in the company that provided financing for the institute. This prompted change to regulations to ensure investigators disclose any financial conflict of interest prior to the start of a trial. Penn settled with the Gelsinger family for an undisclosed amount of money.[9]

2004-2005 Environment Research in Duval, FL

The Children's Environmental Exposure Research Study (CHEERS) was a study funded by the United States Environmental Protection Agency to research how children react when exposed to pesticides and other chemicals used in U.S. households, such as phthalates, brominated flame retardants, and perfluorinated compounds. The two-year study began in the summer of 2004, but was halted that November by the EPA due to criticism and questions of ethics.[10] The study took place in Duval County, Florida, a region chosen for its year-round use of pesticides and for its high concentration of pesticides. This is also a region with a proportionality high amount of low-income black residents. To qualify, the family had to have a confirmed history of residential pesticide use, a child under the age of 13 months, and had to agree to continue residential use of pesticides.[10]

Lessons Learned from Ethical Violations in Research

From this timeline, it is clear there must be transparency in clinical research, and when there are mistakes researchers should be upfront and honest about them. Historically, underserved and at risk communities have been exploited in clinical

research. Some of this research has been very recent, and even funded by our own government.

A large piece of education about clinical trials should be an honest dialogue or previous atrocities that have occurred in research. To open a dialogue and discuss unethical medical and research incidents that have effected both black and white populations would be advantageous. I would suggest going back to the 1900s with the malaria studies performed by Walter Reed, including a discussion on the Nazi experiments during World War II, and then conclude with a very open and honest dialogue about the research violations on the black community.

Research atrocities have not been confined to one ethnicity by any means. While the underserved and specific ethnicities may have been more likely targets, Jessie Gelsinger was white and his case is not well known by those outside of the research community. Past medical experimentation and other practices on blacks were often brutal and unethical, and these experiences may have served to fortify the legacy of African-American mistrust in the medical system that culminated in the infamous Tuskegee Syphilis Study.[11] Education about the history of research as well as health and the healthcare system can help with some of these trust issues and misconceptions.

CHAPTER 2: CURRENT STRUGGLES ENGAGING MINORITIES IN CLINICAL RESEARCH

Life-saving and life-changing clinical trials traditionally have low minority enrollment, even at institutions that service primarily Black and Hispanic populations who may be economically and educationally disadvantaged.[12] Black, Hispanic, and urban poor patients are typically underserved in care and underrepresented in research. A significant barrier to greater diversity in research participation is researchers' failure to account for different levels of health literacy amount the population they are seeking to recruit. Many patients are unable to fully understand their choices, and this can prevent them from participating in research studies.[12] While the roots of these issues are complex, my focus here is on why minority patients remain underrepresented in research. This includes the historical background that has left minority populations adverse to clinical research, as well as the ethical and scientific imperatives for greater inclusion.

When conducting human subject research in the United States in accordance with the Department of Health and Human Services regulations, certain populations may be considered "vulnerable" if they have a limited capacity to make voluntary and informed decisions.[13] These include: minors, prisoners, pregnant women, physically handicapped, mentally disabled and the elderly.[13] However it is unclear whether economically disadvantaged and educationally disadvantaged should also be included as vulnerable populations because they too may have a limited capacity to make voluntary and informed decisions. This is due to lack of access to education, insurance, and finances other patients in wealthier communities may have. In comparison with other less vulnerable populations, uninsured individuals often have lower incomes, are younger and

less educated, and are more likely to be members of minority groups.[12] Federal regulations include safeguards protecting the rights and welfare of research participants who are likely to be vulnerable to coercion. To the extent that individuals with limited access to healthcare and research resources are vulnerable to exploitation, undue influence, or lack of understanding when asked to participate in research, special protections should be put into place. This is to ensure that the economically and educationally disadvantaged be recognized by institutions as vulnerable populations.[12] Such a shift would allow for proper review of protocols and consent forms to ensure participants are truly informed regarding the research they agree to participate in is not in itself coercive.

Currently, researchers do not have the appropriate level of protection for this subset of patients. There is a disparity in research compensation as well as grey area regarding what insurance will and will not cover as standard of care as part of the research. This leads to confusion and ultimately hesitation or complete unwillingness to participate in research because there are some parts of research that may not be covered by insurance. The explanation of this may be very difficult for the patient to understand. Consent forms are written on what is expected to be an eighth grade level, however many urban minority patients may not read on that level, and many consent forms are written on a college level. [14] This leads to the question of whether a patient is just signing away without fully understanding what is stated in the consent, essentially being uninformed. Both primary investigators as well as study coordinators lack time and resources to focus the amount of time that is needed to adequately consent a patient who may not understand the words they are seeing on a ten to twenty page document. Additionally,

informed consent should be a process where the research is explained to the patient, not where they are expected to read a document on their own. Often, this may not be the reality, which is unfortunate for those patients who could benefit from a clinical trial. It becomes a jumbled mess of confusion, and likely humiliation and intimidation for the patient.[14] If they take the consent form home to discuss with their family, is this an appropriate independent review to allow the patient to make an informed decision? Many minority patients hold the belief that information disclosed by researchers cannot always be trusted and recommend the use of advocates. This practice might entail encouraging participants to bring a family member or trusted friend to advocate for them during their research visits or having on-site advocates available to help participants understand the details of a proposed study. A variation on this suggestion was to have a medical team separate from the investigator's team explain the study and its risk to advocate for participants.

No person in the United States should be enrolled in research without twin protections of informed consent by the authorized person and independent review of the risks and benefits of the research.[14] Additionally; the concept of social vulnerability should be explored. That so many categories or people are now considered vulnerable that virtually all potential human subjects are included.[14] Urban institutions could absolutely benefit and thrive from a research standpoint if we approached patients on their level, in language or vocabulary they can understand, had a patient and family-centric approach, and invested in on-site advocates.[14]

Interestingly enough, the majority of therapeutic research enrollment does not include the patient population of the institutional urban capture zone of patients, which

often includes minorities and educationally and/or economically disadvantaged populations. Researchers consistently have low enrollment across the board in an urban setting because populations that are willing to enroll in clinical research are primarily white. An institution should choose research that is relevant and based on existing disease states the local community struggles with. At urban academic teaching centers, there is a struggle to enroll small numbers of patients on protocols that have lifesaving potential. This leads me to ponder if there is a racial barrier or an overall lack of trust from the patient population. Particularly in the African American community, some distrust is based on a history of abuse and exploitation in many areas and on the "Tuskegee" Legacy.[15]

If institutions had cultural competence training, as well as a larger staff of minority physicians who conducted research or research teams that were also minorities this would increase minority trust and enrollment. Academic teaching institutions and clinical researchers must work to ensure that research teams include individuals who can relate to participants, have similar backgrounds, understand the participants' experiences, and speak their language. Language is often a barrier because patients who do not speak English are traditionally completely excluded from clinical trials because it is too expensive to have consents translated into their native language.[14] In North Philadelphia, a particular struggle researchers have is obtaining consent forms and research materials in Spanish for Hispanic patients. Without funding to translate consent forms or have interpreters readily available, this minority population becomes alienated from clinical research.

The poor health outcomes and high mortality rates that are prevalent in the urban minority socioeconomic, ethnic, and racial groups exist in part due to financial barriers. Examples of these financial barriers include inability to pay for travel, inability to find a babysitter, or having to choose a medical co-pay over a meal. Advancements in clinical research could potentially improve these health outcomes. Health practitioners and researchers must work to find ways to overcome these barriers and offer clinical research options to underserved patient populations. Small steps, such as employing health care advocates to intervene early on in the hospital experience to help navigate patients to appropriate areas and reduce stress and confusion is a feasible solution to begin to improve relationships with patients. Another is providing educational programs, particularly related to historical ethical violations in research, in the community to discuss research with an urban minority patient population to make it less of a taboo or negative experience. Institutions should strive to do an adequate job of eliminating initial fears and taboos that may concern patients regarding clinical trials and assuring their safety.

Researchers are currently struggling to implement programs for the urban poor and are increasing concerned with the possibility that the Affordable Health Care Act may be repealed entirely and replaced at a later date. The American Healthcare Act under the Trump administration could potentially be disastrous for the small amount of progress that has been made in urban communities in clinical research due to lack of funding. Still, there are so many small steps that can be made to encourage clinical research and improve research in an underserved urban setting.

Instead of large academic teaching hospitals that are notoriously difficult to navigate and, sometimes very unwelcome to the local community, smaller clinics or community healthcare centers can be opened. This would allow clinicians who are in medical school or in a residency program the opportunity to engage with the community on a more personal level as well as offer the community the much needed access to healthcare it both needs and deserves. These smaller clinics can also offer health education and awareness to the community. Additionally, some patients are more comfortable with a practitioner who is of the same sex, culture, or ethnicity. It is important to note that there can even be a mistrust of physicians, especially in the black community.[15] Hospitals in urban communities should have incentives to recruit minority physicians and staff and ensure they have adequate staff for patients who require foreign language services. Often, staff are hired from areas outside of the local community, leaving those who live in the local community to continue to struggle with unemployment and underemployment.

CHAPTER 3: RECOGNIZING HEALTH DISPARITIES

"You can't reason with a man who is hungry. You first have to give him food to eat"[37]
-Rev. Leon H. Sullivan

In exploring the impact of the built environment of public health, research indicates that the burden of illness is greater among minorities and low-income communities.[14] Lower socioeconomic status communities usually have limited access to quality housing and live in neighborhoods that do not facilitate outdoor activities or provide many healthy food options.[14] Inequities in construction and maintenance of low income housing, especially for blacks, older people, people who are disabled, and immigrants have resulted in insufficient housing, poor quality housing, overcrowding, and higher levels of population density and health problems. Consequently, these communities may experience greater rates of respiratory disease, developmental disorders, obesity, chronic illness, and mental illness.[14] Understanding the existing environment, and its influence on human health requires a community-based, multi-level, interdisciplinary research approach to both recognize health disparities and work to improve them.[14]

In North Philadelphia, I was able to work within a group to contribute to the community and recognize health disparities through participation in a church based service at Zion Cares, a subset of a local church named Zion Baptist Church. Zion Cares is a small group ministry that has worked in collaboration with Zion Baptist Church and the Leon H. Sullivan Charitable Trust to assist in local community outreach. Leon H. Sullivan was a Philadelphia-based Reverend who created a trust meant to create community development opportunities and to provide resources to advocate on behalf of

impoverished people.[17] Reverend Sullivan believed giving back is the duty of both the community and of individuals to be there for those in the community who are underserved.[17]

While Zion Baptist Church is located in North Philadelphia, it services middle class and affluent Black parishioners who commute in for services. Zion Cares was set up in an older building across the street from the main church to service the poor, the homeless, and local underserved community. During my time at Zion Cares, it was discovered that the building the services were being held in was uninhabitable and the roof eventually collapsed. This led the church, and our community engagement group, to move the Zion Cares parishioners to the main Zion Baptist Church. This move was not well received by the regular parishioners as the Zion Cares group included individuals who either underserved or homeless. Many of the Zion Cares parishioners did not have the resources to keep up with regular hygiene or clothing to protect them from the colder seasons. We found ourselves being moved weekly from one obscure area to the next to ensure the Zion Cares group would not be able to interact with the regular parishioners. Our group was ultimately settled into a gym area that was far away from the regular church services.

After each Zion Cares service, we had the opportunity to serve lunch and speak at length with the congregants, most of whom were homeless or had inadequate shelter. Other than lacking basic healthcare, their basic human needs of food, clothing, shelter, and toiletries were also not being met. We were able to collect essentials such as soap, toothpaste, tampons, socks, clothes, and coats during the fall semester. During the spring semester, we continued to discuss how concerning the lack of mental health care

resources was and the overall health care disparities that existed. The most crucial topics we found the community members struggled with were: substance abuse/recovery, mental health, and health care service coverage. We put together a resource guide that provided local free clinics, shelters, and meetings for addiction and alcoholism. We have to rethink the barriers we currently struggle with in the urban setting related to health disparities. This is the only way we are going to move beyond the boundaries that exist to improve equity, inclusion, and diversity in health care. The key to this is community engagement. Overall, health is linked to livability, sustainability, and equity, which are three factors that are usually severely lacking in an urban setting, and certainly lacking in North Philadelphia. We need to continue combining theory and methods as a way to understand and explain how the underlying structures of urban environments relate to public health and social equity.[18]

CHAPTER 4: IMPROVING HEALTH EDUCATION AND ACCESS AS A MEANS OF INCREASING RESEARCH PARTICIPATION

To improve access to research, we must first look at the main determinants of health and the ways these determinants of health impact those in an urban setting. Areas of priority would include very general socioeconomic, cultural, and environmental conditions. These include: access to food, education, employment, living conditions, sanitation, health care services, and housing. This links to social and community networks and individual lifestyle factors.[19] Very clearly, someone who is underemployed in an urban setting is going to have more difficult accessing healthcare than someone who is middle class living in the suburbs. When a person's day to day struggle is to make ends meet, healthcare is something that may not be a priority until something very serious occurs. Some of the ways to impact these determinants include: focus on community networks in the urban community; find ways to improve individual lifestyle factors affecting the community; minimize health care access barriers for urban residents; and create and maintain an open dialogue with the community to identify barriers.[19]

Another struggle that affects the underserved in urban communities beyond lack of access to healthcare is health literacy. Clinicians tend to speak in terms the average person does not understand, and possibly may not feel comfortable asking for clarification. Many feel their doctor may know best or if they oppose their doctor's wishes they may not receive the best healthcare. So there is often a very one-sided dialogue. Speaking to patients in a plain language that is easier to understand is very important for both healthcare and clinical research. Clinicians should make sure their patients understand them and ask open ended questions to ensure this is occurring as

opposed to speaking in medical terms and jargon. Researchers should also think about how culture in the black and Hispanic community varies and affects how patients communicate and understand health information.[20]

We should also educate our clinicians. Cultural competence is so important to consider when engaging underserved communities and minority populations. Cultural competence requires that organizations have a defined set of ethics and policies to make sure they demonstrate appropriate behaviors and attitudes to individuals of all backgrounds. Often healthcare professionals have their own culture and language from their training and work environment and this affects how they communicate with patients. Educating health professionals in cultural competence can allow them to recognize cultural beliefs, values, attitudes, traditions, languages preferences, and health practices that lead to positive health outcomes.[21] This ultimately will lead to better education within the community, improved engagement, improved trust, and increased community involvement in healthcare and clinical research.

Underserved urban communities also struggle with health literacy. The primary responsibility for improving health literacy lies with health professionals engaging and educating the community. We must work together to ensure health information and services are understood by patients. Patient advocates and healthcare practitioners can be productive in reaching patients with limited literacy skills.[21]

CHAPTER 5: IMPROVING URBAN RECRUITING THROUGH COMMUNITY ENGAGEMENT

Residents of underserved urban communities are more likely to experience excess rates of heart disease, cancer, interpersonal violence, and other conditions when compared to persons from non-urban areas.[4] Low-income residents, predominantly people of color, who are increasingly concentrated in cities and their surrounding metropolitan areas, bear a disproportionate burden of these diseases.[4] Since there is such a large population of patients in urban areas that have health problems, one would assume an urban academic teaching center would have large numbers of minority enrollment in clinical research. This is not the case; urban academic teaching centers do not have large minority enrollment. In this chapter I would like explore ways to improve research recruitment and enrollment in an urban setting as well as discuss barriers to research in urban minority communities.

Researchers should rethink the process of research in an urban community. Due to the changing demographics of the population of the United States ethnic and racial minorities in healthcare may soon be a majority. Ultimately, there will be no more excuses to conduct trials without statistically meaningful numbers of minority participants.[2] A feeling of distrust towards both medical professionals and research is strong in minority populations in part due to past controversies that directly involved the black community. While most academic teaching centers service a disproportionate number of vulnerable populations, the workers in these settings do not live in the area. This may lead to further divide between institution and community. Policy must be changed to deal with this directly. To appropriately represent the population of the local

community, we must engage the community and work to change their perception of research. A new model of recruitment into clinical trials that allows for even distribution over all populations would be ideal. The implementation of community-based participatory research settings would ideally form research partnerships among community-based organizations, private organizations, and public health agencies to form solid partnerships.[4] The policy goal should be to provide community representatives, public health researchers, and funding agencies with information about how research can be done in urban communities with equitable opportunities for all partners to contribute.[4] Understanding the factors that lead to poor minority engagement in both healthcare and research should be brought to the forefront to improve community health.

Institutions interested in increasing minority enrollment should also consider recruitment of adequate investigators. Investigator concordance is important because quite often minority patients seek out health care practitioners of the same race.[12] Nevertheless, there are administrative and time barriers to minority physicians becoming principal investigators. Before being selected as a principal investigator for an industry sponsored trial, potential physicians are required to fill out numerous, and often lengthy, questionnaires. For community-based physicians with a busy schedule, this time commitment can be prohibitively burdensome. This administrative barrier could be reduced by streamlining the site selection and feasibility process.[12] Another option would be partnerships between research sites and community practitioners. This would allow community practitioners to discuss clinical trials with their patients, and then refer them to collaborating research sites. This would allow the community practitioner to remain

focused on their patients, but still give the patients the opportunity to participate in clinical research.[12]

Participation in clinical studies can result in financial and times costs. While study procedures and medications may be provided free of cost, patients are often required to pay for their standard of care costs. These costs can prevent the uninsured or underinsured from participating in research studies. Even if these procedures are covered by health insurance, study participation can result in additional costs in the form of transportation, childcare, and missed work.

Researchers should also rethink regulatory barriers that currently exist that hinder minority enrollment in research. A major barrier is informed consent forms. When institutional review boards review research studies, there is frequent push to add a lot of medical terminology and risks to the informed consent to protect the institution. This also provides the board an assurance that all necessary information is being provided to patients who will be potential research subjects. This large amount of intimidating information may also be preventing patients from enrolling. Patients may decide to bypass a research study out of fear or embarrassment if they are unable to understand the information or feel uncomfortable asking questions. Researchers can improve and increase research participation among minorities by ensuring that all subject materials are understandable and written at an appropriate grade level. As informed consent is obtained through a process, and not a form, there is a great opportunity for the research team to connect with the patient and provide as much information as possible. Researchers also need to be sensitive to those who require consent forms that are translated into their native language and require an interpreter. This is a service and

resource most large institutions provide. This is especially important for the Spanish speaking community.

CHAPTER 6: CONCLUSION

There are countless improvements that can be made to engage minorities in clinical research that could be life-saving and remove some of the stigma from historical experience in the health care system within underserved minority communities. The primary barrier in engaging minorities in research is distrust that stems from much publicized cases including: Henrietta Lacks, the Tuskegee Syphilis trials, and even Holmesburg Prison right here in Philadelphia. No one wants to be used in some type of experiment and then be forgotten. This is a sentiment that is felt by many. In an underserved urban setting, black patients are more likely than white patients to fear that they would be used as guinea pigs for medical research. Black patients are also more likely than white patients not to trust their doctors would fully explain the significance of their participation in clinical research. These bad feelings make it difficult to recruit minorities as participants in research studies. There continues to be an underlying element of mistrust between poor populations and minority populations that are potential research patients. Mistrust of the health care system by black patients has to be addressed and corrected by researchers and institutions.[11] In reality, clinical research can enhance traditional healthcare, especially in the black and Hispanic communities. As we see higher and higher rates of cancers and resistant bacteria, sometimes clinical trials can be life- saving options. Additionally, having research data from a more diverse population can help define clinical guidelines more to have more specific treatment therapies for minority patients. Cardiac guidelines have changed because clinicians see in practice that black patients need different treatment and that certain drug classes are not as effective. This is potentially something that could have been captured decades ago in clinical

research but was not because both healthcare practitioners and researchers do such a poor job of engaging minorities in research.

Researchers and healthcare practitioners have to build trust through communication and education. The local community should be involved and not feel like an outsider by academic teaching hospitals. We not only need to recruit minority and female physicians, but also research personnel and staff from the local community. We also should re-examine trial design and ethics to ensure issues that have occurred in the past do not occur again. Patients should feel empowered about clinical research and understand the study as it is presented to them and feel that they have been given enough information to provide an informed opinion about whether or not they would like to participate in a clinical trial. If researchers take small steps, success can be found by rethinking the process and approach of research in an urban community. Researchers can find new ways to improve recruitment and enrollment in minorities. Researchers should also look to minimize participation barriers for minority candidates as well as rethink regulatory barriers to participation if they potentially exist.

Overall, from an ethical standpoint, urban academic teaching institutions are in dire need of establishing a real connection with the local urban community if there is an expectation to move forward in research and patient care. Institutions should endorse rules and procedures that allow the research agenda to move forward with safety, efficacy, and trust in the scientific community. Researchers now need to face up to the flaws in the research process, use what has been learned about the ethical conduct of human subject research, and start over again. This reflection would be an excellent starting point for any academic teaching institution. It is pertinent to begin a dialogue

amongst institutions and the local urban community to focus on appropriate needs. The most appropriate starting point in this dialogue is education. Education should encompass not only patients and the community, but also researchers, physicians, ancillary staff, and faculty. Education is a key step to engaging the community and increasing their willingness to be involved in research as well as improve their overall healthcare outcomes. Local institutional review boards should consider expanding our vulnerable populations to include the economically and educationally disadvantaged. This would help ensure protocols are suitable for our patient population and informed consent is written and delivered in a manner in which our patient population can understand and truly be informed prior to consenting to being involved in a clinical trial. The inclusion of social workers, case managers, patient advocates, as well as caregivers and family members would be an appropriate team approach for success.

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