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Hypertension Management Through Community Outreach Services for Inmates Released From Jail

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Abstract

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MS, George Mason University, 2000

BS, George Mason University, 1995

Project Submitted in Partial fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

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Abstract

Hypertension (HTN) is the most common chronic disease among jail inmates. Many inmates treated for HTN while incarcerated in the Fairfax County Jail do not continue treatment when they return to their communities. Factors that contribute to discontinuing HTN management once the inmate returns to the community include homelessness, low income, and lack of access to care. The purpose of this quality improvement project was to educate inmates with HTN about community-based outreach services for HTN management and continuity of care while in the community. The outcome measured was the number of subjects who returned to jail reporting use of a community-based clinic for follow-up HTN care after their last release from jail. The chronic care model was used to address factors that affect inmates seeking health care services upon release from jail as it focused on health care systems, delivery system design, decision support, clinical information system, self-management support, and community. The project was conducted in 2 phases during a 6-month period. A pre-HTN survey questionnaire measuring HTN history and lifestyle was administered to 67 inmates at their initial incarceration. A post-HTN survey was completed on 2 inmates returning to the jail during the 6-month period and adherence measured on post jail follow up of their HTN care in the community. The findings of this quality improvement project indicate that both inmates who returned to jail in Phase 2 of the project followed up their HTN care in the community after release from jail. This project shows promise as a first step in the process of social change in planning discharge for inmates with HTN at the time of incarceration.

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Dedication

This quality improvement project is dedicated to my husband Amadu Wurie, who has been a constant source of support in my life. He has been the pillar in my professional life. He never said no. You never said no to me. Your words were always, " If this is what you want to do, you have my support. I am truly thankful for having you in my life. This work is also dedicated to my late parents Brima and Fatmatta Kosia, my grandparents, my children Fatmatta, Mariama, Ibrahim, and Ruth Wurie. Especially Fatmatta, worked to make me realize that the computer can do more, than I ever knew. My supervisor Donna Mayne for believing in me, and always ready to support me. My Colleague Lishan Kassa, for her support and guidance. My aunt Mrs. Isatu K. Fullah and her husband, Mr. James Fullah, for loving me enough to bring me all the way from Sierra Leone, West Africa to the United States of America, where I have been able to accomplish my dreams. Finally, I dedicate this work to all my families, friends, my professional colleagues, nursing students, and the patients that I have had the opportunity to serve throughout the years.

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The committee member all made me feel like they had vested interest in my project by being sure my paper was perfectly done. For these wonderful reasons, I am indebted to them. I also want to thank Fairfax County Adult Detention center for the opportunity to perform my project study at the facility. I also want to acknowledge my preceptor Dr. Cordelia Niekitien-Tawari who gave up 576 hours of her time for me to complete my practicum with the Falls Church/Fairfax Community Services Board while gaining experience at the Lamb Center, CornerStone homeless shelter, and the Northwest Center.

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Section 1: Overview of the Evidence Based Project

Introduction

Hypertension (HTN) is the world's most prevalent chronic care disease leading to significant morbidity and mortality (Centers for Disease Control and Prevention [CDC], 2013). More than 2.3 million persons are incarcerated in the United States, and a large number of those incarcerated have HTN or other chronic care diseases. According to Bingswanger (2010), HTN is listed as the most common chronic disease among jail inmates. One in every three American adults has HTN (CDC, 2013). HTN is considered a major risk factor for chronic diseases. The estimated 68 million Americans with HTN have an increased risk for heart disease, stroke, and death (CDC, 2013). Despite the growing number of inmates in the United States, they are excluded in most national health surveys. Inmates in jails and prison have a higher incidence of HTN among individuals ages 18 to 65 years compared with the general population (Binswanger, Krueger, & Steiner, 2009).

Nakashian (2009), in a study of cities with high incarceration rates, reported that the cost to society from 2001 to 2008 to care for former inmates with chronic diseases was $6.2 million. Eighty percent of former male inmates, and 90% of former women inmates, had chronic conditions during their incarceration that needed treatment. Nash, Reifsnyder, Fabius, and Pracilio (2010) reported that a chronic disease affects four in five American ages 50 years and older. In 2009, national health care costs topped $2.5 trillion, and 80% of the cost is spent on treating chronic care conditions. CDC (2012) reports that with 45 million Americans still uninsured, the number of individuals with chronic

diseases such as HTN is expected to rise. Nainggolan (2009) wrote that there is an increased risk for former prisoners to have HTN and that it is imperative that inmates be linked to community-based care prior to release. Collaborating with community-based clinics will help provide continuity of care to the inmates with HTN while in the community and reduce complications related to lack of treatments.

According to Nakashian (2009) the common health problems reported by former prison inmates are depression, asthma, hepatitis, and HTN. Nakashian noted that health needs assessment and linkage to community resources were not initiated by the prison facilities prior to release, and that policy makers and practitioners must implement plans to link inmates to community health services prior to release. Disease prevention and wellness promotion are an economic factor, whose benefits are noted later in the life of a person (Polit &Beck, 2006).

The nurse's role in dealing with HTN is to create a sense of knowledge of HTN for the patient, leading to a reduced rate of HTN. Understanding a person's knowledge and attitude about HTN can help the health care provider perform interventions that can reduce the risk of HTN, improve blood pressure readings, reduce complications related to untreated HTN or poor compliance, and eventually improve the quality of life of the individual (Wang et al., 2009). Discharge planning that involves families, linking community outreach programs with the jails and prisons, can make re-entry into the community successful. Wang et al wrote that many inmates leaving the jail for re-entry into the community should have a checklist completed prior to release to identify medical and social needs. Jarrett, Adeyemi, and Hugging (2006), in their 12-month study on

recently released inmates from Baltimore City, Maryland found gaps in the current practice and policies for meeting the health care needs of former inmates. Jarrett et al. suggested that linking the soon-to-be-released inmate with a community health care provider will help reduce the high mortality rate associated with lack of continuing health care follow-up after incarceration.

Problem Statement

The project developer noted that since working at the Fairfax County Jail many inmates with a known history of HTN return to the jail with a history of not taking blood pressure medication since their last incarceration. Factors that contribute to inmates returning to jail without HTN treatment since their last incarceration include homelessness, low income, and lack of access to care. This lack of ongoing treatment while in the community can become a problem for society. Inmates without treatment for HTN end up with strokes and even death (CDC, 2012). According to Heines (2005), community leaders implemented programs linking inmates with community-based services to improve the overall health of their communities due to the concerns that the number of jail and prison inmates with a chronic disease is higher compared to the general public. Heines reported that of the 2 million people who are incarcerated in jails and prisons in the United States, 25% are homeless and 14% suffer from mental illness. These concerns affect communities as inmates are released from jails and prisons. If inmates continue to return to jail without continued treatment or follow-up care, the number of deaths from complications from HTN and the cost of health care will continue to rise (Heines, 2005).

The Agency of Healthcare Research and Quality (AHRQ) (2009) reported that the community-oriented correctional health services paired with community-based clinics before and after release from prison or jail can improve safety and improve patient care. Many inmates leave the jails with appointment cards for postrelease follow-up care in assigned community-based clinics (AHRQ, 2009). The concern is that only a small number of communities have services for inmates with chronic medical conditions (AHRQ, 2009). Based on these findings, linking inmates with community outreach service prior to release from jail will improve continuity of care for inmates with HTN. Wang, White, Jamison, Goldenson, and Estes (2008) conducted a study in San Francisco, California, to determine whether inmates released with adequate discharge planning for health care improves follow-up care. The results showed that inmates with HIV had better health care release plan for continuity of care in the community after release from jail compared with inmates with other chronic illnesses. The jail systems with health care models that are linked with community-based care can improve the health of former inmates (Wang et al., 2012).

The project developer's quality improvement program provided inmates education about the importance of continuity of care while in the community, medications, and prescriptions as needed by inmates prior to release from jail. The project helped prevent abrupt discontinuation of treatment upon release, and it provided the resources needed to link inmates to community-based clinics prior to release from jail.

Purpose Statement and Project Objective

The purpose of this quality improvement project was to teach inmates with HTN prior to release from jail about community-based outreach services for HTN management and continuity of care while in the community. It was expected that continued treatment and follow-up with the community would be more effective if inmates were educated about HTN, and an established community connection for continuity of care prior to release from the jail was established.

The current project was designed to address how inmates could obtain follow-up care for HTN care in the community after release from jail. According to AHRQ (2009), inmates have poor access to community health care services after release from jail. Although jails are required by law to provide services to inmates while incarcerated, there is limited continuity of care following release (AHRQ, 2009). Prisoners are released from jails without insurance or other sources of health care, therefore, linking recently released inmates to community-based health clinics is needed to help former inmates increase access to health care (AHRQ, 2009).

Significance/Relevance to Practice

Miles (2014) reported that jail is the best place where inmates with health problems can be connected to the community, because the jail is the entry point of inmates as they enter the judicial system. With more than 60% released within a week of entering the jail, 90% of inmates leave the jail without health insurance. These former inmates then rely on the public health system for healthcare services.

Fairfax County Adult Detention Center is a jail that houses more than 1,200 inmates. Many of them are repeat offenders who cycle in and out of jail many times a year. The

inmates stay in the jail on a short-term basis and are released or sent to state prisons if they are sentenced for more than 1 year. Due to overcrowding in the prisons, inmates often stay in the jail for more than 1 year, sometimes serving their full sentence at the jail prior to re-entry into the community. The jail has almost 600 employees working in different capacities. The medical department has approximately 40 staff that includes nurse practitioners (NPs), nurses, phlebotomist, and other support staff. Upon incarceration into the jail, the inmates are screened for chronic conditions and referred are to the physicians or NPs for follow-up care. Many inmates are incarcerated in the Fairfax County Jail with a history of HTN, diabetes (DM), seizures, human immunodeficiency virus (HIV), asthma, and various mental health issues.

Fairfax County Jail is an appropriate place to implement this quality improvement project because of the large number of inmates treated for HTN by the project developer. This quality improvement project is important and necessary because it will help the inmate with the opportunity to be educated on HTN, adverse effects related to lack of treatments, and information needed to continue care for HTN while in the community. Butler (2013) wrote that jails are part of the community health care system. If inmates with chronic conditions such as HTN continue to be released from jails without linking them to community-based clinics, their chronic condition worsens, and they become a community health burden. Butler notes that not linking jails to community-based services can create a significant breakdown in the health care system as many inmates cycle in and out of jails.

Project Questions

This quality improvement project seeks to answer the following project question. Will inmates with HTN, when provided with education about HTN, given release medication, prescriptions, and linked to community outreach services for HTN follow-up prior to release from jail, continue HTN treatment and use the community-based clinics for HTN follow up care once released from jail? The effectiveness of this intervention will be measured by the number of inmates who return to jail reporting continuity of care while in the community after release from jail.

Evidence-based Significance of the Project

This project provided every inmate with HTN leaving the jail with medication prior to release from jail and information inmates need to continue care for HTN after they are released from jail. This project was designed to help staff within jails recognize the need for inmates with HTN to be linked to community-based health care services, thereby reducing the complication related to poor health care from chronic diseases. With the considerable prevalence of HTN, and the complications associated with HTN, it is important for nurses in the jails to be well aware of the significant impact HTN has on the health of the inmate and take action to help reduce the potential complications that can occur.

Implication for Social Change

The value of this quality improvement project is confirmed, as inmates who returned to the jail after participation in Phase 1 of the project report accessing community based services upon re-incarceration to the jail. Adherence to all the

education and instructions given to the inmate prior to release from jail means social change has taken place.

Definition of Terms

Hypertension (HTN): The medical term for high blood pressure that results from tightening of the arteries. It is the force of the heart pumping blood. The normal blood pressure should be less than 120/80.

Hypertension Management: Is the process of treating HTN with continued follow up care. This includes the process of education about medication and their side effects, lifestyle modification, and continuity of care.

Community Outreach Services: Is the area where services are provided for individual with certain medical conditions. These services can be provided in clinics and

Jail: Is a place of confinement for individuals who commit a crime. Individuals stay in the jail while they go through the legal process with the court system awaiting trial or sentencing, or release to home.

Inmates: Are individuals confined in the jail.

Chronic Disease: A disease state that is long-lasting or recurrent. Examples are HTN, DM, asthma, HIV, and mental illnesses.

Chronic Care Model: Is a framework for chronic disease, addressing ways of promoting health in individuals with chronic disease and healthy communities (Choucair & Palmer, 2004).

Chronic Disease management: Is the way to manage chronic disease in a health care setting or community-based clinic.

Continuity of care: Process by which the patient and health care provider work as a team in the continuing care management of the person to promote wellness.

Community–Based Outreach Center: Health care facilities or clinics outside of a hospital setting used to provide health serviced to the people in the community.

Fairfax Adult Detention Center: Is a place that houses state or county inmates.

Disease Prevention: A plan initiated by health settings and providers to prevent the occurrence of disease.

Wellness Promotion: Is the ability for the patient to participate in improving their health through education.

Quality Improvement: Is a continuous process that employs rapid cycles of growth.

Assumption and Limitations

The assumption in this quality improvement project was that the participants in the project would be honest in answering questions posed to them in the program. It was assumed that the target population would benefit from the proposed project by improving their use of community-based clinics, for the continuation of HTN treatment. The outcome was that former jail inmates understood that HTN is a chronic disease that requires continuity of care while in the community to prevent complications related to lack of treatment. The limitation of the project was that the project was limited to Fairfax County Jail inmates with HTN. HTN inmates that bond out of jail did not participate in the project.

Summary

This quality improvement project was important because it helps provide inmates with information needed to access care in community outreach clinics. Having more inmates returning Fairfax County Jail with report of continuity of care for HTN while in the community is a social change that is well needed in the way HTN inmates are cared for in the jail.

Section 2: Review of Scholarly Evidence

Introduction

Reviewing the scholarly evidence helped this project developer identify interventions in linking inmates with HTN to community-based outreach services prior to their release from jail. The databases that I searched for the project included peer-reviewed journals. I performed my search using Walden University Boolean search strings using CINAHL Plus with full text, PubMed, CINAHL & MEDLINE, Science Direct, Annual reviews, and ProQuest databases from 2003 to 2014. Search terms used were *HTN, HTN and jails, former jail inmates with HTN, HTN management and jail inmates, community care for jail inmates, follow up care after release from jail, health care services for inmates with chronic diseases, re-entry services for former jail inmates into the community, community clinics used by jail inmates, chronic care diseases, chronic care model, chronic care follow up for jail inmates,* continuity *of care for jail former jail inmates, linking jails to community-based clinics, and jail and HTN, linking former jail inmates to the community, transitional care for former jail inmates, health status, pre-release prisoners, older jail inmates, older jail inmates leaving jail, and former prisoners, quality improvement, quality improvement programs, improving quality care in jails, implementing quality improvement programs in jails, jails and quality improvement programs*. I found more than 70 articles related to the subjects, and I used 49 articles for this project. The literature that I reviewed for this quality improvement project showed that HTN is a major chronic health problem in jails. The literature also helped me identify factors that affect the inmate's ability to continue care

in the community after release from jail, and the literature provided me with the information needed for jails to identify and implement appropriate discharge planning and follow-up care for inmates in the community after release from jail. Research suggests that inmates with HTN leave jails and prison with no plan of care for continuity of care after they are released. What is unknown is how inmates follow HTN treatment and continue care after they are released from jail. This project advances nursing practice by addressing the inmates' community care needs on initial incarceration, and it provides inmates with education about HTN, treatment, and the information needed for a community-based follow-up care after release from jail.

Specific Literature

The global response to chronic diseases such as HTN remains inadequate, despite the growing epidemiologic and economic effect (CDC, 2013). The CDC held April 7, 2013, as World Health Day, and it designated high blood pressure (HBP) as the theme for the 2013 public health concerns. The CDC report indicated that HBP is preventable and that it is the leading cause of heart disease and stroke; further, HBP tops the list of morbidity and mortality causes worldwide (CDC, 2012).

Chronic conditions affect many jail and prison inmates. HTN is the leading chronic health condition affecting 18.8% of the 234,013 inmates studied from 2006 to 2007 in a Texas prison (Harzkle et al., 2010). The number of inmates with HTN was 3 times higher compared with inmates who had asthma, diabetes, ischemic heart disease, chronic obstructive pulmonary disease, and cerebrovascular disease (Harzkle et al.,

2010). A large number of federal, state, and jail inmates have HTN, compared with the general population (Wilper, Woolhandler, & Himmelstein, 2009).

Many factors prevent inmates from seeking health care while in the community after release from jail. Inmates in prison usually have a higher incidence of chronic conditions such as HTN, asthma, HIV, and liver disease, and ex-offenders meet serious hurdles in continuing health care in the community due to lack of insurance, limited availability of health care, and poor discharge planning (Kulkarni, Baldwin, Lightstone, Gelberg, & Diamant, 2010). With the significant number of chronic diseases in jails and prison, plans for follow-up care after release is almost not existent (Kinner, Streitberg, & Butler, 2012). Illiteracy, lack of health insurance, and the ability to follow up care are also factors that can affect a former inmate from seeking health care in the community (Kinner et al., 2012).

There is a lack of adequate chronic care treatment for inmates in and out of jail. (National Commission on Correctional Health Care, 2013). Jails not providing chronic care health care services immediately after release from prison increases the risk of cardiovascular complications in the lives of the former inmate, and puts inmates at risk of death 2 weeks after release from jail (Binswanger et al., 2007).

Jails and prisons are expected to care for inmates while incarcerated. Prisons and jails are encouraged to adhere to the nationally accepted clinical guidelines based on the health condition of the inmate, and provide services to inmates by linking them to community-based health care services prior to release from jails and prisons (NCCHC, 2013). Improvement for care while inmates are incarcerated and reentry into society is

considered necessary to improve the health of inmates. Jails and prisons must implement ways to address the health issues of the significant number of inmates who come to the jail with chronic conditions such as HTN (Wilper et al., 2009).

Inmates in the jails and prisons have a constitutional right to have their health care needs met, and standards of chronic care should be aligned with the same level of care provided to the general public (Heiss & Schoenly, 2014). Many correctional facilities do not have a chronic care management plan in place, which makes managing inmate with chronic care conditions difficult. Chronic diseases such as HTN are prevalent in the jail and prison setting, treating them appropriately can help reduce health cost and adverse complication (Heiss & Schoenly, 2014). Marks and Turner (2014) highlighted the concerns that the jails are not viewed as part of the health care delivery system. Jails in 2012 admitted 11.6 million inmates, and are liable to meet the health needs of inmates in their custody (Marks & Turner, 2014).

Jails and prisons face many challenges in being able to treat inmates with chronic conditions. The high turnover rates in jails make screening inmates challenging (Dumont, Brockman, Dickman, & Rich, 2012). The rise in the health care cost of the correctional system is forcing state government to either release inmates early or cut health services and education to reduce cost (Freudenburg, Daniels, Crum, Perkins, & Richie, 2005). More than one third of the inmate is released from jails within 3 months of incarceration, and the disruption in the health care of inmates with chronic diseases is a major challenge for this population (Freudenburg et al., 2005).

The incidence of HTN is higher in inmates compared to the general population (Justice & Health, 2013). The rate of HTN and other chronic diseases among inmates compared to the general population are significantly higher. The criminal justice systems that are not linked with community-based health care providers makes it hard for inmates returning home from jails and prisons to continue care while in the community. This lack of linking inmates with HTN care prior to release from jail or prison increase the risk of mortality to inmates in a society where access to care is already limited for this population (Justice & Health, 2013).

Individuals who have never been incarcerated are less likely to have HTN (Rabin, 2009). Prison inmates are likely to have HTN, compared to individuals who have never been incarcerated (Rabin, 2009). Lifestyles such as alcohol, drugs, obesity, and poverty are associated with the findings, and even after some lifestyle changes are made by some of the former inmates, they were still noted to have HTN at a rate of 60% compared those who have never been incarcerated (Rabin, 2009). Former inmates are noted to have a higher incidence of HTN and no medical care compared to those individuals who have never been incarcerated (Price, 2009).

Prisons and jails are encouraged to make changes in how they provide health care to inmates. The lack of proper health care in the jails and prison puts a burden on local communities and society for caring for those inmates coming out of jail or prison with significant health problems (Jacobi, 2005). The urge for disease prevention and wellness promotion is heralded as part of the overhaul changes in the prison systems (Jacobi, 2005). The reentry movement calls for community leaders, state and local officials, and

policy makers to reform the jail or prison movement by linking released inmates with community health care services to reduce the exacerbation of chronic conditions such as HTN, diabetes, and asthma (Jacobi, 2005).

The importance of health care providers in the jails and prisons to implement an appropriate plan of care for caring for inmates with HTN is encouraged and needed. Having a plan of care upon incarceration that includes discharge planning will improve the health of inmates, and reduce complication related to HTN (Bingswager, 2010). Once a chronic health condition is identified, a proper treatment plan of care must be initiated, as the facility is responsible for meeting the health needs of its inmates (Heiss & Schoenly, 2014).

Inmates with HTN returning to jail without treatment while in the community have a significant negative impact on the nursing profession, and society. The need for chronic care management is a major issue facing the United States health care system and is critical to health reform (Nash et al., 2010). Chronic medical conditions generally progress to other significant abnormalities because many inmates with chronic conditions such as HTN do not receive any health care, or most times receive inadequate care. (Nash et al., 2010).

Inmates with chronic health diseases leave the jail with the risk of experiencing significant health problems due to disruption in health care services (Wang & Wildman, 2010). Despite the concerns that human factors such as lack of insurance, and finances may be related to the reasons why former jail inmates with chronic diseases such as HTN discontinue care (Wang et al., 2008). The suggestion is that correctional facilities must

put discharge planning programs in place to link inmates with chronic diseases to community-based services prior to release from jail to improve health outcomes of former jail inmates (Wang et al., 2008).

There is a lack of partnership between jails/prisons and community-based health services (Wang, Hong, Samuels, Shavit, Sanders, & Kushel, 2010). Eighty six percent of the former inmates had no insurance prior to incarceration, and more than 70% had chronic conditions such as HTN, and only a few prisons release inmates to the community with medications, community-based care, or insurance (Wang et al., 2010). The lack of partnership between jails and prisons with community-bases public health services results in the lack of continuity of care for former jail and prison inmates (Fazel & Baillargeon, 2011). Health care providers in correctional settings should link inmates with community-based health services by planning discharge prior to release to the community (Fazel & Baillargeon, 2011).

The discontinuity of care when inmates are released from jail needs to be addressed. When inmates leave jails and go back to the communities, the burden of their health care is placed on local public health communities (Marks & Turner, 2014). Health care providers in the jail should be educated in the community-based services that are available to the inmates prior to release from jail to link them with services that will address their chronic care needs. Linking inmates to health services in the community prior to release from jail for continuity of care helps reduce health care cost to individuals and society (Marks & Turner, 2014).

The cost of health care will continue to rise if the continuity of care of former jail inmates is not addressed (Brown University, 2014). Experts call for the general public to pay attention to what's going on in prisons if they care about the health of the population, and the rising health care costs (Brown University, 2014). Linking inmates to community-based clinics prior to release from jail can lead to better medical and financial outcome (Brown University, 2014).

There are benefits when inmates with HTN are linked to community-based clinic prior to release. The benefit of linking inmates to community-based clinics after release from jail is based on the understanding that jails are part of the health care system (Butler, 2014). Jails that use health care services provided by the affordable care act (ACA) and health information exchange will make it easy to link inmates to community-based clinics (Butler, 2014). The use of these services will reduce duplication in care, and improve the health care services for former jail inmates, save costs, and have many inmates leaving jails with access to health care (Butler, 2014). According to Puisis (2013) 700,000 inmates are released from federal and state prisons and 12 million from local jails annually. Inmates are released without proper discharge planning. The need to have appropriate discharge planning for inmates with chronic care prior to release is cost effective to the communities, and eventually society (Puisis, 2013).

General Literature

Twenty five percent of inmates released from jail are affected with HTN and DM, and best practice preventative interventions are encouraged for inmates prior to releases for successful reintegration to society (Woods, Lanza, Dyson, & Gordon, 2013). There

are significant challenges associated with former inmate re-entry into the community. The challenges associated with re-entry of former jail inmates into the community are significant (Crayton, Ressler, Mukamal, Jannetta, & Warcick, 2010). Both men and women returning to the community from jail are less educated, lack employment skills, suffer from drug addiction, and many have mental and physical illness. Only a small number of the former jail inmates have their health issues adequately addressed while in jail, and a small number of neighborhoods receive a high number of former jail inmates, thereby putting significant financial burdens in these communities (Crayton et al., 2010). Jails that partner with community stakeholders will help resolve many of the re-entry challenges faced by former jail inmates by ensuring that their basic needs are met, and may also improve and increase funding for services (Crayton et al., 2010).

Identifying, and addressing the health needs of inmates prior to release is vital. Identifying the health disparities and health risks that affect an inmate's prior reentry into the community is important (Woods et al., 2013). William et al., (2010) wrote that 4.1% of inmates in the United States are over age 35, with a large number of elderly inmates leaving the jails and prisons with significant health and financial issues. Therefore, having programs that link inmates to medical and psychiatric services can help the reduce homelessness, and improve the lives of former inmates (William et al., 2010).

Successful re-entry programs for inmates returning to the community are vital in promoting the health needs of former inmates (CDC, 2013). Many correctional facilities understand the need to have a successful re-entry into society program for inmates (CDC, 2013). The CDC reports that correctional facilities face many challenges in providing

transitional services for the inmate prior to release and post release, therefore, impacts the health care needs of the former inmate. It is clear that changes need to take place to shorten the gaps that take place in transitioning inmates from the jails to the community (CDC, 2013).

Conceptual Model

The chronic care model (CCM) is used to help address ways that inmates with HTN are linked to community-based services while in the community. The CCM helps with chronic care management and improving practice. It is well suited to be used by nurse practitioners for chronic disease management at the individual or population level (Fiandt, 2006). Understanding self-management is important for inmates released from jail to help them with self-management of their chronic condition, confront and adhere the issues related to HTN treatment, follow-up care while in the community, and most importantly taking action for their illness to improve their health (Fiandt, 2006).

Chronic disease has high impact on the health industry. The CCM helps guide adequate chronic care services for patients. Nash et al. (2008) reports that this model is widely used in many chronic care conditions. The factors in this model include the healthcare system, delivery system design, decision support, clinical information system, self-management support, and the community. HTN is a lifelong disease that can be well managed with treatment and continuity of care. Therefore, the adoption and implementation of all the elements of the chronic care model in the care of HTN patients, with the use of evidence-based practice is important in promoting good health for inmates with HTN (Lewanczuk, 2008).

The five factors of the CCM were aligned to this project as follows. The jail medical chief fully supports the project, and approved the project developer to work with the community-based clinics to see that inmates are referred to the appropriate clinics prior to release from jail. The delivery system design and decision support factors were enhanced by the nurses referring inmates with HTN to the project developer for appropriate treatment, and plan of care. The clinical information system required that the inmates plan of care are well documented in the computer system, and are forwarded to community-based clinics as needed for continuity of care. Goals were set with the inmates during incarceration, and prior to release so that they have an opportunity to be involved in their care, and take control of their health using the self-management support. Finally, the project developer collaborated with clinics and other community sources to help meet the health needs of inmates after release from jail.

The CCM is significant in obtaining a positive result in patients with HTN and that other models are not sufficient to meet the needs of patients with chronic care disease. This plan touches on major areas such as the self-management and community factors that need to be addressed in inmates with HTN (Choucair & Palmer, 2004).

Summary

The literature identified barriers that affect HTN care in the jails and limitations that inmate's face in seeking health care services as they transition from jail to the community. The literatures revealed that there is a lack of access to care for inmates with HTN to continue care after they are released from jail. The literature also revealed that jails need to implement services that give inmates the opportunity to access community

based care services prior to their release from jail. Seeing inmates with HTN return to jail reporting that their last treatment for HTN was during their last incarceration is evidence that changes need to be made to improve the health of inmates with HTN. This project addressed the gaps in the lack of access to care for inmates in the community after they are released from jail.

Section 3: Approach

Introduction

The purpose of this quality improvement project was to teach inmates with HTN prior to release from jail about community-based outreach services for HTN management and continuity of care while in the community. The participants in this quality improvement project were limited to HTN inmates in the jail. Once incarcerated, the paper charts of inmates were referred to the project developer by the nursing staff for review. After the project developer reviews the charts, an initial visit was made by the project developer to the inmates with an invitation to participate in the project. The inmates were informed by the project developer that they would not be punished if they declined to participate in the project.

Program Design and Methods

This quality improvement project was initiated by the project developer when inmates with a history of HTN or elevated blood pressure were incarcerated. Paper charts of inmates with HTN were provided to the project developer for review by the correctional health nurses. The project developer obtained the inmate's health histories during the initial visit with inmates incarcerated with HTN. The inmates were project developer notified by the of the quality improvement project and were invited to participate in the project voluntarily. The implementation phase of the project were performed by the project developer doing one-on-one interviews with new and incarcerated inmates diagnosed with HTN after obtaining informed consent. The participants were informed about the purpose of the project, risk, and benefits related to

the project; what makes them eligible for the project; why the project was being done in the jail; what would happen during the project; and confidentiality. The participants were also informed that their participation in the project was voluntary and that they could terminate participation in the project at any time. The inmates were notified that a survey-questionnaire in English has to be completed on initial visit and if they returned to the jail within the 3 months of the project. All survey questionnaire responses were analyzed for completeness and accuracy.

Population/Sampling

Participants for this program were collected via a purposeful sample of all adult jail inmates incarcerated in the Fairfax County Jail with a history of HTN and those inmates diagnosed with HTN while incarcerated. The jail has a daily average of 1,200 inmates, with a 6-hour turnaround time for those inmates who were released on bond. The released inmates did not participate in the project. One hundred and fifty eight charts on inmates incarcerated with HTN were referred by the nursing staff to the project developer. Eighty eight (56%) of the potential participants were released prior to being invited to participate in the project. At the initial incarceration, the standard policy and procedure was followed by the medical staff, which included screening all inmates within 2 hours of incarceration. At this time, the inmate's health history was obtained, and inmates were referred to the appropriate provider for chronic conditions such as HTN, DM, asthma, HIV, and seizures. Inmates who do not come to the jail with medications were referred immediately to the doctors or nurse practitioners for evaluation. The demographics in the sample were adult inmates ages 18 years and older. The numbers of

inmates with HTN in the Fairfax County Jail ranged between 60 and 90 a month. The numbers of inmates with HTN that were incarcerated in the jail each month during the data collection process was between 30 and 50, and project developer approximately 40 HTN inmates are released each month. The total number of participants that this project developer intended to invite and participate in the project was 100.

The project developer had access to all inmates admitted to the jail with HTN or any blood pressure related issues, as it is the standard policy to provide health care services to inmates in the jail. The incentives for participating in the project focused on providing needed information and education for treatment intervention, and continued HTN treatment via community services. If the intervention is effective, there may be an increased number of HTN inmates returning to jail with ongoing treatment for HTN and follow-up care in the community. Inmates without HTN were excluded from the project. The inclusion criteria were inmates with HTN, who were homeless, jobless, lack health care insurances, and those inmates who stated that they could not afford to follow up for their medical care and treatment for HTN after release from jail.

Human Participants Protection

Participants in the project were informed about the purpose of the project, which is to provide education about HTN, and follow-up care in community-based clinics after release from jail. Participants were asked to sign the consent (Appendix A) if they chose to participate in the project. Participants were also notified that they will not be punished for declining to participate in the project. Each questionnaire was assigned a numeric value that linked the pre and post quality improvement questionnaire. The initial quality

improvement survey questionnaire was compared to the post-test HTN quality improvement questionnaire when the participant returns to the jail within the time frame of the project. Information is held in strict confidence by not letting other inmates know who participated in the project. Data that are obtained from the participants in the project is kept in the project developer's office, in a locked cabinet for a year. The project developer is the only individual with access to the data that is obtained from the participants in the project. The project information collected will be shredded after one year by the project developer.

Program Intervention

The implementation of the program started when the nursing staff referred inmate with HTN to the project developer based on HTN best practice guidelines, guided by the NCCHC. The equipment used during the project was blood pressure machines, computer, and stationary. The project activities included one on one education and counseling to all the participants with HTN in the quality improvement project. Once identified, the participants were counseled on HTN, medications and their side effects, counseled on the importance of follow up care after release from jail, and were given information packets with resources on community-based clinic for follow–up after release from jail. Intervention for post jail care was started on the initial visit by the project developer. Discharge medications were ordered and sent to the inmate’s property at the jail property section for those inmates whose release date were identified, or knew their release date after their initial visit so that the inmate will not stop medication treatment after release from jail. Prescriptions for 30 days’ worth of medication were given to the inmate during

the initial visit for the inmate to be able to have time to obtain medication while in the community, until the appointment for follow up in the community clinic is scheduled. The schedule is expected to be made by the inmate upon release from jail by using the community clinic information given to them on the initial visit.

Instrument Section

Participants completed a face to face 15 question HTN Quality Improvement Survey Questionnaire (Appendix B) developed by this project developer with yes and no answers on initial incarceration, after they were referred by the nurses in the medical section, and consented to participate in the project. The participants were also informed that a 8 question Posttest HTN Quality Improvement Questionnaire developed by the project developer with yes or no answers will be completed if they return to the jail within three months while the project is in progress. The pre and post quality improvement survey questionnaires were assigned numeric values unique to each of the participants that consented to participate in the project.

HTN Quality Improvement Survey Questionnaire

They HTN Quality Improvement survey tool identified the inmate's demographic data, history of HTN, prior treatment, and follow up care to identify the participant's needs prior to release from jail (Appendix B). The survey questions are whether the inmate has a known history of HTN, take medications, whether they come to the jail with their medications, and whether they have medications at home. The yes or no responses helped this project developer identify needs of participants in the project. (See Appendix B for the HTN survey questionnaire).

Posttest HTN Quality Improvement Questionnaire

The Posttest HTN Quality Improvement survey tool was used to determine whether the participant continued treatment and follow up care for HTN in the community after their last incarceration (Appendix C). The posttest questions determine whether the inmates continued care while in the community using community-based health care services for their HTN. The yes or no responses helped this project developer identify whether a change in behavior, knowledge, or attitude has taken place. (See Appendix C for post-test survey questionnaire).

Data Collection

After approval by the medical chief at the Fairfax County adult detention center and IRB approval from Walden University, the project implementation phase was initiated. During the initial visit with the inmates at the jail, and the inmate's approval to participate in the project, the participant was given the opportunity to complete the face to face HTN Quality Improvement Survey Questionnaire in the presence of the project developer, in the project developer's office. After the questionnaire was completed, the project developer reviewed the answers with the participant; checking the questionnaire for accuracy and completeness. The participants were educated about HTN, medication and side effects of the medication, community-based services in the area that inmate plans to stay after release, and the importance continuity of care after release from jail. If a release date was not identified, prescriptions, HTN education materials, and community follow up resources were given to the participants to be used for continuity of care in the community after release. When the release date was identified, medications were ordered

through the pharmacy and sent to the participant's property including prescriptions and community resource materials.

The participants also completed a face to face 8 question Posttest HTN Quality Improvement Questionnaire developed by the project developer with yes or no answers if they return to the jail within three months while the project is in progress. The participant's 15 question questionnaire was retrieved from the file cabinet, and compared to the 8 question survey questionnaire for accuracy. The project developer reviewed the pre and post incarceration questionnaire to identify whether the participant had follow up care while in the community after their release from the Fairfax County Jail. The survey data received from the participants are reviewed by the program developer, and the data is entered in a database and coded using numeric values. Primary data were collected over a six month period by the program developer at the Fairfax County Jail.

Program Evaluation

The data collected were analyzed using the logic model outcome based program planning and evaluation process. The reliability and validity of the data are identified, by reviewing all questionnaires for completeness and accuracy. Program evaluation is important to see if the intended outcome of the program is met. If the health of the target group improves with follow up, and continuity of care, then the cost of health care will be minimized, and the complications related to CD are stalled (Hodges & Videto 2012). The pre and post HTN survey questionnaire were compiled, compared, and summarized to assess the changes that took place in the participants after education about HTN follow up and care while in the community.

Bell, Pestka, and Forsyth (2007) utilized the outcome evaluation model to determine whether continuing education makes a difference. Bell et al., defined four levels of evaluation as process, content, outcome, and impact evaluation. Outcome evaluation is defined as a process whereby change is measured after learning is initiated. Outcome based evaluation is used in education, policy, and social sciences. The origin of outcome based evaluation came about when questions such as, has the program developed made a difference, how did the program make a difference in the lives of the target population. Outcomes evaluation attempts to identify if the target population is aware, uses, and adapt to the program. The impact evaluation is the number of inmates that return to jail with or without follow up care and continued treatment after being educated about HTN, and linked to community outreach services for follow up care.

Summary

The overall purpose of this quality improvement project was to educate inmates with HTN incarcerated in the jail about HTN, the medication they take, and the importance of community-based follow up care after they are released from jail to determine whether they would continue their treatment for HTN once released. To accomplish this goal, a pre and post HTN survey instrument was developed, and used on initial visit with inmates with HTN whose paper charts were referred to the project developer. Once the inmates consented to participate in the project, the project began.. The inmates completed a 15 question HTN survey on the initial visit. They were also notified that they will be asked to complete an 8 question, post HTN survey if they return to the jail while the project was still in progress.

Section 4: Findings, Discussion, and Implications

Introduction

This quality improvement project asked whether inmates with HTN, when provided with education about HTN, given release medication, prescriptions, and linked to community outreach services for HTN follow up prior to release from jail, would continue HTN treatment and use the community-based clinics for HTN follow up care once released from jail. Inmates incarcerated in the Fairfax county jail with a history of HTN, and those inmates diagnosed with HTN while incarcerated participated in the project.

The aim of this project was to provide inmates with education and community support for HTN, so that after they were released from jail, they would continue with their treatment for HTN by using available community services. The objective was to assess whether inmates continued with HTN treatment after release from jail. This outcome, was measured by whether inmates who were in the program and re-incarcerated reported that they used community services for management of HTN. The hypothesis was that inmates who participated in phase 1of the program, returned and reported continuing treatment for HTN and follow up care during their time in the community. This project found that although there were only two subjects in the project released and re-incarcerated during the project period, there was 100% compliance with their continuing treatment for HTN and follow up care during their time in the community.

Evaluation/Findings and Discussion

Phases of Data Collection

The project was conducted in two parts over six months, with three months allocated to phase 1 data collection, and 3 months for phase 2 data collection. During the first phase, subjects were screened for inclusion into the project. Hypertensive inmates were invited to participate in the project and enrolled, after which data was collected. The second phase was a 3 month period of data collection where follow-up data to determine the stated outcome was collected.

Sample Size

A total of 158 inmates were incarcerated during the six month term of the project. Eighty-eight of the inmates were released prior to being invited to participate in the project. Seventy inmates (44%) referred were invited to participate in the project. Sixty-seven inmates (42%) consented to participate in the quality improvement project. Three male inmates (2%) declined to participate in the project. Each inmate meeting the program criteria was invited to participate in the project by signing a consent form they indicated their voluntary consent to participate. Each participant had unique numeric values assigned to their data collected to protect confidentiality. Thirty-seven (55%) participants that participated in the initial phase of the data collection process were released by the end of the first phase. Two male participants returned to the jail during phase 2 and completed the data collection for phase 2.

Demographic Data Phase 1

Demographic data were collected from the 67 participants during phase 1, and the results are depicted in table1. Eighty-four percent of the subjects were male, and 16% female. By race almost half of the participants were black, 37% were white, and 12% were

Hispanics. The ages of the participants ranged from 18 -80, and the mean age was 49. Sixty-seven percent of the participants were between the ages of 41 and 60 years. Demographic characteristics of participants that consented to the project are presented in table 1.

Table 1

Phase 1: Demographics of Consented Participants in the Project by Sex, Race, and Age

Characteristics	Frequency	%	Male	Female
Race				
White	25	37	20	5
Black	33	49	28	5
Hispanic	8	12	7	1
Asian	0	0	0	0
Other	1	2	1	0
Gender				
Male	56	84		
Female	11	16		
Age (y)				
18–20	2	3	2	0
21–40	18	27	16	2
41–60	45	67	37	8
61–80	2	3	1	1
80–95	0	0	0	0

Demographic Data Phase 2

The participants that returned to the jail during the second phase of the project completed the project. Phase 2 demographic results are depicted in table 2. Two black males with a mean age of 44.5 years were re-incarcerated during the second phase of the program and completed the Phase 2 data.

Table 2

Phase 2: Demographics of Participants Who Completed the Project by Sex, Race, and Age

Characteristic (*N* = 2)	Frequency	Percentage
Sex		
Male	2	100
Female	0	0
Race		
White	0	0
Black	2	100
Hispanic	0	0
Asian	0	0
Other	0	0
Age (y)		
18–20	0	0
21–40	1	50
41–60	1	50
61–80	0	0
80–95	0	0

Note: *N* = number of participants.

Phase 1 Data

Pre-HTN Questionnaire Questions 1-5

Hypertension history and care

Forty-eight of the male participants, and 10 female participants were incarcerated with HTN. Eight males and 1 female were incarcerated with no history of HTN. Thirty – two males and 9 females were taking medication for HTN. Sixteen males and 2 females did not take HTM medication. Nine males and 5 females came to the jail with their HTN medication. Thirty-nine males and five females did not come to jail with their HTN medication. Seventeen males, and 4 females had their HTN medication at home, 17 males, and 1 female did not have their HTN medication at home. Twenty-eight males and

8 females took their HTN medication the day prior to incarceration, twenty males, and 2 females did not take their HTN medication the day prior to their incarceration. The descriptive characteristics of how the consented participants responded to the HTN Quality Improvement Survey Questionnaire questions 1-5 are presented in Table 3.

Table 3.

Phase 1 *Responses by Consented Participants to HTN Quality Improvement Survey Questionnaire questions 1-5.*

Characteristics	(*N* =67)	Male *n* = 56	Percentage	Female *n* = 11	Percentage
1. Do you have high blood pressure?	Yes No N/A	48 8 0	86 14 0.0	10 1 0	91 9.0 0.0
2. If yes, are taking medication for HTN?	Yes No N/A	32 16 8	57 29 14	9 2 0	82 18 0.0
3. Did you come to the jail with medications?	Yes No N/A	9 39 8	16 70 14	5 5 1	45.5 45.5 9.0
4. If you did not come with medications, do you have them at home?	Yes No N/A	17 17 22	30.5 30.5 39	4 1 6	36 9.0 55
5. Did you take your HTN medication the day before incarceration?	Yes No N/A	28 20 7	50 36 13	8 2 1	73 18 9.0

Note: *N*: = number of participants. *N/A* = not applicable. *n*= is the number of male and female participant responses to each question.

Pre-HTN Questionnaire Questions 6-10

Continuity of care, past incarceration

Fourteen males and 1 female had not taken their HTN medication in over a month. Sixteen males and 6 females had been treated for HTN at the jail prior to their current incarceration. Twelve males and 1 female were told they had HTN in the jail. Twelve males and 5 females continued HTN treated after their last release from jail. Four males and 1 female did not continue treatment for HTN after their last release from jail. Thirty-two males and 8 females have access to care in the community, while 24 males and 3 females did not have access to care in the community. The descriptive characteristics of how the participants responded to the pre-test HTN Quality Improvement Survey Questionnaire questions 6-10 are presented in Table 4.

Table 4.

Phase 1 *Responses from Consented Participants to Hypertension (HTN) Quality Improvement Survey Questionnaire questions 6 -10*

Characteristics	(*N* = 67)	Male *n* = 56	**Percent**	**Female *n* = 11**	**Percent**
6. Has it been over a month Since you last took HTN Medicines?	Yes No N/A	14 31 11	25 55 20	1 8 2	9.0 73 18
7. Have you been treated for HTN at this jail before?	Yes No N/A	16 40 0	29 71 0.0	6 5 0	55 45 0.0
8. Were you told you have HTN in this jail?	Yes No N/A	12 44 0	24 76 0.0	1 10 0	9.0 91 0.0
9. After you were released from jail, did you continue treatment?	Yes No N/A	12 4 40	21 8.0 71	5 1 5	45.5 9.0 45.5
10. Do you have access to medical care in the community?	Yes No N/A	32 24 0	57 43 0.0	8 3 0	73 37 0.0

Note: *N*: = number of participants. *N/A* = not applicable. *n*= is the number of male and female participant responses to each question.

Pre-HTN Questionnaire Questions 11-15

Homelessness, lack of insurance, and community based services

Eighteen males and 4 females were homeless. Thirty-nine males and 6 females did not have health insurance. If given a prescription, 54 males and 10 females would be able to afford their prescription, 2 males and 4 females were not able to pay for their prescriptions. Forty-six males and 8 females needed information for community based

clinics for follow-up care after release from jail, and all of the participants that participated in the project answered yes to follow up HTN care in the community if they were linked to a clinic. The descriptive characteristics of how the participants responded to the pre-test HTN Quality Improvement Survey Questionnaire questions 11-15 are presented in

Eighteen males and 4 females were homeless. Thirty-nine males and 6 females did not have health insurance. If given a prescription, 54 males and 10 females would be able to afford their prescription, 2 males and 4 females were not able to pay for their prescriptions. Forty-six males and 8 females needed information for community based clinics for follow-up care after release from jail, and all of the participants that participated in the project answered yes to follow up HTN care in the community if they were linked to a clinic. The descriptive characteristics of how the participants responded to the pre-test HTN Quality Improvement Survey Questionnaire questions 11-15 are presented in 5.

Table 5.

Phase 1 *Response by Consented Participants HTN Quality Improvement Survey Questionnaire Questions 11-15*

Characteristics	(*N* = 67)	Male *n*=56	Percent	Female *n*= 11	Percent
11.Are you homeless?	Yes No N/A	18 38 0	32 68 0.0	4 7 0	36 64 0.0
12.Do you have health insurance?	Yes No N/A	17 39 0	30 70 0.0	5 6 0	45 55 0.0
13.If given a prescription, will you be able to afford the HTN medication?	Yes No N/A	54 2 0	96 4.0 0.0	10 1 0	91 9.0 0.0
14.Do you need information for Community based clinic follow up?	Yes No N/A	46 9 1	82 16 2.0	8 3 0	73 27 0.0
15.If you are linked to a community clinic, will you follow up?	Yes No N/A	56 0 0	100 0.0 0.0	11 0 0	100 0.0 0.0

Note: *N* = number of participants. *N/A* = not applicable. *n* = is the number of male and female participant responses to each question.

Phase 2 Data

Re-incarceration, lack of income, continuity of care, homelessness

Sixty-seven participants consented to participate in the projected and completed the survey questionnaires in phase 1. Thirty-seven participants that consented to the project were released by the end phase of 1. These participants had the potential to participate in phase 2 of the project.

During phase 2 of the project, 2 subjects returned to the jail, and completed the 8 question posttest HTN survey questionnaire. The two participants that participated in phase 2 of the project continued taking their medicines since their release from jail. They both followed up with their doctor in the community after they were released from jail. Both participants were still homeless when they were re-incarcerated. The descriptive characteristics of how the participants responded to the posttest HTN Quality Improvement Survey Questionnaire questions 1-4 are presented in table 6.

Table 6.

Phase 2 *Responses by Consented Participants HTN Quality Improvement Survey Questionnaire question 1-4*

Characteristics	(*N*=2)	Male *n* = 2	Percent	Female *n* = 0	Percent
1. Have you been taking your HTN medicines since release from jail?	Yes No N/A	2 0 0	100 0.0 0.0	0 0 0	0.0 0.0 0.0
2. Did you see the doctor or go to the clinic for follow up care?	Yes No N/A	2 0 0	100 0.0 0.0	0 0 0	0.0 0.0 0.0
3. If not, Did you make an appointment for follow up care?	Yes No N/A	0 0 2	0.0 0.0 100	0 0 0	0.0 0.0 0.0
4. Are you still homeless?	Yes No N/A	2 0 0	100 0.0 0.0	0 0 0	0.0 0.0 0.0

Note: *N*: = number of participants. *N/A* = not applicable. *n*= is the number of male and female participant responses to each question.

Post HTN Questionnaire questions 5-8

The 2 male participants were still without a job when they were re-incarcerated back into the jail. They both filled the prescriptions given to them prior to their release from jail. They were both able to pay for their prescriptions, and their prescriptions were not filled by a community based clinic free of cost. The descriptive characteristics of how

the participants responded to the post-test HTN Quality Improvement Survey

Questionnaire questions 5-8 are presented in table 7.

Table 7

Responses by Consented Participants HTN Quality Improvement Survey Questionnaire Question 5-8

Characteristics	(*N*=2)	Male *n* = 2	Percent	Female *n* = 0	Percent
5. Are you still without a job?	Yes No N/A	2 0 0	100 0.0 0.0	0 0 0	0.0 0.0 0.0
6. Did you fill the prescription given to you prior to release from jail?	Yes No N/A	2 0 0	100 0.0 0.0	0 0 0	0.0 0.0 0.0
7. Were you able to pay for the prescription?	Yes No N/A	2 0 0	0.0 0.0 0.0	0 0 0	0.0 0.0 0.0
8. Was the prescription filled by a community-based clinic free of cost?	Yes No N/A	0 2 0	0.0 100 0.0	0 0 0	0.0 0.0 0.0

Note: *N*: = number of participants. *N/A* = not applicable. *n* = is the number of male and female participant responses to each question.

Summary of **Discussion of Findings**

The purpose of this quality improvement project was to educate inmates about HTN and community based follow up care after release from jail to assess how many

inmates continued with community HTN care after they are released from jail. The subjects that returned after participating in phase 1 of the project, showed in phase 2 upon re-incarceration that they followed the information provided them about HTN and continuity of care after release from jail. The outcome of this quality improvement project addresses the lack of continuity of care for HTN inmates after they are released from jail. The difficulty of conducting a quality improvement project with inmates in a jail is that inmates are in and out of the jail with hours of incarceration, and return to jail is usually unexpected. Many of these inmates are in and out of jail. Many return to jail, and are released within 6 hours. It is clearly difficult to identify the effectiveness of this quality improvement project as the number that returned and participated in phase 2 of the project is small. On the other hand, the fact that the 2 participants that returned to the jail continued their treatment, and access care in the community after leaving the jail, identify that the quality improvement project was effective for these two participants, and the expected outcome was achieved for them.

Lack of continuity of care is a major risk factor for inmates. The need to educate inmates about their HTN and continuity of care is vital. Forty-eight males and 10 females were incarcerated in the jail with a history of HTN, 12 males and 1 female were diagnosed with HTN at incarceration. Only 9 males and 5 females came to the jail with medications upon incarceration to the jail. All the participants were taking medication for HTN by the time they participated in the project. Inmate reentry into the community after release from incarceration is a significant societal problem, and inmates being released from jail to the community have multiple chronic medical conditions, and are in poor

physical health (Woods et al., 2013). Educating inmates about their health conditions, and continuing care in the community, is recommended to help improve the health of inmates after release from jail. The need for inmates to be proactive about their health is an important factor in helping promote disease prevention, wellness promotion (Woods et al., 2013). The number of inmates that were incarcerated with a history of HTN was higher compared to those inmates that were diagnosed with HTN after incarceration into the jail. Many of the inmates with HTN were incarcerated without medication, and did not take medication while in the community. Due to the lack of continued treatment after release from jail, inmates need to be released from jail with medication to prevent discontinuation and treatment, and thereby having inmates return back to jail reporting lack of treat since last incarceration.

Access to care is a major barrier to care as identified in this project. Forty-three (43%) of male participants that consented to the project reported not having access to medical care in the community, and 37% women that consented to the project lacked access to care in the community. Eventually, most prisoners return to their community after release from incarceration, and the release poses risks for the former inmates, and cost to society (Rich, Wakeman, and Dickman, 2011). The incidence of death for inmates post release from incarceration is high in the first 2 weeks after release; therefore, appropriate discharge planning for inmate health needs is crucial prior to release from jail (Rich et al., 2011). Few inmates with HTN are released from jail with controlled blood pressure readings, and the need to have former inmates linked to health services in the community is vital in preventing complications after release from incarceration (Fox,

Anderson, Bartlett, Valverde, Starrels, and Cunningham, 2014). Though access to care is necessary for inmates with chronic conditions after release from jail, presence of community care clinics are not enough to help meet the medical needs of former inmates to achieve adequate health outcomes (Fox et al., 2014). Starting discharge planning when inmates with HTN are incarcerated by connecting them with community based clinics will help reduce the incidence of inmates with HTN continuing care after release from jail. Inmates with HTN who lack access to care in the community do no treat their HTN thereby increasing the risk for complication related to nontreatment and poor health outcomes.

Educating inmates about their HTN, and continuity of care after release from jail is vital in how inmates perceive their health. Thirty-seven of the 67 inmates that consented to the project and completed phase one, were released by the end of phase one. Only 2 of the consented participants returned to jail, and completed the project. The number of inmates leaving jails and prisons continues to rise (Kinner and Wang, 2014). Kinner and Wang reports that the number of prisoners in the United States exceeds 10 million, with over 30 million inmates released from jails and prisons every year. The need to improve the health of inmates after release from jail remains is a human rights issue. Inmates should have access without discrimination as to the health outcomes of inmates after release from jail is poor (Kinner and Wang, 2014). Understanding that the health of prisoners is a public health problem, and when inmates are not treated for their chronic conditions after release from jail it affects the well-being of society (Kinner and Wang, 2014). Educating inmates about their HTN, giving them medication and

information about community follow up care information prior to release from jail, help inmates gain understanding about the need for them to continue care after release from jail.

Outside of the jail, the other source of access to health care services for former jail inmates is the emergency room. The two participants that completed the project followed up care in the community. Inmates when not linked to services in the community after release from jail or prison access care through emergency rooms costing society over $10 million a year. Even with the use of emergency rooms, the chronic conditions of former jail inmate remain poorly managed (Kinner and Wang (2014). Correctional health facilities are encouraged to not only have appropriate screening of inmates upon incarceration in jail or prison, but they should also care for chronic diseases during incarceration and link inmates with community-based health care centers prior to release into the community (Binswanger, Redmond, Steiner, and Hicks, 2011). Many correctional facilities send inmates home with 2 weeks supply of medication for crucial health conditions, but lack of insurance leave these individuals seeking health care in emergency rooms (Rich et al., 2011). Eighty-two percent male participant and 73% female participants responded that they need information about community-based clinic for follow up. One hundred percent of male participants and 100% of female participants respond that they will follow-up with community-based clinic if they are linked to care. This means that the need to provide HTN inmates the information that links them to community based services prior to release from jail is imperative. Addressing the health needs of HTN inmates on incarceration, including discharge planning help inmate

understand the importance of treating their HTN, and gives jails the opportunity to plan for release medication and access to care prior to the inmate's release from jail.

One hundred and fifty eight charts of potential participants were referred to the project developer containing HTN inmates incarcerated in the first phase of the data collection process. Eighty eight (56%) of the inmates were released prior to being invited to participate in the project. The release of inmates from jail is based on where the inmates are in the legal process (Spaulding, Perez, Seals, Hallman, Kavasery, Weiss, 2010). Knowledge of the pattern of release of inmates in jails can help in transitioning care for into the public health system (Spaulding et al., 2010). Inmates incarcerated in Fairfax County jail must be reached within 24 hours by the local health department for any public health intervention, and only one fourth of inmates at the Fairfax County jail inmates benefit from behavioral health promotion services from the local health department due to the LOS (Spaulding et al., 2010). Inmates most times do not know when they will come to, or leave jail. Due to the unpredictable nature of inmates' time in jail, discharge planning for HTN inmates should start on initial incarceration. Therefore, having HTN inmate medications and community based clinic information ready for unexpected release will help reduce the number of inmates that leave the jail without medication and community based clinic follow up information.

There is disparity in race, sex, and age with incarcerated inmates. In this project, the majority of participants were older black males. It is reported that about 33% African American (AA) men experience prison in their lifetime, compared to 17% Latinos, and 6% white (Binswanger et al., 2011). In 2008, 3,000 per 100,000 AA males were in

prison, compared to 1,200 Latino men and 487 white males (Binswanger et al., 2011). The disparity in the racial gap of inmate incarceration continues to grow (Dumont, Gjelsvik, Redmon, Rich, 2013). With almost 12 million inmates incarcerated in jails in 2011, 87.3% were male, with more blacks and Hispanics, compared to their white counterparts (Dumont et al., 2013). The rate of incarcerated males is 14 times greater than women, and black women are incarcerated 3 times more than that of their white female counterparts (Sipes, 2012). Low wage and high unemployment rates play a significant role in the high number of African American male incarcerated in jails and prisons, creating significant health and social concerns (Rich et al., 2011). Inmates age 55 and over are rising, and consist of 10% of the jail inmates (Chodos, Ahalt, Cenzer, Myers, Goldenson, Williams, 2014). The disparity in age and race is significant in the jail, and the number of blacks is higher compared to whites. The number of Hispanics and Asians with HTN are less compared to blacks and whites. Race, age and sex for inmates in jail remain a significant factor in jails and inmates.

There are more male inmates in the jail, than there are females. The number of males that participated in the project were greater compared to the females. The disparity in the project with the number of male and female participants relates to the fact that Fairfax County jail has a 10% female population. Eleven women consented to participate in the project. The number of black and white female that participated was the same. The percentage of males in jails and prisons is higher, but the rate of women in jails is prisons is steadily rising (Sipes, 2012). There has been a fivefold increase in women incarcerated in the United States in1980 to 2009 (Boutwell and Freedman, 2014). According to Dinkle

and Schmidt (2014) incarcerated women need to be educated about their chronic health condition, to help reduce the risk of complications. There is a challenge to educate women incarcerated women about their health remains a significant challenge and efforts are being made to help close the gap in providing health education to women prior to release from incarceration. Length of stay is considered one the major barriers that affect educating women about their chronic health condition, but the need to receive education about disease prevention and wellness promotion on condition such as high blood pressure was important to incarcerated women (Dinkle and Schmidt, 2014). Despite the rise of women in the jail with chronic conditions, the number of males in the jail compared to females remains higher. The female inmate population at the Fairfax county jail is 10% therefore, this is consistent with the number of male and female subjects that participated in the project.

Lack of job and health insurance are the major barriers that affect inmates with HTN to continue and seek health care services after release from jail. Poor health and lack of insurance coverage are major challenges for a large number of inmates leaving jails and prisons (Cuellar and Cheema, 2013). Seventy percent of male participants and 55% of female participants who consented to the project reported no insurance. Fifteen of the consented participants with HTN had not taken their HTN medication in over a month prior to their incarceration. According to Cuellar and Cheema as the number of prisoners in the United States continues to grow, so does the number of inmates that are released from jails and prison. These inmates when out in the community are without insurance, in poor health, and chronic condition such as HTN is higher in this population as compared

to the general population. Despite expected barriers for many inmates leaving jails and prisons regarding obtaining insurance coverage, it is suggested that correctional facilities put practices in place that will get inmates aligned with Medicare insurance if eligible, or state insurance exchanges with the affordable healthcare insurance (ACA) to help promote the health of inmates as they re-enter into their communities (Cuellar and Cheema, 2013). Poor health status seen among inmates and minorities is worsened with incarceration, and it is worsened after release from jail and prison due to lack to continuity of care as inmates transition back into their communities as inmates leaving jail and prison have a higher rate of chronic conditions such as HTN (Binswanger et al., 2011). Lack of insurance and poor health is a major issue for inmates. Education, and planning services for inmates prior to release from jail will help reduce lack of treatment, improve the health of inmates, and aid inmates with the information they need to continue HTN care in the community after they are released from jail.

Homelessness is a significant issue with inmates coming to the jail. Thirty-two percent of the male inmates and 36 % of the female participant that consented to the project reported being homeless. A substantial number of inmates in the jails are homeless, have a high rate of HTN, and other chronic diseases, and their length of stay in jails is almost double that of a non-homeless inmate, and (Zlotnick, Zerger, Wolfe, 2013). Most homeless persons are without health insurance, have higher rates of chronic diseases, and being homeless makes them vulnerable to poor health (Zlotnick et al., 2013). For many inmates leaving jail, the use of the emergency rooms is their only source of obtaining health care services, and homelessness was the underlying cause reported for

the use of acute care settings (Chodos et al., 2014). Homelessness is a significant barrier as to whether inmates access and continue care. Homelessness remains a significant barrier that affects how inmates seek care after release from jail. This vulnerable population should be provided resources needed to continue HTN care in the community after they are released from jail.

Implications

Participants in this project have been exposed to a basic understanding of their medical condition, and what needs to be done to prevent interruption of care, most importantly, continuity of care in the community. The goal to have each inmate with HTN seen on initial visit, educated on HTN, provided medication in the jail, and upon release should become part of the plan of care for every HTN incarcerated inmate. Identifying the need for linking inmates to community based services, and being provided follow up information prior to release will improve the health of the inmates, and reduce disruption of treatment and through continuity of care.

Policy

Utilizing the DNP Essential 1 Scientific Underpinning for Practice, DNP Essential 11: Organizational and systems Leadership for quality Improvement and Systems thinking & V: Health Care Policy for advocacy in care by using the chronic care model. This can be achieved by getting policy makers involved in funding services for community-based health centers that work with the homeless population, especially those inmates recently released from jail. Engaging with community health workers, policy

makers, and any other stakeholders will be beneficial to the help improve the needs of the target population.

Practice

The initiation of this project has changed the way inmates with HTN are provided care in the jail. This quality improvement project will help inmates coming to the jail with HTN have some form of education about HTN, treatment and information on community based care services on their initial incarceration to the jail. The change is evident as the small sample of subjects that completed the project followed all the information given to them prior to release from jail.

Research

Keeping track of HTN inmates returning to the jail with or without the continuation of treatment and follow up care will be an appropriate research project. Homelessness is noted to be a significant issue for inmates in the jail with HTN. Once released from jail, the concern about shelter coupled with chronic diseases such as HTN can be stressful, and increase the risk of complication due to lack of treatment. A project to identify the cause and effect of homelessness in inmates, identify services that are available to address the health care needs, and education services that can be made available to them addressing disease prevention and wellness promotion.

Social

The implementation of this project is social change for inmates incarcerated at the Fairfax County jail. HTN inmate leaving the jail with medications or prescription for HTN medication, and education about HTN, with follow up services is a well needed

social change. Prior to the implementation of this quality improvement project, inmates were released from the jail with no medication or information on where to go for community based follow up care. Now, inmates knowing that they can be provided medications and prescriptions prior to release from jail is social change. Inmate also requesting release medications prior to their anticipated release from jail is a social change. Identifying the barriers that HTN inmates face in seeking health care while in the community help address and promote change in how inmates are released from jail. The implementation of this quality improvement project helped improve the care of inmates with HTN, and reduced the number of inmates leaving jail without out continuity of care in the community. When inmates who participated in the project request release medication prior to their release from jail, this is a positive outcome. The greatest social change with this project is the fact that future inmates with HTN entering the jail will be seen immediately upon incarceration, educated about HTN and the importance of community based follow care after they are released from jail. This is a model that will improve the health outcome of this vulnerable population.

Project strengths and limitations

Strengths

Inmates who participated in the project were educated about HTN, treatment, and the importance of continuity of care after release from jail upon incarceration to the jail. This was the greatest strength of this project. Even though inmates that were released after the initial phase of the project did not return to complete the project so it is not known whether they followed up with their community HTN care. The fact that they left

with the knowledge of their condition, and knowing the importance of why it is necessary to seek care is a social change. Before this project, many inmates leave jail without the education needed to understand their condition, and the importance of continuation of treatment, and follow up care. This project has given the developer the opportunity to improve services in the jail by addressing the health issues of inmates incarcerated with HTN upon incarceration, and start discharge planning on initial visit to ensure that the health needs of HTN inmates are met at the jail, with the focus on continuity of care in the community prior to release. This project identified that educating inmates about HTN and the importance of follow up care was vital in helping inmates take control of their health.

Limitations

The size of consented participants that completed the project was small. The time frame for the follow up period was also a limitation in the outcome of the post HTN survey participation. The revolving nature of inmates returning to jail cannot be determined, therefore, the project developer cannot determine if or when inmates will return to jail. Inmates with HTN who were released within the six hour turnaround time, missed the opportunity participate in the project; get the education on HTN, treatment, and the needed information for continuity of care after release from jail.

Recommendations for remediation of limitations in future work

The project developer will continue the work started with this project by educating HTN inmates who are incarcerated in the jail on HTN, medication, and continuity of care on initial incarceration in the jail. Discharge planning will be started

for all HTN inmates upon incarceration. Implementing and providing an HTN education program that includes education about HTN, in regards to what inmates should know, do, and where to follow-up community based clinics for all inmates incarcerated with HTN will be implemented. This will help educate and guide inmates with HTN. Homelessness and lack of insurance is a significant deficit in the inmate population, and further research is warranted to see how these health needs can be addressed.

Analysis of self

As scholar

As a scholar the growth that I have achieved going through this process has improved my professional abilities in the way I practice and provide care to inmates in e jail setting. I realize that I am not only a nurse practitioner, but an advanced practice nurse. My desire to educate nurses, and help change nursing practice are intensified with the process of going through the DNP program, by sharing the gained knowledge with my peers in the clinical and the scholastic setting. I intend to continue teaching nurses and patients to help improve the practice of nursing while providing quality care to the population served.

As practitioner

As a practitioner, the way I practice in the jail setting has also changed due to the level of expertise I have been able to attain as I transition from a doctor of nursing student, to a doctor of nursing practice. Identifying that discharge planning start at the first visit with the inmate is transformational for this population. Understanding that it is my responsibility as a health care provider that inmates still need care when they leave

the jail, is a growth for me as a practitioner. This process has helped me understand that my duty to the population I serve extend out of the walls of the jail. Realizing that many inmates will probably not continue treatment and follow up care when they leave the jail is realized, but knowing that if only one inmate when given the information needed, and linked to a community based health care service prior to release from jail will continue to follow care in the community, is a social change.

As project developer

As a project developer, the feeling of accomplishment is unbelievable. Knowing that the project will help change the way other jails provided services for inmates with HTN, especially in the area of continuity of care is a plus. The ability to do other projects of interest is heightened with the intense knowledge acquired from the project. The rigor one has to endure to be called a project developer is so extensive, that the desire to do another project though daunting, will be worthwhile.

The way this project developer practice as a provider has changed. The greatest change for this project developer is the facts that discharge planning will start as inmates with HTN enters the jail. Utilizing the DNP Essential: VI. Interprofessional Collaboration for Improving Patient and Population Health Outcomes to consult with, and assume leadership skills in collaborating with intraprofessional, and interprofessional teams outside the jail to improve the possibility of inmates with HTN leaving the jail being linked to providers in the community-based health clinics.

This project will open doors in addressing the importance of why jails should start discharge planning the day inmates are incarcerated in the jail. The fact that inmates are

in and out of jail so fast, makes it imperative that discharge planning be part of the initial assessment when inmates are incarcerated. Therefore educating inmate with HTN regarding the importance of continuing treatment, and follow up care will help guide inmates to understand the importance of their chronic condition. A major implication drawn from this project is that the inmates that participated in the initial phase of the project were pleased to be given the time, and be educated about HTN, with the thought that someone cares about their health.

Summary and conclusions

HTN is a major chronic condition that affects inmates coming to jail. Many inmates in the Fairfax County jail have not taken their blood pressure medication since their last incarceration. Educating inmates about HTN, continuing their medication, and the continuity of care available after release from jail is vital for the health of this population. Many jails and prisons do not have inmates linked with community based clinics prior to release from incarceration. This practice leaves inmates with no option, but to go on without medication after release from incarceration. This quality improvement project has identified that many HTN inmates only get health care services during incarceration. This quality improvement project has also identified that when inmates with HTN are educated about HTN, their medications, and continuity of care in community based clinic, they continue their HTN treatment, and continue HTN follow up care in the community. This project will make a difference in how HTN inmates are released from jail, by addressing their discharge plans prior to release from jail, to help inmate continue HTN care while in the community. The short term goal for this project is

to help improve the health of those HTN inmates who are homeless, lack insurance, and income by ensuring that they receive medication prior to release from jail, and continue care in community based clinics after release from jail. The long term goal for this project is that no inmate that has been treated for HTN in the jail return to the jail reporting that their last treatment for HTN was during their last incarceration.

Therefore, it is evident from the literatures reviewed, that HTN is a public health problem in this vulnerable population that needs to be addressed in the community at large, as evident with the large number of HTN inmates coming to jail without insurance, and continuity of care. Homelessness is a major factor in the lives of inmates requiring future research.

References

Agency for Healthcare Research and Quality (2004). Hypertension care strategies: Closing the quality gap. Rockville, MD: Agency for Healthcare Research and Quality. Retrieved from:http://www.ahrq.gov/research/findings/factsheets/hypertension/hypertengap/

Agency of healthcare research and quality (2009). Community health center – jail partnership improves care during and after incarceration, reduces jail-based violence and deaths and enhances access to community-based care. Rockville, MD: Agency for Healthcare Research and Quality. Retrieved from: www.innovations.ahrq.gov/content.aspx?id=2652

Bell, D.F., Pestka, E., & Forsyth, D. (2007). Outcome evaluation: Does continuing education make a difference? *The Journal of Continuing Education, 38* (4), 185–190.

Binswanger, I., Redmond, N., Steiner, J., & Hicks, L. (2011). Health disparities and the criminal justice system: An agenda for further research and action. *Journal of Urban Health, 89* (1), 98–107. doi: 10.1007/s11524-011-9614-1

Binswanger, I. (2010). Chronic medical diseases among jail and prison inmates. Retrieved from: http://www.corrections.com/news/articles/26014-chronic-medical-diseases-among-jail-and-prison-inmates

Binswanger, I., Krueger, P. M., & Steiner, J. F. (2009). Prevalence of chronic medical conditions among jail and prison inmates in the USA compared with the general population. *Journal of Epidemiology Community Health, 63* (11), 912–929.

Binswanger, I., Stern, M., Deyo, R., Heagerty, P., Cheadle, A., Elmore, J., & Koepsell, T. (2007). Released from prison – a high risk of death for former inmates. *The New England Journal of Medicine, 356*(2), 157–165.

Boutwell, A, & Freedman, J. (2014). Coverage expansion and the criminal justice-involved population: Implications for plans and service connectivity. *Health Affairs, 33* (3), 482–486.

Brown University (2014). Expert call for prison health improvement. Retrieved from: http://www.sciencedaily.com/releases/2014/03/140303163625.htm

Butler, B. (2013). Health information exchange between jails and their communities: A bridge that is needed under healthcare reform. Retrieved from: http://perspectives.ahima.org/health-information-exchange-between-jails-and-

their-communities-a-bridge-that-is-needed-under-healthcare-reform/#.UuwgQ_RDv7A.

Centers for Disease Control and Prevention (2005). Engage stakeholders. Retrieved from: http://www.cdc.gov/std/program/pupestd/Step-1.txt

Centers for Disease Control and Prevention (2012). Vital Signs: Awareness and treatment of uncontrolled hypertension among adults – United States, 2003–2010. Retrieved from: http://www.cdc.gov/mmwr

Centers for Disease Control and Prevention (2013). World health day-High blood pressure. Retrieved from: http://www.cdc.gov/bloodpressure/

Centers for Disease Control and Prevention (2011). Inmates return to the community. Retrieved from: http://www.cdc.gov/idu/facts/cj-transition.pdf

Centers for Disease Control and Prevention (2013). Chronic disease prevention and health promotion. Retrieved from: http://www.cdc.gov/chronicdisease/resources/calculator/index.htm

Centers for Disease Control and Prevention (2012). Introduction to economic evaluation. Retrieved from: http://www.cdc.gov/owcd/eet/SeriesIntroduction/1.html

Choucair, B., & Palmer, T. (2004). Improving care for the homeless population using the chronic care model. Retrieved from: www.cdc.gov/pcd/issue/2004/apr/03_0034e.htm

Cuellar, A., & Cheema, J. (2013). As roughly 700,000 prisoners are released annually, about half will gain health coverage and care under federal laws. *Health Affairs, 31*(5), 931–938.

Chodos, A., Ahalt, C., Cenzer, I., Myers, J., Goldenson, J., Williams, B. (2014). Older jail inmates and community acute care use. *American Journal of Public Health, 104*(9), 1728–1733. doi: 10.2105/AJPH.2014.301952

Crayton, A., Ressler, L., Mukamal, D., Jannetta, J., & Warcick, K. (2010). Partnering with jails to improve reentry. A guidebook for community-based organizations. Retrieved from: http://www.urban.org/uploadedpdf/412211-partner-with-jails.pdf

Dinkle, S., & Schmidt, K. (2014). Health Education Needs of Incarcerated Women. *Journal of Nursing Scholarship, 46 (4),* 229-34. doi: 10.1111/jnu.12079.

Dumont, D., Gjelsvik, A., Redmon, N., Rich, J. (2013). Jails as public health partners: incarceration and disparities among medically underserved men. Int Journal of Men's Health, 12 (3), 213-227. doi: 10.3149/jmh.1203.213.

Dumont, DM., Brockman, B., Dickman, S., & Rich, JD. (2012). Public health and the epidemic of incarceration. *Annual Review of Public Health, 33*, 325-39. doi: 10.1146/annurev-publichealth-031811-1246.

Fazel, S, & Baillargeon, J. (2011). The health of prisoners. *The Lancet, 377.9769*, 965-65.

Fiandt, K. (2006). The chronic care model: description and application for practice. *Topics in Advanced Practice Nursing eJournal, 6 (4).*

Fox, A., Anderson, M., Bartlett, G., Valverde, J., Starrels, J., & Cunningham, C. (2014). Health outcomes and retention in care following release from prison patients of an urban post-incarceration transitions clinic. *Journal Health Care Poor Underserved, 25 (3),* 1139-1152.

Freudenburg, N., Daniels, J., Crum, M., Perkins, T., & Richie, B. (2005). Coming home from jail: the social and health consequences of community reentry for women, male adolescents, and their families in the communities. *American Journal of Public Health, 95 (10),* 1726-36.

Harzkle, A., Baillargeon, J., Pruitt, S., Pulvino, J., Paar, D., & Kelley, M. (2010). Prevalence of chronic medical conditions among inmates in the Texas prison system. *Journal of Urban Health, 87 (3),* 486-503.

Heines, V. (2005). Speaking out to improve the health of inmates. *American Journal of Public Health, 95 (10),* 1685-8.

Heiss, L., & Schoenly, L. (2014). Chronic illness in the correctional setting. Retrieved from: http://www.cenurse.com/content/ce524/chronic-illness-in-the-correctional-setting

Hodges, B. C., & Videto, D. M. (2011). *Assessment and planning in health programs* (2nd ed.). Sudbury, MA: Jones & Bartlett Learning.

Jacobi, J. (2005). Prison health, public health: obligations and opportunities. *American Journal of Law and Medicine, 31 (4),* 447-78.

Jarrett, N., Adeyemi, S., & Hugging, T. (2006). Bridging the gap: providing health care to newly released men. *Journal of Health Care for the Poor and Underserved, 17 (1),* 70-80.

Justice and Health. (2013). Health disparities in the criminal justice system. Retrieved from: http://www.jhconnect.org/wp-content/uploads/2013/09/health-disparities-final.pdf

Kinner, S., & Wang, E. (2014). The Case for Improving the Health of Ex-Prisoners. *American Journal of Public Health, 4 (8),* 1352-1355. doi: 10.2105/AJPH.2014.301883.

Kinner, S., Streitberg, L., & Butler, T. (2012). Prisoner and ex-prisoner health. *Improving Access to Primary Care, 41 (7),* 535-7.

Kulkarni, S., Baldwin, S., Lightstone, A., Gelberg, L., & Diamant, A. (2010). Is incarceration a contributor to health disparities? Access to care of formally incarcerated adults. *Journal of Community Health, 35,* 268-74. doi: 10.1007/s10900-010-9234-9.

Lewanczuk, R. (2008). Hypertension as a chronic disease: what can be made at the regional level? *Canadian Journal of Cardiology, 24 (6),* 483-84.

Marks, J, & Turner, T. (2014). The critical link between health care and jails. *Health Affairs, 33 (3),* 443-7. doi: 10.1377/hlthaff.2013.1350.

Miles, J. (2014). Jail-community connectivity essential to leverage health reform opportunities. *Correct Care, 28 (3),* 3-6.

Nash, D. B., Reifsnyder, J., Fabius, R. J., & Pracilio, V. P. (2010). *Population health: Creating a culture of wellness.* Sudbury, MA: Jones & Bartlett Learning.

Nainggolan, L. (2009). Former prisoners at higher risk of future hypertension. Retrieved from: http://www.theheart.org/article/961311.do

Nakashian, M. (2009). Returning Home: Understanding the Challenges for Prisoners. Retrieved from: http:/The /www.rwjf.org/en/research-publications/find-rwjf-research/2009/12/returning-home.html

National Commission on Correctional Health Care (2013). Retrieved from: http://www.ncchc.org/

National Commission on Correctional Health Care (2014). Retrieved from: http://www.ncchc.org/filebin/Guidance/Hypertension-2014.pdf

Polit, D., & Beck, C. (2006). *Essentials of Nursing Care: methods, Appraisal and Utilization. 6th ed.* Lippincott Williams and Wilkins, Philadelphia.

Price, C. (2009). Former prison inmates at increased risk for hypertension. *Archives of Internal medicine, 169,* 687-693.

Puisis, M. (2013). Improving health care after prison. *JAMA Intern MED, 173 (9),* 795-6. doi: 10.1001/jamainternmed.2013.371.

Rabin, R. (2009). Jail time increases odds of hypertension; researchers finds. Retrieved from: http://www.nytimes.com/2009/04/14/health/14heart.html?_r=0

Rich, J., Wakeman, S., & Dickman, S. (2011). Medicine and the epidemic of incarceration in the United States. *New England Journal of Medicine, 364 (22),* 2081-2083. doi: 10.1056/NEJMp1102385.

Sipes, L. (2012). Statistics of women offenders. Retrieved from: http://www.corrections.com/news/article/30166-statistics-on-women-offenders

Spaulding, A., Perez, S., Seals, R., Hallman, M., Kavasery, R., Weiss, P. (2010). Diversity of release patterns for jail detainees: implications for public health interventions. *American Journal of Public Health, 101,* S347-S352. doi: 10.2105/AJPH.2010.300004.

Wang, E., White, M., Jamison, R., Goldenson, J., & Estes, M. (2008). Discharge planning and continuity of health care: findings from the San Francisco county jail. *American Journal of Public Health, 98 (12),* 2182-4.

Wang, E., Hong, C., Samuels, L., Shavit, S., Sanders, R., & kushel, M. (2010). Transitions clinics: creating a community-based model health care for recently released California prisoners. *Public Health Reports, 125 (2),* 171-177.

Wang, E., & Wildeman, C. (2011). Studying health disparities by including incarcerated and formerly incarcerated individual. *The Journal of the American Medical Association, 305 (16),* 1708-1709. doi: 10.1001/jama.2011.532.

Wang, E., Hong, C., Shavit, S., Sanders, R., & Kessell, E. (2012). Engaging individuals recently released from prison into primary care: a randomized trial. *American Journal of Public Health, 102 (9),* E22-E29.

Wang, E., White, M., Jamison, R., Goldenson, J., Estes, M., & Tulskey,P. (2008). Discharge planning and continuity of care: findings from the San Francisco

County jail. *American Journal of Public Health, 98 (12),* 2182-2184. doi: 10:2105/AJPH.2007.119669.

Wang, E., Pletcher, M., Lin, F., Vittinghoff, E., Kertesz, S., Kiefe, C., & Domingo, K. (2009). Incarceration, incident hypertension, and access to health care. *Archives of Internal Medicine, 169 (7),* 687-693. doi: 10.1001/archinternmed.2009.26

William, B., McGuire, J., Lindsay, R., Baillargeon, J., Cenzer, I., Lee, S., & Kushel, M. (2010). Coming home: health status and homelessness risk of older pre-release prisoners. *Journal of General Internal Medicine, 25 (10),* 1038-44. doi-10.1007/s11606-010-1416-8.

Wilper, A., Woolhandler, S., & Himmelstein, D. (2009). The health and health care of US prisoners: results of nationwide survey. *American Journal of Public Health, 99 (4),* 666-672.

Woods, L., Lanza, S., Dyson,W., & Gordon, M. (2013). The role of prevention in promoting continuity of health care in prisoner reentry initiatives. *American Journal of Public Health, 103 (5),* 830-838.

Zlotnick, C., Zerger, S., and Wolfe, B. Healthcare for the homeless: what we have learned in the past 30 years and what's next. American Journal of Public Health, December, 2013. (103), pg s199-s205. doi: 10.2105/AJPH.2013.301586

Appendix A

Consent Form

You are invited to take part in a project because you have hypertension (HTN). It is a quality improvement educating and providing information to inmates with HTN for follow-up care in the community when they leave the jail. The project developer will include all inmates that do not have insurance, money to buy medications, homelessness, lack of job, or have no means to obtain health care while in the community. This form is part of the process called a consent form to allow you to understand the study, and decide whether you want to participate in the project.

If you agree to participate in the project, you will be asked to:

1. Sign this consent form.
2. Answer a 15 question survey questionnaire, which will help the project developer to identify what services you need before you leave the jail for the community.
3. If you return to the jail while the project is still in progress, you will be asked to complete another questionnaire to identify follow care in the community after the last release.
4. After completion of the survey, the project developer will give you a copy this form to keep for your records.

This project is voluntary. No action will be taken against you by any employee of the Fairfax County Adult Detention Center during your stay at the jail for not participating in the project.

There is no payment or gift given for participating in this project.

Be advised that any information given by you for this project will be kept confidential, and will not be shared with individuals not involved in the project. All correspondence related to the project will be kept in lock and key in the developers' office.

For any questions, you can reach the project developer in her office by requesting the post deputy to call for you to set up an appointment. You can also send a sick call request asking to speak to the project developer.

Statement of consent:

I have read the above information, and I understand well enough to make a decision about my involvement in participation in this, the hypertension quality improvement project.

Date of consent_____

Participant's Signature_____

Project developer's Signature _____

Appendix B
Hypertension (HTN) Quality Improvement Survey Questionnaire.

Please circle all answers

Survey Form # ____

Sex Male_____ Female_____

Race: White Black Hispanic Asian Other
Age: _____

1. Do you have high blood pressure? ..... Yes…. No
2. If yes, are taking medication for HTN?..... Yes…. No
3. Did you come to the jail with medications? ..... Yes…. No
4. If you did not come with medications, do you have them at home?..... Yes…. No
5. Did you take your HTN medication the day before incarceration? ..... Yes…. No
6. Has it been over one month since you last took HTN medicine? ..... Yes…. No
7. Have you been treated for HTN at this jail before? ..... Yes…. No
8. Were you told you have HTN in this jail ..... Yes…. No
9. After you were released from jail, did you continue treatment? ..... Yes…. No
10. Do you have access to medical care in the community?..... Yes…. No
11. Are you homeless? ..... Yes…. No
12. Do you have health insurance?..... Yes…. No
13. If given a prescription, will you be able to afford the HTN medication? .... Yes…. No
14. Do you need information for community-based clinic follow up? ..... Yes…. No
15. If you are linked to a community clinic, will you follow up?..... Yes…. No

Appendix C
Post-Test Hypertension Quality Improvement Questionnaire

Survey Form # _____

Sex: Male Female

Race: White, Black, Hispanic, Asian Other

Age: ____

1. Have you been taking your HTN medicines since release from jail…… Yes…. No?
2. Did you see the doctor or go to the clinic for follow up care?..... Yes No
3. If not, Did you make an appointment for follow up care? Yes No
4. Are you still homeless? Yes No
5. Are you still without a job Yes No
6. Did you fill the prescription given to you prior to release from jail Yes No
7. Were you able to pay for the prescription? Yes No
8. Was the prescription filled by a community-based clinic free of cost Yes No