

Behavioral Health &  
Wellness Program

University of Colorado Anschutz Medical Campus  
School of Medicine

---

# A Continuity of Care Model for the Justice-Involved Population



School of Medicine

UNIVERSITY OF COLORADO  
ANSCHUTZ MEDICAL CAMPUS

© Behavioral Health and Wellness Program

## **A Continuity of Care Model for the Justice-Involved Population**

**Patrece G. Hairston, Psy.D.**

**Chad D. Morris, Ph.D.**

**Cynthia W. Morris, Psy.D.**

**Ingrid A. Binswanger, M.D.**

Behavioral Health & Wellness Program  
University of Colorado  
Anschutz Medical Campus  
School of Medicine  
1784 Racine Street  
Mail Stop F478  
Aurora, Colorado 80045

Phone: 303.724.3713

Fax: 303.724.3717

Email: [bh.wellness@ucdenver.edu](mailto:bh.wellness@ucdenver.edu)

Website: [www.bhwellness.org](http://www.bhwellness.org)

This paper was made possible through the support of the Smoking Cessation Leadership Center (SCLC) at the University of California in San Francisco and Pfizer Independent Grants for Learning & Change (IGL&C), and the Colorado Department of Public Health and Environment's Health Disparities Grant Program



Behavioral Health & Wellness Program

University of Colorado Anschutz Medical Campus • School of Medicine



## **A Continuity of Care Model for the Justice-Involved Population**

### **EXECUTIVE SUMMARY**

Health equity is defined as “having the opportunity to attain one’s full health potential” (Braveman, 2003). Though not traditionally discussed as “underserved,” the justice-involved (JI) population is comprised of individuals with multiple socio-economic backgrounds that limit opportunities for health and well-being.

The JI population is primarily made up of traditionally underserved groups (e.g., low levels of education, racial/ethnic minorities, financially impoverished backgrounds). These individuals also experience psychiatric and physical health conditions at higher rates than the general population. This includes mental health and substance abuse disorders (Bureau of Justice Statistics, 2006), as well as chronic conditions, and infectious diseases (Binswanger, Krueger, & Steiner, 2009; Wilper et al., 2009). For the correctional system and overburdened community health systems, widespread chronic health conditions create significant financial and workforce strain as serving individuals with these conditions is difficult and costly. For the JI population, access to quality, efficient, and coordinated care is vital to achieve health equity.

Involvement across multiple systems makes coordination of care for chronic conditions time-consuming and challenging. Individuals within the JI population frequently receive health care in a number of systems simultaneously including primary care, behavioral health, and other community agencies (e.g., halfway houses, day shelters, public health agencies, faith-based organizations). Care coordination often fails to occur due to time constraints, lack of reimbursement for care coordination activities, and overwhelmed providers. This leads to duplication of services, multiple treatment plans and medication regimens, and billions of dollars in healthcare and service costs.

As a result of skyrocketing healthcare costs, clinicians, researchers, and policymakers have focused on the aspects of healthcare provision that are the most costly and have proposed various solutions to provide high quality care at a reasonable cost. The Affordable Care Act (ACA) includes many of these solutions, including a significant focus on establishing medical homes, financial incentives for health systems that engage in care coordination, and cost control measures (Affordable Care Act, 2013).

As the needs of the JI population are unique and varied, a piecemeal approach to service delivery would likely be ineffective and lead to more financial waste and failures to produce desired outcomes. Access to quality service, care coordination, and insurance coverage are all systemic issues applicable to the JI population. The need to develop a comprehensive, community-based healthcare delivery model has never been more important.

We propose an innovative healthcare approach to the criminal justice population. This hybrid delivery model combines the patient-centered medical neighborhood as outlined by the Agency for Healthcare Research and Quality (AHRQ) and the theoretical framework of public health as

outlined by the American Public Health Association. Through utilizing the strengths of both models, many barriers to care for the JI population are addressed, including redesigned care networks, formalized, strategic relationships with community providers, financial incentives and opportunity to share cost savings, and integration of well-established and successful public health principles.

The current AHRQ definition of a medical neighborhood expands the idea of the patient-centered medical home (PCMH) by creating a more expanded network of agencies to support the PCMH that are closely aligned in terms of patient care (Taylor et al., 2011). This may include social service agencies, community hospitals, specialty medical offices, pharmacies and laboratories, and state and local public health departments. The patient or client is considered the primary stakeholder in the AHRQ medical neighborhood model with the PCMH at the center. The core of this model is community-based integration and system redesign.

The addition of public health to this model promotes increased community involvement and systemic level health interventions to promote overall population health. Inherent within the practice of public health is the assumption that multiple professionals work towards the common goal of community health. For decades, many health professionals have worked in silos and failed to adequately communicate or collaborate with other providers, often times at the expense of quality care. The core tenets of this model address these areas of deficit and provide the framework for innovative healthcare delivery systems for the JI population. In this paper we detail an innovative continuity of care model that will serve as foundation for addressing JI individuals' specific health concerns such as tobacco and drug use.



## TABLE OF CONTENTS

Introduction.....	1
The justice-involved population.....	3
Discussing the “under-discussed”.....	6
Elements of an effective model: Benefits and challenges.....	8
Public health meets PCMN for the JI population: An innovative healthcare delivery model.....	13
Barriers addressed through this model.....	15
Recommendations for implementation.....	16
References.....	18

## **A Continuity of Care Model for the Justice Involved Population**

Reducing health disparities is one of the most widely discussed healthcare issues in the scientific literature and within the policy arena. With the ongoing implementation of the Affordable Care Act (ACA), methods to improve care coordination, increase cost effectiveness, and provide high quality, individualized care are a few of the aspirational healthcare delivery goals. Though each presents a unique challenge to the medical community, various delivery models have emerged (or re-emerged) with the promise to address these goals. Integrated care and the patient-centered medical home (PCMH) are two of the most prominent and both show great promise in addressing the needs of the underserved and the general population. Both models are largely supported by recent healthcare policy changes and have widespread support among many healthcare associations and disciplines.

Individuals involved in the legal system present unique challenges with regards to healthcare delivery and are frequently absent from conversations on health disparities. To achieve optimal health equity, these individuals often need the assistance of multiple community organizations working collaboratively in a systematic, cohesive manner. This requires a thoughtful and innovative approach to service delivery that emphasizes community linkage, population health, and specialized medical and psychiatric care geared at the management of chronic and infectious diseases. This white paper outlines a new approach, a hybrid between public health principles and the conceptual framework of the patient-centered medical neighborhood (an extension of the patient-centered medical home).

### **Purpose**

This paper is intended to serve as a sketch of the contextual issues that have contributed to poor health outcomes among the justice-involved population. This paper will outline the clinical research examining these issues, in addition to discussing current healthcare theory and policy. It is intended to provide both a rationale and practical methodology to creating a more effective healthcare system for the identified population.

### **Aims**

- 1) Outline practical terminology and provide an introduction to the health disparities faced by the justice-involved population.
- 2) Explain the need for innovative, integrated, and community-based health solutions for this group and potential barriers to current implementation.
- 3) Introduce current integrated care theories and propose changes to address system barriers.

- 4) Provide a foundation to pilot and study continuity of care models for specific health concerns such as tobacco and drug use.

### **Relevant terminology**

Throughout this paper, the abbreviation “JI” meaning *justice involved* will substitute the customary terms (e.g., inmate, prisoner, parolee, etc.) for describing individuals who have been incarcerated or those participating in community corrections programs. The ways in which individuals or larger groups are labeled can have a profound impact on the reader’s subjective thoughts/ feelings or cognitive interpretation of objective data. This term makes an attempt at removing some of the inherent stigma (conveyed through language) associated with this population and an acknowledgement that these individuals constitute more than their incarcerations.

Within the medical community, the terms jail and prison are frequently used interchangeably or clumped together in a “catch all term” (e.g., incarcerated population, inmate population, criminal justice population, etc.). However, there are some key differences within jail and prison populations that are relevant when conceptualizing healthcare delivery systems. According to the Bureau of Justice Statistics, jails are “locally-operated short-term facilities” that may hold individuals awaiting trial or sentencing or may house individuals on short-term sentences. These individuals are typically convicted of misdemeanors and serve less than a year sentence. Prisons are defined as “longer-term facilities” managed by the state or federal government. Prisons typically house individuals convicted of felonies and those serving longer sentences greater than one year (BJS, 2013).

## Justice-Involved population

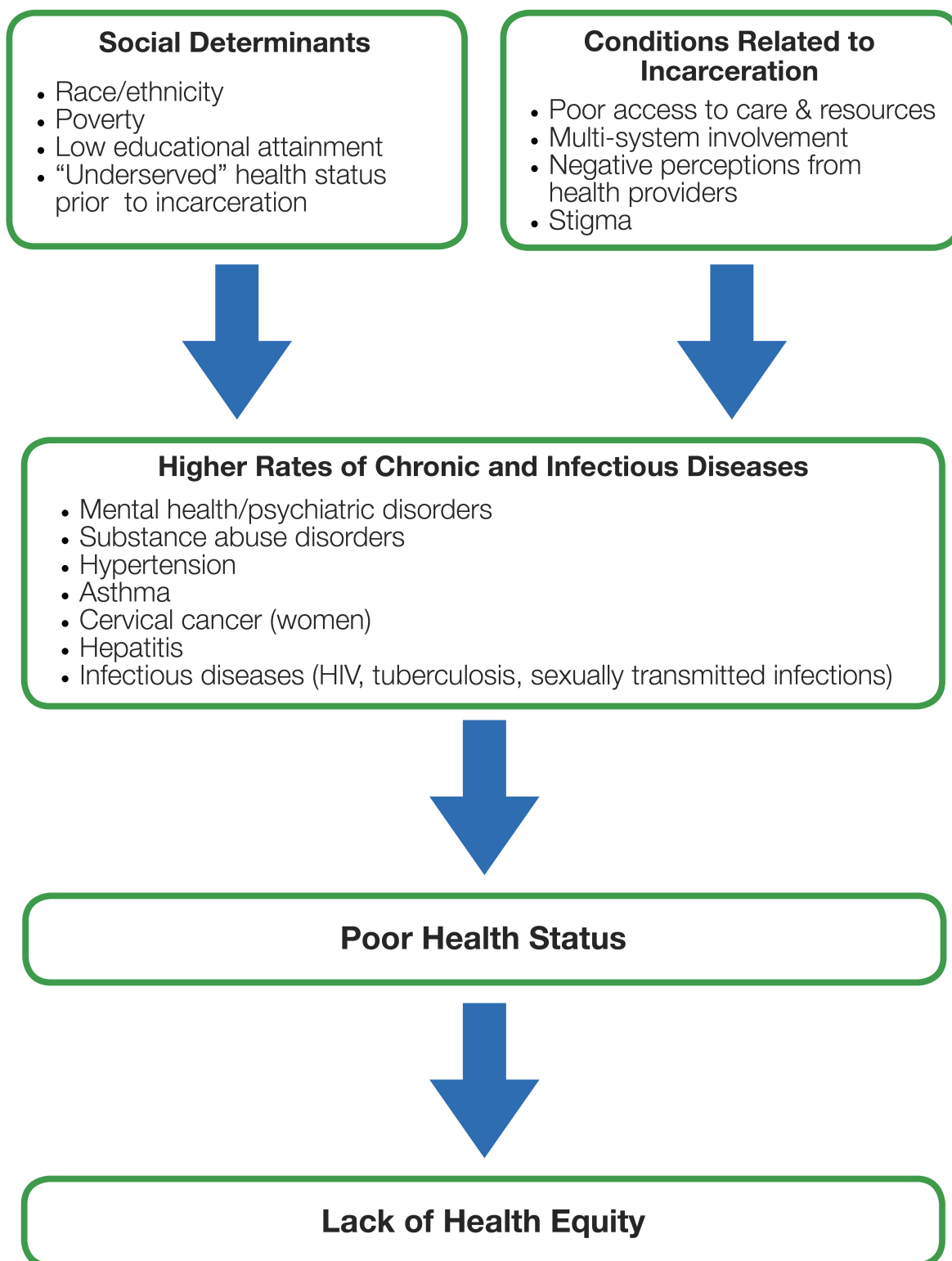
### *Social determinants*

The issue of health disparities in the United States has been well-documented and discussed in the scientific community for decades (National Research Council, 2012). Disparities by race/ethnicity, socioeconomic position, gender, age, geographic region, age, education level, disability status, and more recently, sexual orientation have been identified and analyzed by researchers and the scientific community. These U.S. sub-groups have been deemed “underserved” and billions of dollars in program development, research, and intervention have been spent to equalize health status in the United States. As a society, our leaders (both at the federal, state, and community levels) have taken the position that opportunities for good health should not be defined by social determinants. However, significant disparities persist – the “discussed” and the “under-discussed.”

It is important to note the demographic overlap between many of the identified “underserved” populations and the justice-involved population. The path to health inequality is often the same across these at-risk populations (*See Figure 1*). For example, according to the Federal Bureau of Prisons, nearly 40% of individuals currently incarcerated are African-American (Federal Bureau of Prisons, 2013), despite the fact that African-Americans only constitute approximately 12 - 13% of the general U.S. population. Additionally, African-Americans as a group generally score lower on many indicators of population health. This includes life expectancy, death rates, infant mortality, and other chronic diseases or conditions that lead to a lower quality of life or premature death (CDC, 2011b).

There is a link between pre-incarceration poverty and involvement in the justice system. JI individuals often come from socio-economically disadvantaged backgrounds and numerous studies have linked poverty with poorer health outcomes (Adler & Newman, 2002; Browning & Cagney, 2002). In a 2011 study conducted by the Centers for Disease Control and Prevention (CDC, 2011a), poor economic circumstances were linked to an increased risk for morbidity, mortality, unhealthy behaviors, reduced access to healthcare, and a poor quality of care.

Individuals with low levels of educational achievement also experience poorer health outcomes relative to same age counterparts. This demographic sub-group is overrepresented in the JI population – with an estimated 40% of individuals in state prisons having less than a high school diploma (BJS, 2003). Numbers for individuals within jails and community corrections are equally discouraging – 47% and 31%, respectively. This compares to only 18% of the general population that fail to complete a high school diploma.



**Figure 1.** Path to poor health status among the justice-involved population.

In 2007, The National Poverty Center conducted an analysis on data obtained from the National Health Interview Survey (NHIS) and identified several key findings regarding education level and health outcomes:

- More educated individuals have lower morbidity rates from common and acute chronic diseases (even when other demographic characteristics are controlled for);
- Even though life expectancy for all American groups and sub-groups is improving, the gap between those with a college degree and those without is widening; and
- Health behaviors alone cannot account for health status differences between those who are less educated and those who have more years of education.

### *Health outcomes*

A significant overlapping characteristic between underserved populations is psychiatric conditions. In recent years, it has become increasingly recognized that individuals with behavioral health conditions receive poorer care, have higher rates of chronic illnesses, and die prematurely relative to those in the general population. According to the Bureau of Justice Statistics, 56% of individuals incarcerated in state prisons, 45% of individuals incarcerated in federal prisons, and 64% of those held in county jails were diagnosed with a psychiatric illnesses based upon criteria in the Diagnostic and Statistical Manual of Mental Disorders (BJS, 2006). Since the closure of large scale psychiatric facilities and the transition to community-based care, individuals with severe psychiatric illness depend upon overburdened and underfunded community mental health centers for their care. Additionally, many individuals with psychiatric conditions have comorbid substance abuse disorders, making treatment in the community and medical stability more challenging and complex. According to the World Health Organization (WHO), behavioral health conditions account for more disability in developed countries than any other group of illnesses, including cancer and heart disease (WHO, 2004).

Looking more closely at all substance use disorders, smoking remains the leading cause of U.S. deaths and disabilities. Smoking and other tobacco use is a significantly greater concern for the JI population. The smoking rate among men in the JI population is approximately 3 times higher than the general population – between 70% - 80% (Ritter et al., 2011; Kaufmann et al., 2010; U.S. Department of Health and Human Services, 2006; Chavez et al., 2005). And similar prevalence rates have been reported for women who are incarcerated (Nijhawan et al., 2010; Cropsey, 2010).

Often related to smoking and other unhealthy behaviors, individuals within the JI population suffer from chronic medical conditions and infectious diseases at high rates. Over one third of

individuals in federal prisons (39%), state prisons (43%) and local jails (39%) reported a chronic medical condition (Wilper et al., 2009). Compared to the general population, JI individuals are more likely to suffer from hypertension, asthma, arthritis, cervical cancer (for women), and hepatitis (Binswanger, Krueger, & Steiner, 2009). Individuals within the JI population are disproportionately represented among those with infectious diseases including HIV, sexually transmitted infections, and tuberculosis. According to the CDC, 1 in 7 individuals with HIV passes through a correctional facility each year (CDC, 2012). In 2007, the rate of confirmed AIDS cases among state and federal prisoners was about 2.4 times the rate in the general U.S. population. There also appears to be gender differences within the JI population. Women in jail report a higher prevalence of all medical conditions than men, including cancer, hypertension, diabetes, arthritis, asthma, hepatitis, and cirrhosis (Binswanger et al., 2009).

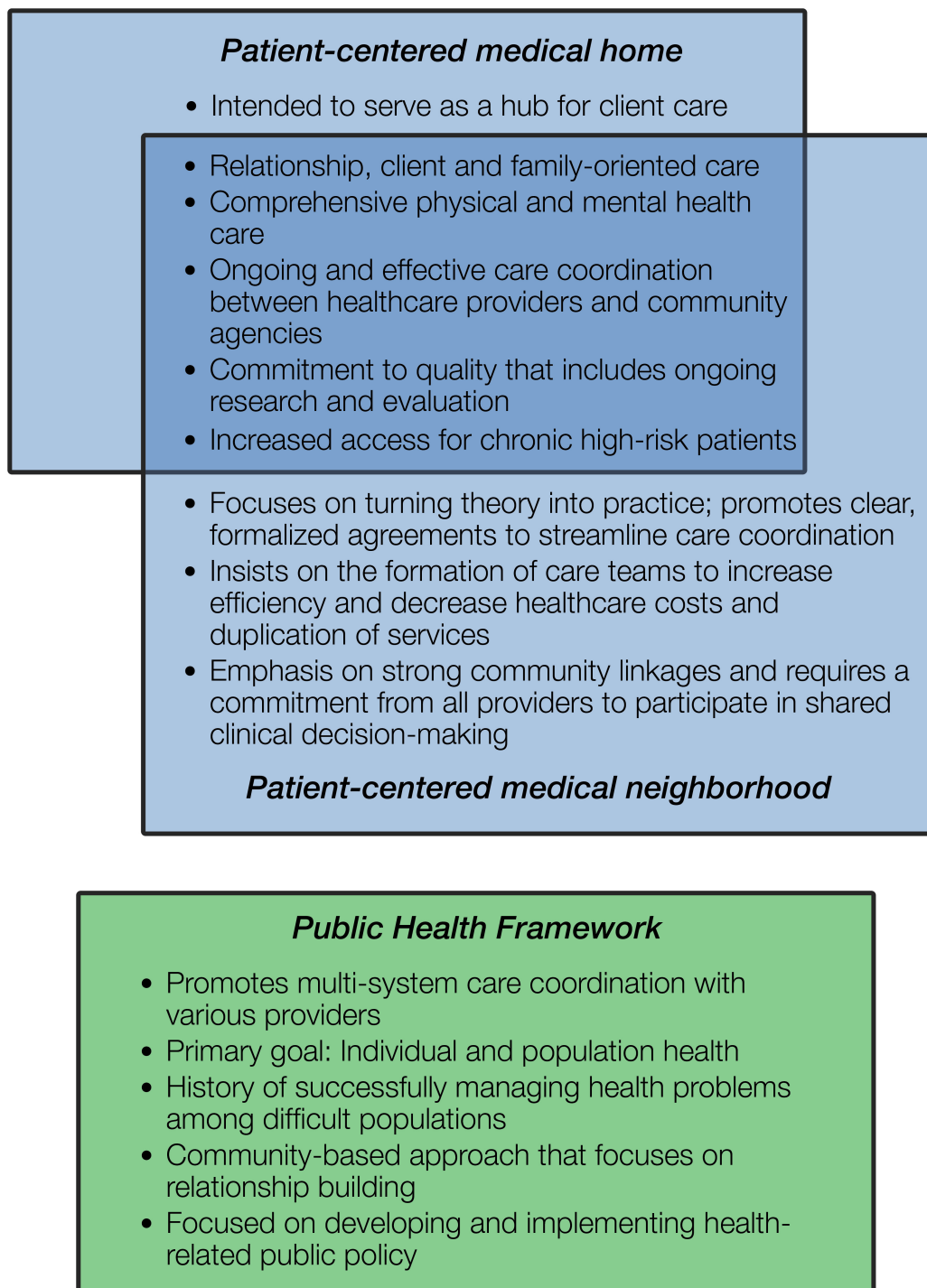
### **Discussing the “under-discussed”**

Despite recent examinations of the healthcare disparities within the JI population, this group fails to be a priority in the nationwide discussion on health equity. Many individuals within this population also fall within other “underserved” demographic groups, e.g., racial/ethnic minorities, low educational level, and low socioeconomic position (poverty). Though difficult to determine direct causal relationships, it is intuitive to assume that exposure to several impoverished social and environmental circumstances would make achieving good health extremely difficult. For many individuals within the JI population, this presents a significant dilemma and one that fails to be addressed by healthcare providers and community and federal policymakers. Though health disparities have been studied for decades and billions of dollars of research and programmatic funding has been allocated, it is difficult to find a large-scale project that addresses access to comprehensive community care for the JI population.

Most individuals who are incarcerated within jails and prison in the U.S. will be released back into the community and will need vital medical, mental health, and substance abuse services. If not addressed, this group becomes a significant financial and social strain on the larger community. Due to high levels of chronic medical conditions, infectious diseases, and mental health/substance abuse disorders, this group becomes an increasingly large utilizer of taxpayer funds for county and state services. This includes emergency medical care, incarceration costs (for revolving door arrests), county court costs, psychiatric crisis care costs, and correctional care costs (for individuals housed for longer periods in state or federal prisons).

As the needs of this population are unique and varied, a piecemeal approach to service delivery is ineffective and leads to more financial waste and failures to produce desired outcomes. Access to quality service, care coordination, and insurance coverage are all systemic issues

applicable to the JI population. The need to develop a comprehensive, community-based healthcare delivery model has never been more important.



**Figure 2. Practical models with effective elements: Birth of a hybrid delivery model.**



## Elements of an effective model: Benefits and challenges

### *The contribution of public health*

The American Public Health Association (APHA) defines public health as the “practice of preventing disease and promoting good health within groups of people, from small communities to entire countries” (APHA, 2013). Inherent within the practice of public health is the assumption that multiple professionals work towards the common goal of community health. The APHA identifies emergency first responders, health educators, public policymakers, scientists and researchers, public health physicians and nurses, occupational health and safety professionals, social workers, epidemiologists, nutritionists, and community planners all as potential partners in building an effective public health system. It seems intuitive that these principles would also apply to the building of programs and systems intended to reduce health disparities. However, many of these concepts are not inherent within the standard practice of medicine or mental health – these would be considered aspirational rather than necessary. This is not a new problem. For decades, many health professionals have worked in silos and failed to adequately communicate or collaborate with other professionals, often times at the expense of quality care. As such, models must be created (or existing models utilized) that have provider collaboration as the core and necessary feature. One such model is the patient-centered medical home. Another, less highly circulated model is the patient-centered medical neighborhood or the health neighborhood.

### *Patient-centered medical home (PCMH) vs. Patient-centered medical neighborhood (PCMN)*

With the passage of the Affordable Care Act (ACA) in 2010, the patient-centered medical home (PCMH) has been at the center of the discussion and touted as the beacon of quality healthcare delivery. It is important to note that the concept of a medical home has been around for decades and originated in pediatrics to serve children with special needs (Fisher, 2008; Arend et al., 2012). Due to the complexity of their medical regimen, children with special needs often work with various medical specialists, have significant psychosocial needs, and likely need access to community based services. These families may also have increased medical bills and may need financial assistance. As such, the PCMH appears to be a solution to the provision of coordinated care and community linkage necessary for a population with complex medical/psychosocial needs. Standards have been developed to further define what constitutes a “medical home.”

The Agency for Healthcare Research and Quality (AHRQ), a research subset of the United States Department of Health and Human Services (USDHHS) identifies the patient-centered medical home as having five core functions and attributes:

- 1) A relationship-based, person and family centered orientation acknowledging patients as a core member of the healthcare team.
- 2) The provision of comprehensive physical *and* mental health care from various health professionals operating collaboratively.
- 3) Ongoing and effective care coordination between PCMH staff, other community providers, and area hospitals, particularly during transitions between sites of care or after hospitalizations.
- 4) Increased access for urgent needs, shorter wait times for visits, longer clinic hours, and “around-the-clock” access via phone/email with providers.
- 5) A commitment to quality and safety that includes ongoing research on patient health outcomes, the utilization of evidence-based practices, and recognizing the importance of performance measurement and program evaluation (AHRQ, 2013).

This is the definition that will be utilized in the conceptualization of the medical neighborhood for the justice-involved population. However, it is important to note that several variations on the definition for the PCMH exist in the scientific literature. For example, in 2007, the American Academy of Family Physicians (AAFP), the American Academy of Pediatrics (AAP), the American College of Physicians (ACP), and the American Osteopathic Association (AOA) developed agreed upon principles for the PCMH that include many of those outlined by AHRQ. However, these joint principles call for the physician to be the “leader” of the treatment team. Though the family physician is an integral part of the medical team and has a leadership position with regards to patient care, other professionals are also qualified to serve as team leaders or facilitators. Within the proposed model for the justice-involved population, nurse practitioners, psychologists, social workers, or other health professionals would be appropriately aligned to serve in this role. The most important qualities in a team leader include:

- Familiarity with the patient or client and all treatment providers,
- Connections with social service, legal, and community agencies,
- A willingness to serve as the ongoing primary liaison between all associated parties, and
- The ability to build ongoing partnerships and relationships.

This appears to be workable solution for a population with high levels of chronic medical conditions, infectious diseases, and ongoing psychiatric/substance abuse disorders – like the JI population. Although this model has great promise and presents a strong theoretical frame, it is

important to understand the limitations of the PCMH in practice. It can be difficult to fully execute and presents challenges that need additional infrastructure to overcome.

PCMH Challenges include:

1) *The execution of care coordination*. Though ideal in theory, this can be difficult to achieve in practice. This may require additional staff members or a redistribution of responsibility, both of which may have increased costs and will change the internal practices of the medical or health home. In addition to internal policy and staff changes, care coordination requires active relationships with other agencies. This becomes particularly important for populations that need access to specialty medical clinics, social service agencies, and other community resources. The designated medical home or health home will also need to exchange agreements on how to transfer and share electronic medical records with other agencies. This requires time, dedication, staff resources, patient permission, and other clinic internal and external resources.

2) *Financial incentives*. With the new regulations instituted by the Affordable Care Act (ACA) in 2010, providers and policymakers are hopeful that there will be financial incentives for increased care coordination. Several initiatives include the *Comprehensive Primary Care Initiative*, which will provide additional monetary compensation (in addition to patient healthcare fees) to facilities that can show evidence of care coordination, preventative healthcare measures, and improved chronic disease management; the *Medicare Shared Savings Program for Accountable Care Organizations*, which will allow providers who voluntarily agree to work together to coordinate care for patients and to share in any cost savings generated by the ACO; and the *Advance Payment Model*, which will provide additional support to physician-owned and rural providers participating in the *Medicare Shared Savings Program* and who also would benefit from additional start-up resources to build the necessary infrastructure (Centers for Medicare and Medicaid Services, 2013). Only time will illustrate the effectiveness of these measures; however, they are an attempt to provide some financial incentive for organizations utilizing this model.

3) *Relationships with community providers and integral sub-specialty providers*. For populations with established health disparities, optimal care typically involves various agencies and specialties. These specialties are not necessarily medical; they could be social work, psychiatric, legal, and so forth. Ongoing collaboration and relationship building is not an easy task, particularly when provider groups have different funding streams, staff capabilities, organizational structures and goals, and understanding of patient problems. Additionally, relationships must be maintained and nurtured, with organizations communicating effectively about ongoing challenges and being fully committed to working through difficulties. This can be

another potential strain on time and resources. However, many physicians and other healthcare professionals are a part of either formal or informal referral networks that already exist and are grown throughout professional practice. Similar collaborative skills must be utilized to create these networks *between* healthcare professionals, particularly if disciplines are not co-located.

4) *Implementation of the Electronic Medical Record (EMR)*. Though touted as the one of the game-changing advances within the practice of medicine, the EMR has great promise and is being systematically implemented in health systems across the country. This has the potential to improve the provision of healthcare (including care coordination, costs, and patient outcomes) and several systems have demonstrated significant success in utilizing EMRs including Kaiser Permanente and the Mayo Clinic. However, these sophisticated and effective EMR systems operate within the confines of their respective organizations. One of the most important benefits of the EMR is the ability to efficiently communicate among providers, including examining patient records, electronic communication (e.g., emails, chart alerts), and tracking progress. When a patient enters the office, any healthcare professional is able to login and view lab results, previous diagnoses, medications, hospitalizations, office visits, etc. However, if trying to electronically communicate with another agency (using an incompatible system), problems arise and the benefits are lost. As such, organizations must find other means of adapting and building relationships with outside health providers. Technology will continue to evolve and compatibility issues may eventually be resolved; until then, organizations need to put sustained time and effort into system redesign efforts that are multi-modal and relationship driven.

Particularly for the JI population (whose identified needs are varied and great), a more inherently community-based model is needed for successful outcomes. Though the PCMH shows promise in the provision of more collaborative healthcare services, individuals in the JI population are frequently involved with multiple community systems that contribute to overall health. Addressing high levels of chronic medical conditions, infectious diseases, and substance abuse and psychiatric disorders are only a part of attaining overall health equity for this population. High levels of homelessness, frequent interactions with the justice and legal system, high levels of unemployment and low levels of educational attainment and opportunity, lack of health insurance or other benefits (e.g., SSI, SSDI), lack of reliable transportation, and difficulty accessing updated personal documents (e.g., birth certificate, social security card) are other common issues that impact health status for this group. It is not the role of the PCMH (at this time) to independently address all these issues. Other community organizations and agencies must be solid partners and work in conjunction with healthcare professionals to meet the overwhelming needs of the JI population.

### *Making a case for the medical neighborhood*

The current AHRQ definition of a medical neighborhood expands the idea of the patient-centered medical home (PCMH) by creating a more expanded network of agencies to support the PCMH that are closely aligned in terms of patient care (AHRQ, 2011). This could be social service agencies, community hospitals, specialty medical offices, pharmacies and laboratories, and state and local public health departments. The patient or client is considered the primary stakeholder in the AHRQ medical neighborhood model with the PCMH at the center. Ideally the participating “neighbors” are geographically proximal to one another, but this is not a necessity.

Additionally, the AHRQ medical neighborhood is intended to serve the individual patient or client but is also conceptualized as a population health and community-level intervention. The core of this model is community-based integration and system redesign. As such, this model expands the concept of the PCMH and argues for the systematic and forced integration of community agencies within the healthcare delivery system. To eradicate significant health disparities for underserved populations, attention to the holistic needs of the individual must be addressed. Healthcare delivery systems must be redesigned and the PCMH must be provided the opportunity to reach its full potential. If system design issues continue to be ignored and contextual issues negated, these will be primary contributors to ongoing health disparities and continued population health decline.

Ideally, a well-functioning medical neighborhood supports overall population health through a sharing of resources and infrastructure. At the core of this model is well executed care coordination requiring ongoing communication, collaboration and shared decision making amongst all involved providers and the patient (Meyers et al., 2010). The following are key components of the medical neighborhood per the AHRQ guidelines:

- Clear and formalized agreements for all “neighbors” (providers and organizations) on roles and responsibilities within the medical neighborhood. This may include care coordination contracts, mutual decision-making on care transitions, and pre-referrals. All parties must be committed to ongoing participation in these transactions and working through issues, as appropriate.
- Increase efficiency and decreased waste or duplication of necessary services. As such, neighbors must commit to sharing relevant clinical information and attaining the necessary permission from patients and other stakeholders to guide decision making. Depending upon the technological advances of the involved organizations, these processes could be streamlined through the use of the EMR. If not, part of the contractual agreement between organizations would be to utilize other means (e.g., phone, fax,

secure email, webcam, text alerts) to communicate patient information. It may require a great deal of ingenuity from the medical neighbors to figure out what works most efficiently and effectively for their respective organizations.

- Formation of care teams, typically anchored by the PCMH, that develop and execute individualized treatment plans. Ideally this treatment plan would be multi-disciplinary and describe the necessary sequence of healthcare interventions and interactions. This care team, along with other staff, would also participate in tracking progress and ensuring that care transitions, coordination, etc. are happening as outlined.
- Continuity of care when patients transition between settings (e.g., from hospitalization back to PCMH) with active communication, coordination, and collaboration among everyone involved in the patient's care. This may include providers, the patient, and family members.
- Informed or shared decision-making is embedded within the PCMN model. This means that the patient's preferences are necessarily a part of the development and execution of the treatment plan. Patients, families, and providers work together to balance scientific evidence and patient preference to "make optimal medical decisions."
- Strong community linkages that include both clinical and non-clinical services. This is the aspect that most distinguishes the PCMN from the PCMH. Though the PCMH encourages care coordination between multiple providers (including outside community agencies), this is primarily left up to providers within the medical home. In the PCMN, there is agreed upon shared responsibility (via contractual obligations) between organizations. All medical neighbors must participate in care coordination. This participation is tracked and evaluated. Community organizations may include mental health centers, substance abuse programs, halfway houses, housing programs, public health departments, schools, faith-based organizations, food banks, job skill and unemployment programs.

### **Public health meets PCMN for the JI population: An innovative healthcare delivery model**

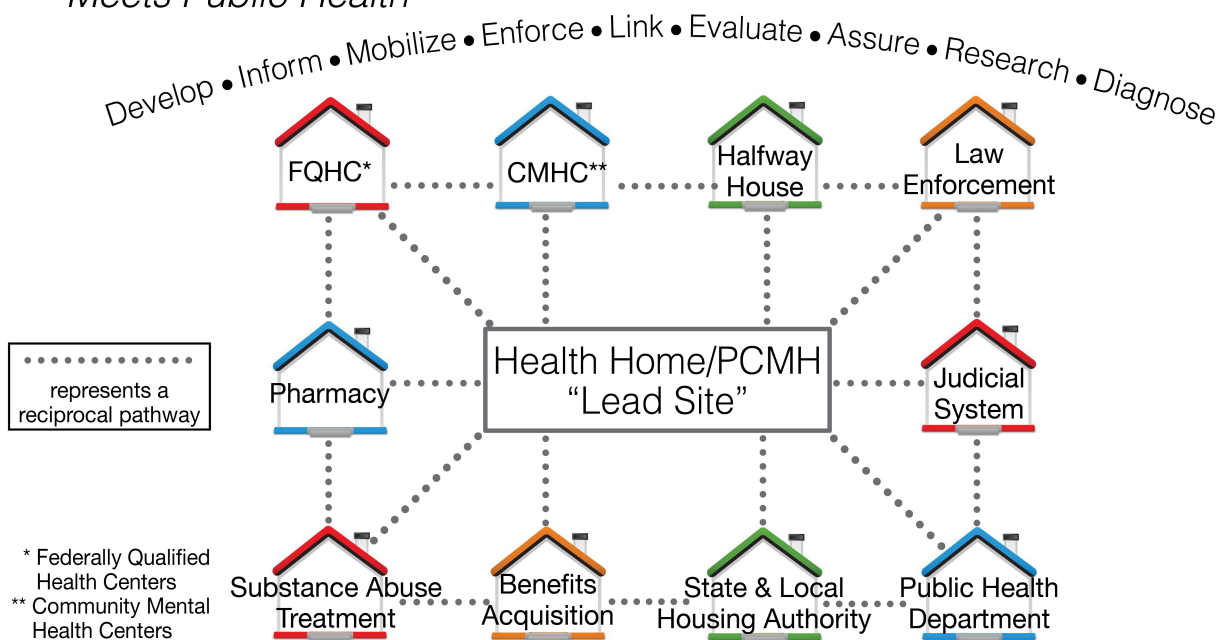
The goals of public health and the PCMN model appear well-aligned and geared toward service provision for a population with multiple needs that extend beyond what can be achieved within the confines of primary care. For optimal health outcomes within the JI population, community linkage is a necessary (rather than aspirational) principle that must be established with organizations that serve this population. It must be emphasized that shared responsibility benefits all stakeholders – patients, providers, and the larger community. Benefits are not primarily social (e.g., decreased incarcerations or less criminal justice involvement) but are also fiscal. Billions of dollars each year are spent on emergency medical care and duplication of services for individuals who fail to receive ongoing medical care. For this population (with low

levels of insurance coverage and chronic, high acuity medical and psychiatric needs), the cost burden is left to taxpayers. A fact that becomes increasingly unacceptable as healthcare costs continue to soar.

It is important to note that the literature base is still building for the patient-centered medical neighborhood (PCMN). The comprehensive white paper compiled by AHRQ (2013), which interviewed experts in the field of healthcare policy and reform and leading healthcare professionals in multiple disciplines, acknowledged that this model must be piloted with various populations to determine the effective mechanisms. However, “business as usual” is not the answer and innovative models must be developed and tested. The model being proposed is an integrative, hybrid model that includes the benefits and systemic design of the patient-centered medical neighborhood and the overarching principles of quality public health programming (See Figure 3).

## Hybrid Model

### *Patient Centered Medical Home Meets Public Health*



**Figure 3. A community-based integrative model for the JI population.**

Frequently, individuals within the JI population may be released from jail or prison and be unable to locate personal documents. Therefore, the community implementing this model would need to bridge a partnership with the local state agency responsible for attaining a driver's license, social security card, etc. These documents are required to access health benefits (e.g., Medicaid), housing, and other services. The model's "vital" neighbors would be the organizations that would sign the contractual agreement to engage in ongoing care coordination, treatment planning, and tracking systems. Figure 3 does not provide an exhaustive depiction of potential partners. For instance faith-based organizations and local job center/ employment agencies might be additional partners to consider.

### **Barriers addressed through this model**

1) *Redesigned care networks*. The underlying premise of the medical neighborhood is to address many of the systemic and practical issues that arise with patient-centered medical home (PCMH). This requires a thoughtful analysis of current system design and a significant reconstruction. It is possible that a PCP's office may not be the ideal location to serve as the "hub" of the medical neighborhood. PCP's are frequently burdened with time constraints related to various aspects of patient care and may not be fully able to serve as the primary team leader for care coordination as outlined in the original model. This model will promote developing a community "hub" that will serve as the primary information center for all medical neighborhood sites. This removes responsibility from overburdened systems and providers; it also provides a centralized location to assist with organization and structure.

2) *Formalized, strategic relationships with community providers*. Rather than discussions or well-intentioned attempts at care coordination, ongoing communication will be outlined in contracts. Participating "neighbors" will be required to designate a health professional to communicate with other "neighbors" and the "hub" on a weekly, sometimes daily basis (as deemed necessary). Building strong personal and professional relationships with other health professionals is frequently discussed, but significantly underutilized. This is a relationship-focused model and its success will depend upon the willingness of health professionals within the neighborhood to work together, particularly to address service barriers.

3) *Financial incentives and opportunity to share cost savings*. Due to new programs funded by recent health policy changes, providers are increasingly incentivized to engage in care coordination. If providers engage in successful care coordination and patient health is improved (resulting in decreasing overall health costs), programs like the *Comprehensive Primary Care Initiative* or the *Advance Payment Model* would allow participating agencies to obtain compensation for such efforts.



4) *Integration of well-established and successful public health principles.* Public health programs are credited with adding 25 additional years to the life expectancy of people in the United States (CDC, 2013), signaling a success at reducing the effect of disease on the overall population. As such, the underlying strategies and theories utilized in public health have great promise in achieving health equity among disparate populations, specifically the JI population.

### **Recommendations for implementation**

1) A lead site and health home should be identified and established to fit the demographics of the local JI population. Contrary to the PCMH model, this may or may not be a physical health clinic. The health home for this population could be a community mental health center, county court or justice department, or a public health center. The most important aspects of a health home are a desire and willingness to work with the population, specialized knowledge on the needs of the population, and the necessary infrastructure (from a technological and workforce perspective) to execute all healthcare-related interventions and care coordination.

2) After a lead site and health home have been identified, the local community agencies that are needed to provide a holistic approach to healthcare for the JI population should be identified. It is highly recommended that each participating site sign a memorandum of understanding or other contractual agreement to engage in shared service provision. These agencies should include social service agencies, medical clinics, mental health and substance abuse treatment centers, public health departments, county police departments or local sheriff's offices, community pharmacies, local courts, etc. Participating agencies may vary based upon current service delivery structures in a given city or municipality.

3) Shared financial incentives and other fiscal benefits should be mapped out and resources allocated accordingly. With the advent of the Affordable Care Act (ACA) and other healthcare policy changes, there will increasingly be financial incentives for effective care coordination. Further, duplication of services and lack of preventative care lead to soaring healthcare costs, particularly for a population with chronic medical and psychiatric conditions. By participating in shared financial compensation programs, organizations will be incentivized to engage in ongoing care coordination efforts and evaluate and improve systemic processes.

4) Use of the electronic health record and information technology should be at the forefront of developing the health neighborhood. Developing innovative technological infrastructure can change the way business is conducted in health settings. However, organizations must be willing to invest in infrastructure to take healthcare into the future and recognize the benefit of technology to any organization. Use of a shared or compatible electronic health record would

allow providers to quickly and efficiently exchange information about individuals on a regular basis. This is a particular benefit for providers who work with high utilizers, like the JI population. Many individuals within this group are “frequent fliers” in the criminal justice system, county hospitals, and local mental health and substance abuse treatment centers and cost taxpayers billions of dollars each year in overutilization costs.

5) Commitment to evidence-based practice and ongoing quality assurance research should be a requirement of participation in the medical neighborhood. Organizations serving the JI population should strive to provide the highest level of care possible, not just maintain the status quo or cater to antiquated clinical models or ideals. Participation in ongoing research or data collection projects should also be a requirement for continued funding or other financial benefits.

6) The public health principles are the overarching framework and should be utilized as a guide for how to execute all steps of the process. Public health as a discipline is focused on community engagement, building linkages amongst agencies, and population health. Interventions and infrastructure are designed and implemented to reach hundreds of individuals, improving the health of an entire community. The principles are as follows:

This hybrid model was created to address the health disparities which the JI population faces. Taking a continuity-of-care approach, the model necessarily breaks down “silos” of care, and facilitates formalized partnerships between the many community agencies that serve these at-risk individuals. Utilizing the patient-centered medical home (PCMH), patient-center medical neighborhood (PCMN), and public health frameworks, this model seeks to address current healthcare deficits and provides a foundation for innovative healthcare delivery systems for the JI population.

#### PUBLIC HEALTH PRINCIPLES

1. **Develop** policies and plans that support individual and community health efforts.
2. **Inform, educate** and **empower** people about health issues.
3. **Mobilize** community partnerships to identify and solve health problems.
4. **Enforce** laws and regulations that protect health and ensure safety.
5. **Link** people to needed personal health services and assure the provision of health care.
6. **Evaluate** effectiveness, accessibility, and quality of personal and population-based health services.
7. **Assure** a competent public health and personal health care work force.
8. **Research** new insights and innovative solutions to health problems.
9. **Diagnose** and **investigate** health problems and health hazards in the community.
10. **Monitor** health status to identify community health problems.

## References

- Adler, N. E., & Newman, K. (2002). Socioeconomic disparities in health: Pathways and policies. *Health Affairs*, 21(2).
- Agency for Healthcare Research and Quality. (2013). *Defining the PCMH*. U.S. Department of Health and Human Services. Retrieved from <http://pcmh.ahrq.gov/page/defining-pcmh>
- American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, & American Osteopathic Association. (2007). *Joint principles of the patient-centered medical home*. Retrieved from <http://www.medicalhomeinfo.org/downloads/pdfs/jointstatement.pdf>
- American Public Health Association. (2013). *What is public health? Our commitment to safe and healthy communities*. Fact Sheet. Retrieved from [http://www.apha.org/NR/rdonlyres/C57478B8-8682-4347-8DDF-A1E24E82B919/0/what\\_is\\_PH\\_May1\\_Final.pdf](http://www.apha.org/NR/rdonlyres/C57478B8-8682-4347-8DDF-A1E24E82B919/0/what_is_PH_May1_Final.pdf)
- Arend, J., Tsang-Quinn, J., Levine, C., Thomas, D. (2012) The patient-centered medical home: History, components, and review of the evidence. *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine*, 79(4), 433-450.
- Binswanger, I. A., 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 Epidemiological and Community Health*, 63(11), 912-919.
- Braveman, P. A. (2003). Monitoring equity in health and healthcare: A conceptual framework. *Journal of Health, Population and Nutrition*, 21(3), 181.
- Browning, C. R., & Cagney, K. (2002). Neighbourhood disadvantage, collective efficacy, and self-rated physical health in an urban setting. *Journal of Health and Social Behaviour*, 43(4), 383-399.
- Bureau of Justice Statistics (2013). "What is difference between jails and prisons?" Retrieved from <http://www.bjs.gov/index.cfm?ty=qa&iid=322>
- Centers for Disease Control and Prevention. (2011a). CDC Health Disparities and Inequalities Report – United States, 2011. *Morbidity and Mortality Weekly Report, Supplement*, 60. Retrieved from <http://www.cdc.gov/mmwr/pdf/other/su6001.pdf>
- Centers for Disease Control and Prevention. (2011b). *Minority Health: Black or African American Populations*. Retrieved from <http://www.cdc.gov/minorityhealth/populations/REMP/black.html>

- Centers for Disease Control and Prevention. (2012). *HIV in correctional settings*. Retrieved from <http://www.cdc.gov/hiv/resources/factsheets/pdf/correctional.pdf>
- Centers for Disease Control and Prevention. (2013). *Ten great public health achievements in the 20<sup>th</sup> century*. Retrieved from <http://www.cdc.gov/about/history/tengpha.htm>
- Centers for Medicare and Medicaid Services. (2013). *The Affordable Care Act: Helping providers help patients*. Retrieved from <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/downloads/ACO-Menu-Of-Options.pdf>
- Chavez, R., Oto-Kent, D., Porter, J., Brown, K., Quirk, L., & Lewis, S. (2005). *Tobacco Policy, Cessation, and Education in Correctional Facilities*. Chicago, IL: National Commission on Correctional Health Care and National Network on Tobacco Prevention and Poverty.
- Cropsey, K. L., Jones-Whaley, S., Jackson, D. O., & Hale, G. J. (2010). Smoking characteristics of community corrections clients. *Nicotine & Tobacco Research*, 12(1), 53-58.
- Federal Bureau of Prisons. (2013). *Inmate statistics: Race*. Retrieved from <http://www.bop.gov/news/quick.jsp>
- Fisher, E. S. (2008). Building a medical neighborhood for the medical home. *New England Journal of Medicine*, 359, 1202-1205.
- Harlow, C. W. (2003). Education and correctional populations. *Bureau of Justice Statistics Special Report*, Washington, DC: U.S. Department of Justice, Office of Justice Programs. Retrieved from <http://www.bjs.gov/content/pub/pdf/ecp.pdf>
- James, D. J., & Glaze, L. E. (2006). Mental health problems of prison and jail inmates. *Bureau of Justice Statistics Special Report*. Washington, DC: U.S. Department of Justice, Office of Justice Programs. Retrieved from <http://www.bjs.gov/content/pub/pdf/mhppji.pdf>
- Kauffman, R. M., Ferketich, A. K., Murray, D. M., Bellair, P. E., & Wewers, M. E. (2010). Measuring tobacco use in a prison population. *Nicotine & Tobacco Research*, 12(6), 582-588.
- Meyers, D., Peikes, D., Genevro, J., Greg, P., Fries, T. E., Lake, T., . . . Grumbach, K. (2010). *The roles of patient-centered medical homes and accountable care organizations in coordinating patient care*. Rockville, MD: Agency for Healthcare Research and Quality.

- National Poverty Center. (2007). *Education and Health: Policy Brief #9*. Retrieved from [http://www.npc.umich.edu/publications/policy\\_briefs/brief9/policy\\_brief9.pdf](http://www.npc.umich.edu/publications/policy_briefs/brief9/policy_brief9.pdf)
- National Research Council. (2012). *How Far Have We Come in Reducing Health Disparities?: Progress Since 2000: Workshop Summary*. Washington, DC: The National Academies Press.
- Nijhawan, A. E., Salloway, R., Nunn, A. S., Poshkus, M., & Clarke, J. G. (2010). Preventative healthcare for underserved women: Results of a prison survey. *Journal of Women's Health, (19)* 1, 17-22.
- Wilper, A. P., Woolhandler, S., Boyd, J. W., Lasser, K. E., McCormick, D., Bor, D. H., & Himmelstein, D.U. (2009). The health and health care of US prisoners: Results of a nationwide survey. *American Journal of Public Health, 99*, 666-672
- Ritter, C., Stover, H., Levy, M., Etter, J. F., & Elger, B. (2011). Smoking in prisons: The need for effective and acceptable interventions. *Journal of Public Health Policy, 32*(1), 32-45.
- Taylor E. F., Lake T, Nysenbaum, J., Peterson, G., & Meyers D. (2011). *Coordinating care in the medical neighborhood: Critical components and available mechanisms* [white paper]. Prepared by Mathematica Policy Research under Contract No. HHSA2902009000191 TO2. Rockville, MD: Agency for Healthcare Research and Quality.
- United States Department of Health and Human Services. (2006). *The health consequences of involuntary exposure to tobacco smoke: A report of the surgeon general*. Report prepared by the Surgeon General of the U.S. Public Health Service. Retrieved from <http://www.surgeongeneral.gov/library/reports/secondhandsmoke/index.html>
- United States Department of Health and Human Services. (2013). *Affordable Care Act, Sections II, III, and IV*. Retrieved from <http://www.hhs.gov/healthcare/rights/law/index.html>
- World Health Organization. (2004). *Promoting mental health: Concepts, emerging evidence, practice: Summary report*. World Health Organization, Department of Mental Health and Substance Abuse. Retrieved from [http://www.who.int/mental\\_health/evidence/en/promoting\\_mhh.pdf](http://www.who.int/mental_health/evidence/en/promoting_mhh.pdf)