

**AN ANALYSIS OF THE NEW YORK PRESBYTERIAN HOSPITAL (NYPH)  
COMMUNITY PARTNERSHIP MODEL (CPM) OF NORTHERN MANHATTAN:  
HOW DOES IT COMPARE TO  
NEW YORK STATE (NYS) AND THE UNITED STATES (U.S.) LEGISLATIONS?  
HOW EFFICIENT IS THIS HEALTH DELIVERY MODEL?**

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**ABSTRACT**

In today's changing and diverse population, ensuring affordable, quality, and accessible healthcare entails developing a culturally competent, modifiable, replicable, and measurable health model. NYPH has implemented a Northern Manhattan health initiative in Washington Heights/Inwood (WHI) that actively achieves this goal. This three-phase model called the Community Partnership Model (CPM) makes use of health need assessments, Health Information Technology (HIT), Cultural Competency, community and provider involvement, and feedback evaluations. We analyzed how both NYS and national health legislations compare to the goals of NYPH's CPM and how the WHI initiative differs from any other health legislation especially with regards to medical homes. From this, we found that the primary advantages of the WHI CPM are its implementations of Cultural Competency, feedback, and an improved medical home. This paper suggests that the CPM is a replicable and scalable model that integrates the provider, patient, and community to provide patient-centered, culturally competent, and quality healthcare. Collectively, the health legislation analysis and census data of WHI, NYS, and the U.S. demonstrate that the CPM is a healthcare delivery system that maximizes healthcare quality and accessibility and can be translated into state and national use.

**INTRODUCTION**

There is a need to identify health care models that increase the quality and lower the cost of patient care.<sup>1-</sup>  
<sup>2</sup> There are several characteristics that can be incorporated into such a health care system to enhance its delivery. An approach that results in more patient-centered care involves what is referred to as Cultural Competency. According to the National Quality Forum (NQF), Cultural Competency in healthcare has the ultimate goal of ensuring equity in access and quality to all patients. It is defined as an ongoing process involved with healthcare systems, organizations, and professionals to provide culturally conscious and high-quality care that is safe, patient and family-centered, evidence-based, and equitable for diverse patient populations.<sup>3</sup> When patient-centered approaches are used by providers, the patient's health status and provider's care efficiency increase.<sup>4</sup> Subsequently, the incorporation of Cultural Competency into a patient-centered care system may contribute to positive health results.<sup>4-5</sup> It has been shown that when providers use such techniques, they are better able to extract accurate information from patients.<sup>6-9</sup> By utilizing cultural competence, providers will enhance their relationships with patients and maintain a coordinated health delivery system.<sup>6</sup> The incorporation of Cultural Competency into a health model makes it more patient-centered which produces better health outcomes. The current study suggests that Cultural Competency may be a valuable and practical component to a health delivery system.

Another aspect of a health care model that may be beneficial to its delivery is the incorporation of a feedback loop, whereby the delivery system is consistently being assessed. It was found that such

feedback results in positive outcomes, and that process feedback is conducive to goal accomplishment.<sup>10</sup> In addition, educating and providing feedback to physicians regarding their behavior makes for a more effective intervention.<sup>11</sup> Feedback's effectiveness, however, is magnified when the baseline is low and when feedback is continuously used.<sup>12</sup> For instance, a high-level culturally competent and patient-centered provider will not respond as well to feedback in comparison to a provider with low Cultural Competency and patient-centeredness. As a result, feedback within a health model must be specifically catered to the baseline performance of the provider.

The theory of patient-centered medical homes (PCMHs) that has been proposed by legislation is based on the ideas above, which focus on increasing the quality of healthcare. The PCMH delivers primary care, patient-centered care, new-model practice, and payment reform.<sup>13</sup> This high-caliber care system rewards quality treatment, not the quantity of treatment. A PCMH includes a partnership between patients, personal physicians, and patients' families. The patient-provider interaction extends beyond the examination room to the extent where the relationship is maintained through Health Information Technology (HIT) and case managers.<sup>14-15</sup> According to the National Committee on Quality Assurance (NCQA), the medical home strives to replace episodic care with a coordinated and long-term healing relationship with patients. Care is enhanced through open scheduling, extended hours, and improved provider communication.<sup>16</sup> The primary care physician coordinates this care using HIT and new reimbursement models with incentives for improved communication. In a medical home, the provider is able to access the information needed to communicate with the patient's caregivers and coordinate patient care as the patient moves through the health care system. and feedback, may be used as a broad framework for health models on both the state and national scales.

The PCMH has promising financial and healthcare quality benefits. The quality-based financial incentives result because of enhanced patient experience and outcomes.<sup>14</sup> With regards to quality, children who go to medical homes are more likely to be up-to-date with vaccines in comparison to children who did not receive that kind of primary care.<sup>16</sup> Further evidence suggests that medical homes provide a more positive experiences for its patients.<sup>18</sup> Also, a literature review showed that the PCMH produces better results for patients with special healthcare needs.<sup>19</sup> In addition, using HIT for preventative and manageable disease control contributes to financial savings.<sup>20</sup> These studies demonstrate that not only are providers benefitting from the PCMH but also the care, treatment, and follow-up of patients are improved.

PCMHs have already been implemented in areas of the U.S. such as North Carolina. The self-sustaining PCMH program, called Community Care of North Carolina (CCNC), has produced positive results since its development a decade ago. For instance, in 2003, it saved the state \$60 million; then, it saved \$161 million in 2006.<sup>21</sup> These financial gains were achieved by savings in the emergency department, outpatient care, and in the pharmacy. In addition to economic outcomes, the health outcomes of chronically ill patients were augmented. For example, the number of asthma hospitalizations decreased, and the number of patients who were inoculated increased. Through partnerships between hospitals, health departments, and social service departments, the CCNC has demonstrated the potential benefits that lie in PCMHs.<sup>21</sup>

There are major challenges to PCMHs. One criticism is that it involves changing the structure of the primary care practice. This will require staffing changes, new technologies, and new ways to approaching patients and insurance. Another observation is that they do not produce immediate results-- PCMHs take time to show financial savings from decreases in medical errors, emergency department visits, and hospitalizations.<sup>13</sup> Other barriers to the success of medical homes include resistance to collaboration, lack of support, and difficulty controlling costs.<sup>22</sup> Nonetheless, the overall goal of the medical home is to increase the quality of healthcare, provide coordinated and integrated care, and foster the interaction between the patient and physician. This makes healthcare more accessible, diminishes the reliance on episodic care, and enhances the patient-provider relationship.

The previously discussed studies indicate that Cultural Competency and feedback evaluations can positively contribute to a health delivery model. Also, the quality of healthcare can be improved through the PCMH. In light of this background, the current investigation analyzed and compared the NYPH's WHI CPM with health initiatives in NYS and the U.S. We identified demographic trends in WHI that were comparable to that of NYS and the U.S. Analyzing the initiatives on the local, state, and national levels, we found that the WHI CPM's use of Cultural Competency and feedback suggests that the CPM is an efficient health model in delivering quality healthcare. Finally, we have established that the CPM incorporates a PCMH that provides more patient-centered care. This analysis supports the idea that NYPH's CPM is a culturally competent, replicable, and measurable health delivery system that has the potential to be applied on both state and national levels.

## **METHODOLOGY**

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**General overview:** Prior to any analysis, we defined the steps that have been taken towards healthcare legislation on the local, state, and national levels. The subsequent discussion of this analysis provides a detailed account and a comprehensive understanding of the fundamental principles, justifications, and goals of the legislations.

**Demographic data analysis:** An objective of this study was to analyze and compare the WHI CPM to the health initiatives of NYS and the U.S. Demographic and socioeconomic data were gathered from the 1990 Census, 2000 Census, and the American Community Survey of 2006 from the Census Bureau. The population size, race and ethnic composition, Latino composition, languages spoken, citizenship, average income, and price of rent of WHI, NYS, and the U.S. were compared. The data were used to investigate the beneficial aspects and the implications of the CPM on state and national health legislations. Also, the shifting demographics helped us discuss the translatability of the CPM on statewide and national scales.

**Comparison of health initiatives:** A comparative analysis of health initiatives in WHI, NYS, and the U.S. was carried out. The purpose was to reveal both the parallels and inconsistencies NYS and the U.S. legislations have with the CPM. Additionally, the comparison was used to note shortcomings in the NYS and U.S. health plans and to detail the beneficial aspects of NYPH's CPM. Several articles and literature-based sources were used to confirm and support the discussion.

**The WHI PCMH examined:** The WHI initiative's PCMH was compared with that of the Community Care of North Carolina (CCNC). The medical home in North Carolina achieved the PCMH goals outlined by NYS and the U.S. These goals included maximizing economic savings, preventative care, healthcare delivery, and inter-professional communication. As a result, the CCNC represented a baseline PCMH model for state and national legislation.

## **GENERAL OVERVIEW**

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**The Washington Heights/Inwood Community Partnership Model (WHI CPM):** The WHI CPM is a community-engaged health initiative that is based on the Wagner Chronic Care Model. It identifies the concerns and targets the health needs of WHI in Northern Manhattan (see Appendix A. Figure 1a). The CPM uses this data to intervene at the community level to catalyze and induce changes in healthcare. This model system consists of 3 distinct, integrated, and focused phases. These phases complement each other in order to allow for the incorporation of a feedback mechanism once all the phases have been completed. The feedback on the outcomes of the CPM makes the model flexible to alterations based on changing demographics; it identifies inadequacies of the model in order for health legislators to make productive adjustments. As a result, the CPM is an up-to-date community-specific health intervention.

Phase I identifies health needs and structural changes using the demographic overviews of WHI. Phase II is then implemented (see Appendix A. Figure 2a). By applying the Phase I population data into Phase II, NYPH will be able to develop culturally competent program recommendations and define the necessary resources and associated costs to achieve the community health goals. Currently, the WHI initiative is in Phase II of the model. Phase II aims to improve community health by establishing goals, programs, and interventions. In order to accomplish this, NYPH has established seven workgroups dedicated specifically to these tasks (see Appendix A. Figure 3a). Finally, once Phase II is complete, Phase

III begins implementing culturally competent health interventions. The quantitative and qualitative data gathered by NYPH in Phase III will be used to develop constructive feedback, evaluations, and recommendations (see Appendix A. Figure 4a).

In NYS, the NYS Department of Health (NYSDOH) in Albany has implemented programs and bills to promote community health. Legislation has been passed to diminish the disparities in care for minority groups by focusing on Cultural Competency. Also, there have been efforts to increase healthcare access, affordability, and education. In addition, healthcare programs have been developed to intervene at the community level and to improve follow-up care using HIT. Lastly, the NYSDOH has provided grants to communities to establish PCMHs. These initiatives have been instituted with the goals of increasing the quality of care and preventing disease.

The NYSDOH has legislated to maximize healthcare delivery to communities. Recently, budget allocations have been channeled to support community-based health clinics.<sup>23</sup> The goal is to increase the use of preventative care by increasing the reliance on community health centers. This may increase the quality of patient-centered care while decreasing episodic care, and as a result, disease prevention, illness management, and follow-up care are enhanced.

Subsequently, legislation has focused on healthcare disparities and awareness. Primarily, NYSDOH's bill S2878 calls for assessing, identifying, and addressing disparities to improve healthcare delivery. Another bill, S2338, increases Cultural Competency in dealing with a patient's religion whereby providers are prohibited from engaging in inappropriate and intrusive inquiry with patients having a conflict between a doctor's treatment and their religions. Also, bill S3679 establishes educational and outreach programs for lupus, which is three times more common in blacks than whites. Through education about this disease, the NYSDOH aims to reduce the disparities in occurrence.<sup>24</sup> These bills increase the quality of care by raising awareness of diseases and ensuring that providers are culturally competent with their patients.

Minority health has also been a topic of legislation. The Minority Mental Health Act establishes mental health programs that are linguistically competent. Furthermore, bill S4157 establishes the Minority Coordinating Council on Asthmatic Affairs to assess asthma risk factors for minorities in NYS, to identify barriers to quality and care, and to develop awareness campaigns.<sup>24</sup> The NYSDOH has made it imperative that being competent to minorities and addressing disparities has the potential to increase the quality of healthcare.

In addition to this, there have been bills passed to augment healthcare accessibility, affordability, and awareness. Bill S121A works with pharmacies to offer a discounted price to those unable to purchase medications at the regular value. Decreasing the cost of medication increases the accessibility to patients who need these medications the most. Also, bill S2015 was passed to enhance the awareness of lung cancer, one of the top causes of death in NYS.<sup>24</sup> The bills described above demonstrate that not only are cultural and linguistic competency essential to providing care but also care availability and health education are critical to preventing disease.

Also, legislation has established health programs that focus on preventative treatment, follow-up care, and affordable healthcare. A program called the Community Service Plan (CSP) was established to construct a partnership between hospitals, local health departments, and communities.<sup>25</sup> Ultimately, the CSP focuses on public health priorities to promote healthier lifestyles and disease management. Also, the Office of Health Information Technology Transformation (OHITT) was created to enhance follow up care. The OHITT involves coordinating and managing patient care by collaborating with PCMHs and using HIT to allow patients to be electronically involved with their physicians. The program identifies a population with a high risk of a certain disease and works with the community providers to ensure that all steps are taken to prevent the illness.<sup>26</sup>

Finally, the NYSDOH has established grant applications in support for developing PCMH. The plan, which is called, Improving Care Coordination and Management through a Patient-Centered Medical Home Model Supported by an Inter-operable Health Information Infrastructure, is part of the Health Efficiency and Affordability Law for New York (HEAL NY) Capital Grant Program. The HEAL

NY program has the objective to identify and support opportunities for investing in HIT and for restructuring healthcare delivery systems.<sup>27</sup> Because of the investment placed into this initiative, the vision NYSDOH has for PCMHs can have a significant impact on healthcare delivery in NYS. This discussion on NYS health legislation demonstrates that there is avid support for health education, patient-centeredness, preventative care, accessibility, HIT, and PCMHs.

**U.S. legislation:** The U.S. healthcare system spends \$2.2 trillion annually on healthcare (see Appendix A. Figure 5a). Since 1997, the expenditure on healthcare has been increasing while the amount of employees insured by their employers has decreased.<sup>28</sup> In addition, the cost of care has been increasing at a four-fold rate in comparison to wage increases since 2000, and 50 million of the U.S. population remain uninsured or underinsured (see Appendix A. Figures 6a and 7a). Also, the U.S. healthcare system struggles despite spending almost double the amount on healthcare annually than most developed nations (see Appendix A. Figure 8a). Based on this data, we see that despite annual rises in healthcare spending healthcare access, performance, and quality have decreased (see Appendix A. Figure 9a). President Barack Obama and his administration have suggested legislative reforms to lower the healthcare costs and increase quality and accessibility.

The reforms focus on a collection of components in the health system (see Appendix A. Figure 10a). The plans aim not only to provide affordable insurance plans to the uninsured and underinsured, but also to promote preventative care by utilizing HIT to enhance coordinated-care. A strong proponent of this idea is Representative Patrick Kennedy from Rhode Island. He has been working on the 21st Century Information Act, which aims to develop secure and confidential health information networks. With HIT, providers would have critical information at the point of care, and as a result, waste and duplication would be reduced.<sup>29</sup> Essentially, the U.S. administration understands that implementing such an initiative will produce economic savings over time.<sup>30</sup> Another economic incentive of this plan is that it will save \$2500 for each family.<sup>31</sup> The financial savings they will produce, however, will not be immediate.<sup>28</sup> Realistically, any changes on the national level will take time to flourish.<sup>32</sup> Insofar as it can be ascertained, the potential progress made by investing in prevention and HIT may be beneficial.

Also, there has been legislation for the development of PCMHs to coordinate care and support patient-centered treatment. A bill called the Medical Homes Act of 2009 has been legislated in Congress to establish PCMHs. The goal of this proposal is to improve the effectiveness and efficiency of medical assistance.<sup>33</sup> Consequently, the Medical Efficiency and Delivery Improvement of Care Act (MEDIC) of 2009 has been placed into Congress' agenda. It aims to provide additional access to primary care services by establishing PCMHs and to create new payment models for services under Medicare.<sup>34</sup> In addition, the Senate Finance Committee has pushed for implementing PCMHs in hopes of improving quality for patients and containing costs. According to the Committee's "Description of Policy Options," the medical home would contribute to integrated, transitional care for patients with chronic illnesses.<sup>35</sup> As a result of the development of medical homes, the primary care healthcare delivery system in the U.S. would be transformed.

With regards to legislation, several bills have been introduced to Congress that address improving the quality of care, increasing access to primary care physicians, developing coordinated-care systems, and maximizing insurance participation. The H.Res.271 bill calls to increase preventative care in order to diminish the amount of people relying on long-term care. For those dependent on chronic care, the bill supports funding for HIT and initiatives that improve the quality of care.<sup>2</sup> Furthermore, the Preserving Patient Access to Primary Care Act of 2009 has been introduced. It requires for additional incentive payments for primary care services especially to those that serve patients with limited English proficiency.<sup>36</sup> Lastly, the Community Coalitions for Access and Quality Improvement Act of 2009 was proposed in order to improve coordination among providers and to enhance the service of providers. The success of this bill lies in providers using Cultural Competency, community-tailored health programs, and HIT.<sup>37</sup> Ultimately, the proposals that are being developed on the national level advocate for healthcare delivery by integrating HIT coordination into primary care.

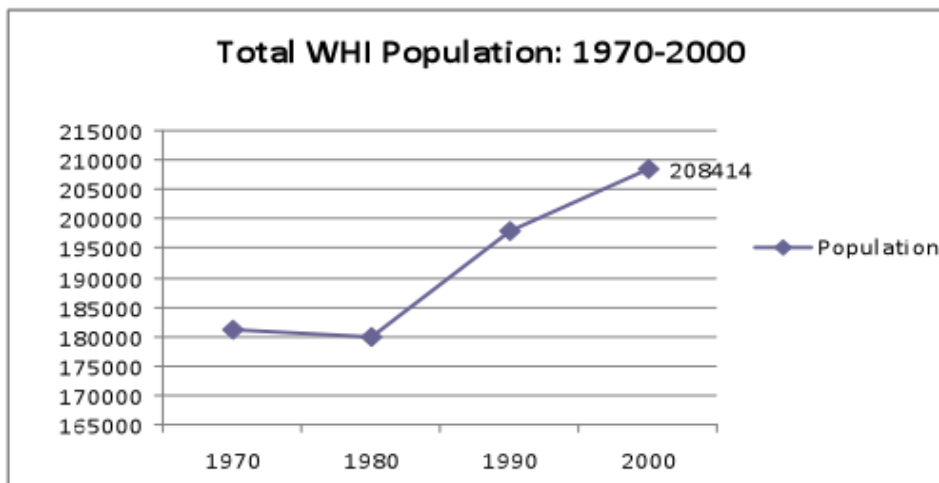
In response to calls to address the U.S. healthcare system, the Obama administration has already ratified the American Recovery and Reinvestment Act of 2009 (see Appendix A. Figure 11a). A portion of the bill’s funds resides in HIT development and healthcare quality research. The purpose is to increase the quality of chronic care and develop ways to augment patient-centered care.<sup>31</sup> The other aspects of healthcare that have been called into reform such as accessibility, affordability, PCMHs, and quality have been addressed through several bills, but none have been legislated into the Senate. Also, the costs to implement such reform have not been determined. The steps taken by the national legislation to address the health system suggest that a large-scale health initiative may be imminent.

**RESULTS**

In order to shed light on the potential effectiveness of the CPM as a healthcare delivery model, the following analysis was carried out to determine how the CPM compares to the NYS and U.S. health initiatives. A comparative analysis on the demographic data, census surveys, and health initiatives was performed. This allowed for us to understand the extent to which the NYPH’s CPM can be applied on different levels of legislation.

Then, to identify the beneficial aspects of the CPM, the NYS and U.S. plans were compared to the WHI initiative. Information from published articles and analysis of the WHI, NYS, and U.S. health plans were integrated to identify the similarities and differences between the health legislations. Also, innovative components of the CPM were revealed through our discussion of the different health initiatives and the CCNC PCMH.

**Demographics:** The data from the 1990 and 2000 WHI Census and the 2006 American Community Survey showed that there has been a 16% population increase since 1970 (see Figure 1). The information showed that WHI has a 75% Latino majority while non-Latino populations have shrunk 6.5% (see Figure 2). 72% of the Latino population is composed of Dominicans, which is up from 55% in 2000 (see Figure 3). Also, foreign-born residents make up 51% of the population. Because of this, 72% of WHI residents speak a language other than English (see Figure 4).<sup>38</sup> As a result, foreign born residents often have linguistic, cultural, and legal barriers to quality healthcare. These barriers limit access and result in worse health outcomes.



**Figure 1: WHI population 1970-2000.**  
 Source: Population Division- New York City Department of City Planning

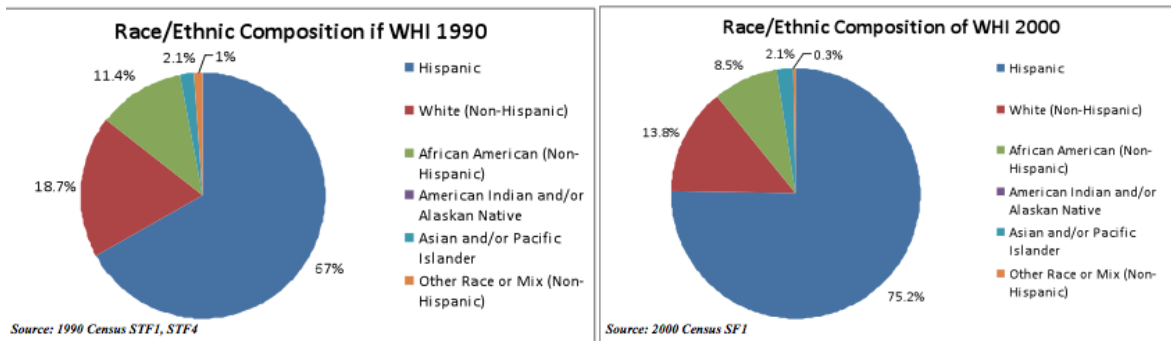
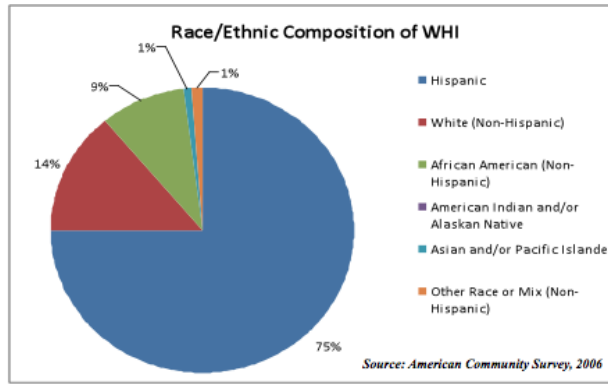


Figure 2: WHI racial and ethnic composition in 1990, 2000, and 2006.

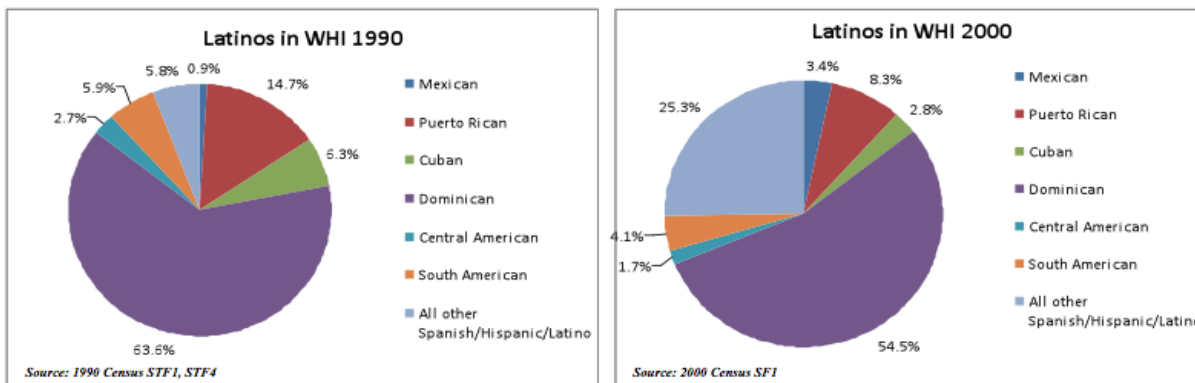
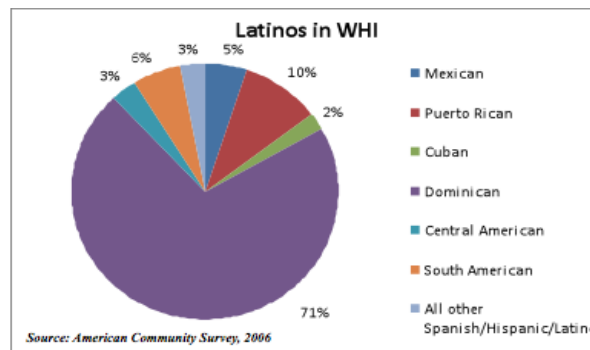
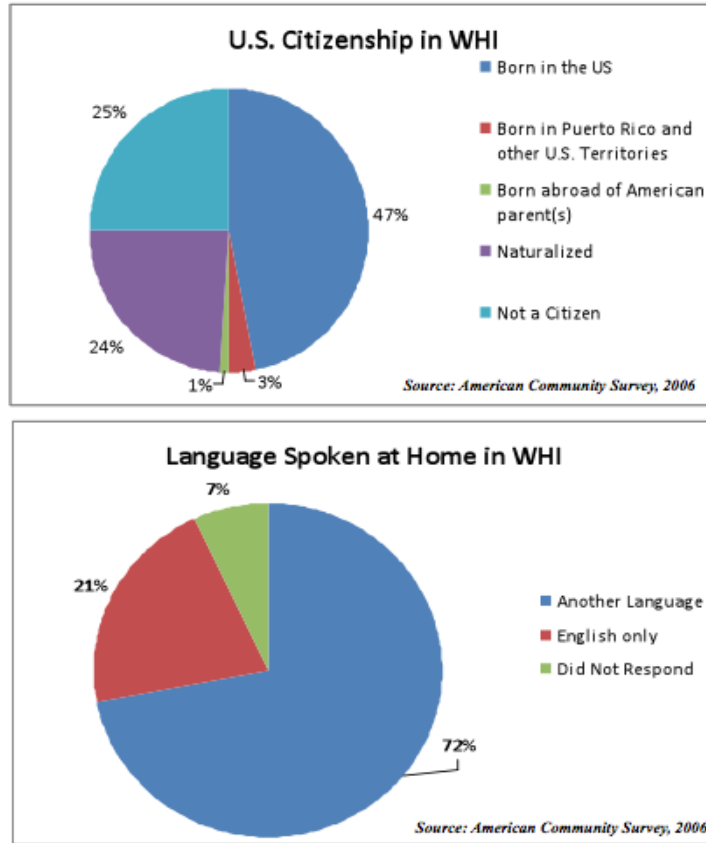


Figure 3: WHI Latino demographic in 1990, 2000, and 2006.

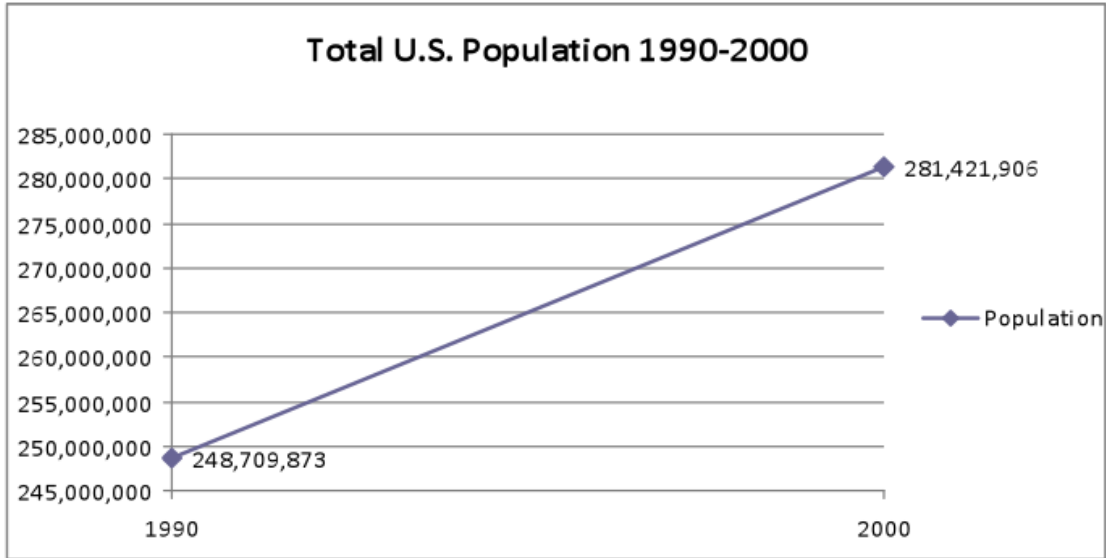


**Figure 4: WHI citizenship status and linguistic capabilities.**

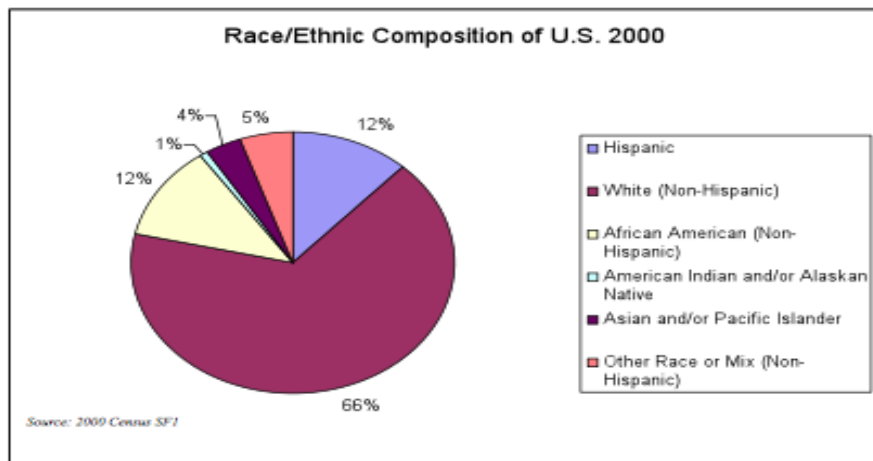
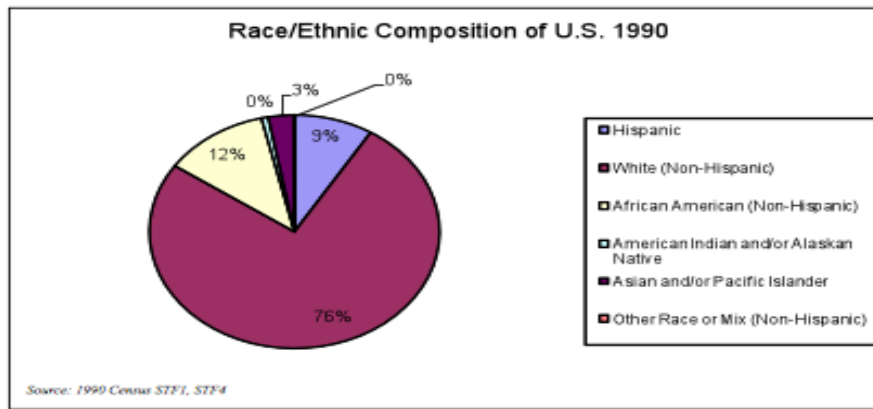
With regards to the changing population, the average personal income is \$17,575, which is only about seven thousand dollars above the federal poverty line. In addition, gentrification is causing significant increases in the income of the community, but the disparities between racial and ethnic groups remain staggering. Also, the gross rent increased 13% from 1990 to 2000 while the average income increased 1%. This suggests that the disparities in income between racial groups may be resulting in disparities in healthcare access and quality in WHI (see Figures 1-4).<sup>38</sup>

Similarly to WHI, the NYS and U.S. Latino populations have increased since 1990 while the white non-Latinos have decreased. The growing populations of NYS and the U.S. have shown significant increases in Mexicans and other Hispanic groups, respectively. Additionally, the amount of foreign-born people is increasing both on the state and national level. This has contributed to the increase in those who do not speak English. Lastly, there has been a progression towards higher income and rent in NYS, and U.S. which demonstrates that gentrification is also occurring on these levels (see Figures 5-14).<sup>38</sup>





**Figure 5: U.S. population 1990-2000.**  
 Source: Population Division- New York City Department of City Planning



**Figure 6: U.S. racial and ethnic composition in 1990 and 2000.**

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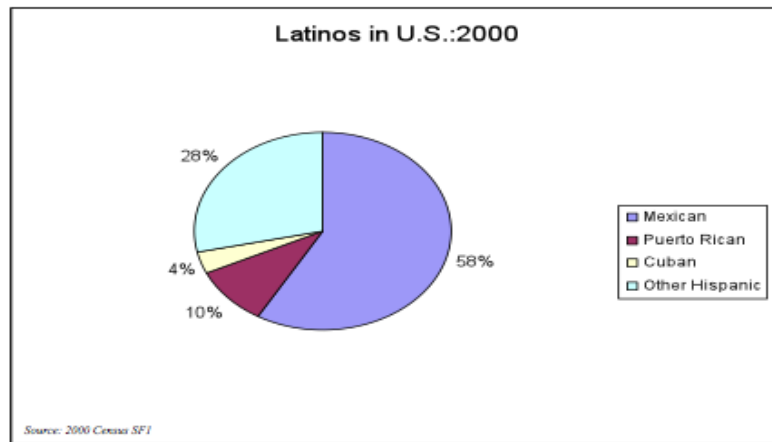
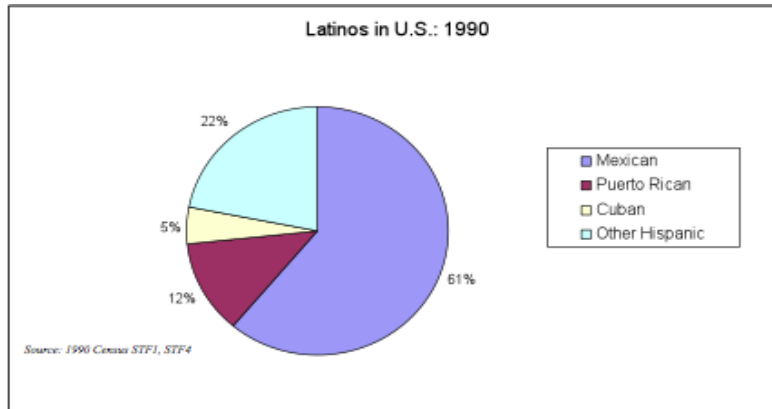


Figure 7: U.S. Latino demographic in 1990, 2000, and 2006.

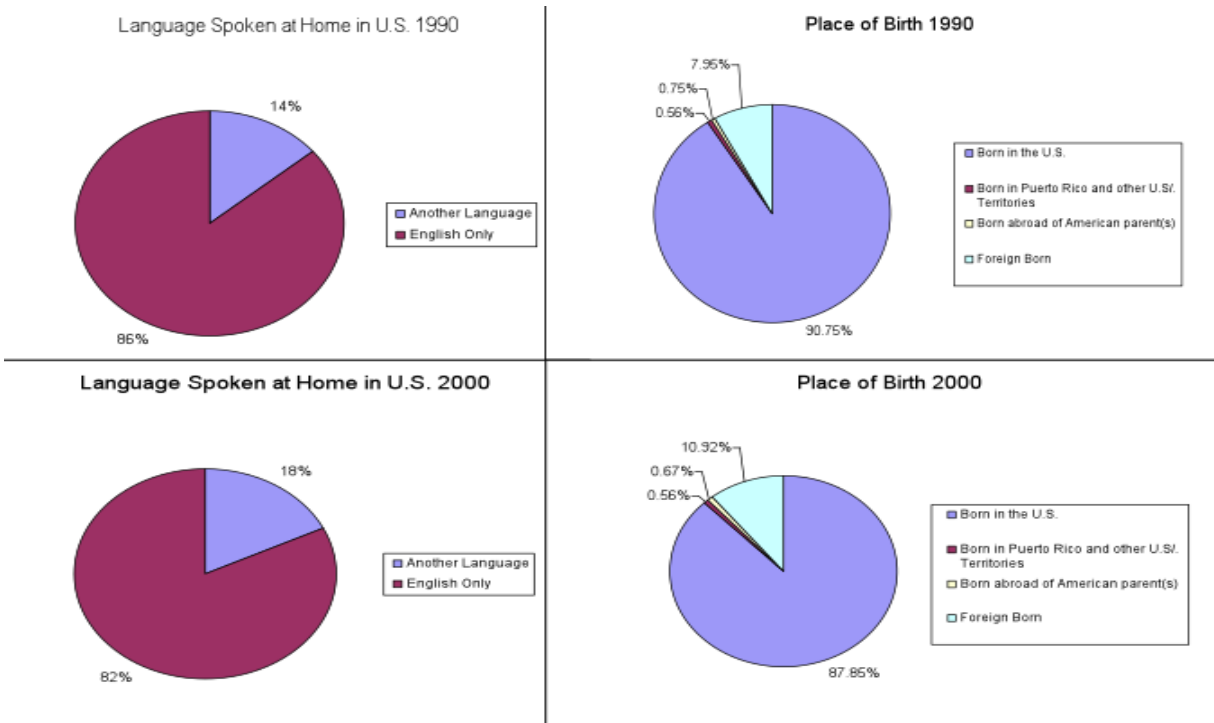
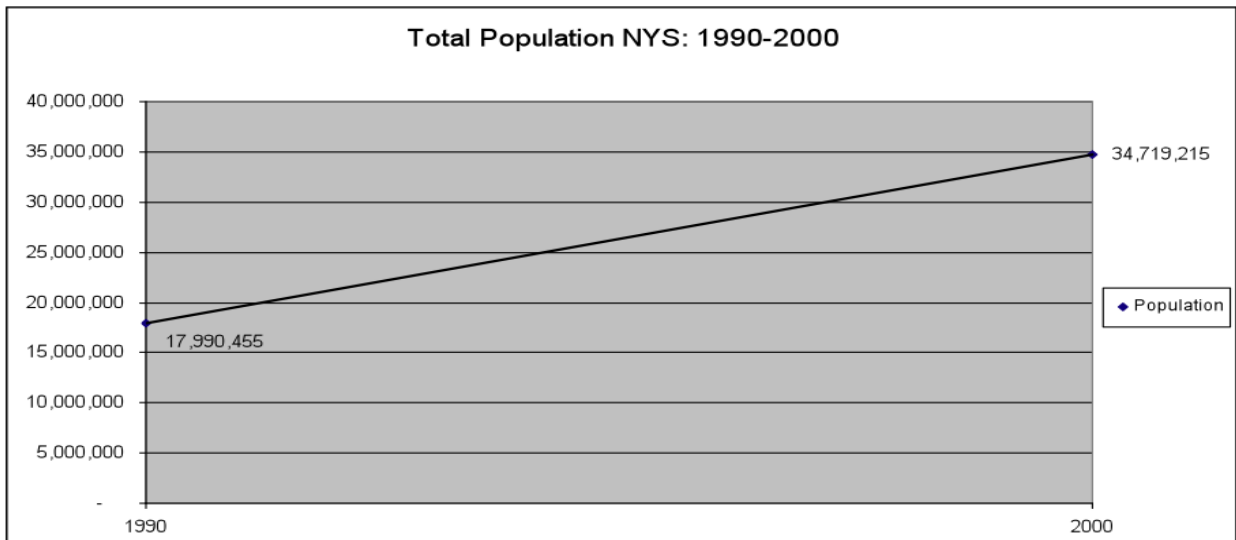
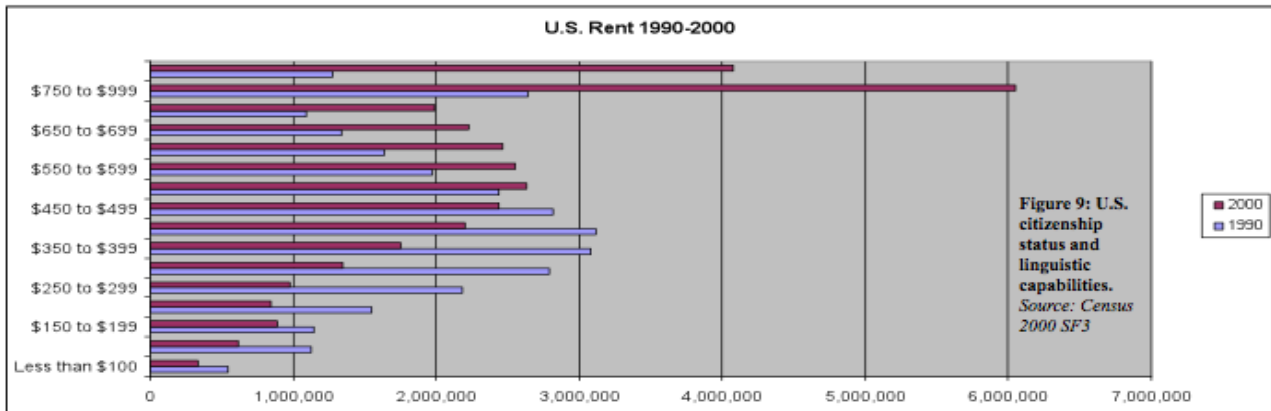
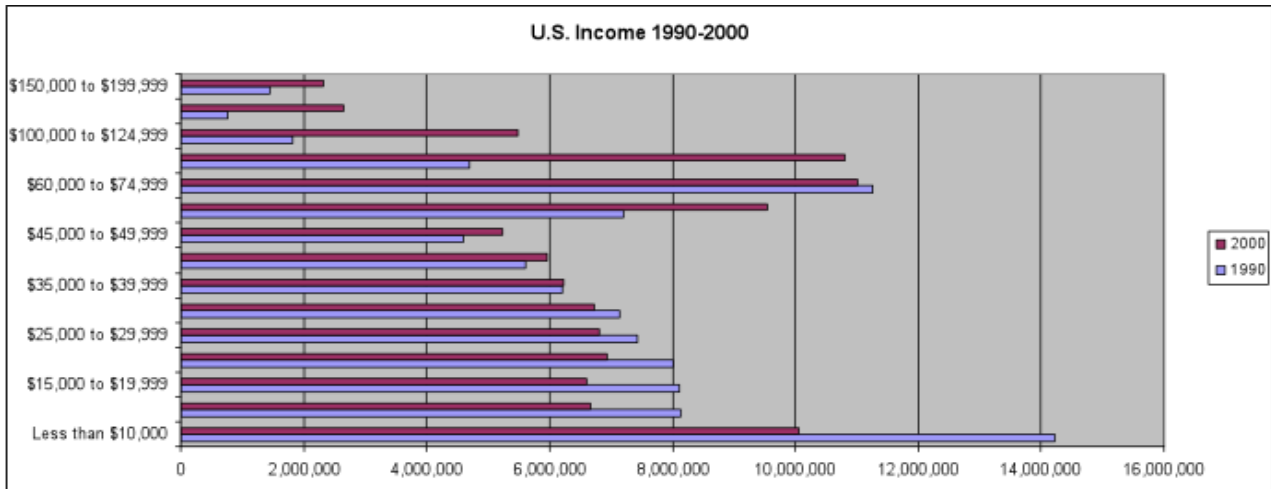


Figure 8: U.S. citizenship status and linguistic capabilities. Source: American Community Survey, 2006



**Figure 10: NYS population 1990-2000.**  
 Source: Population Division- New York City Department of City Planning

J. BALBIN: COMMUNITY PARTNERSHIP MODEL

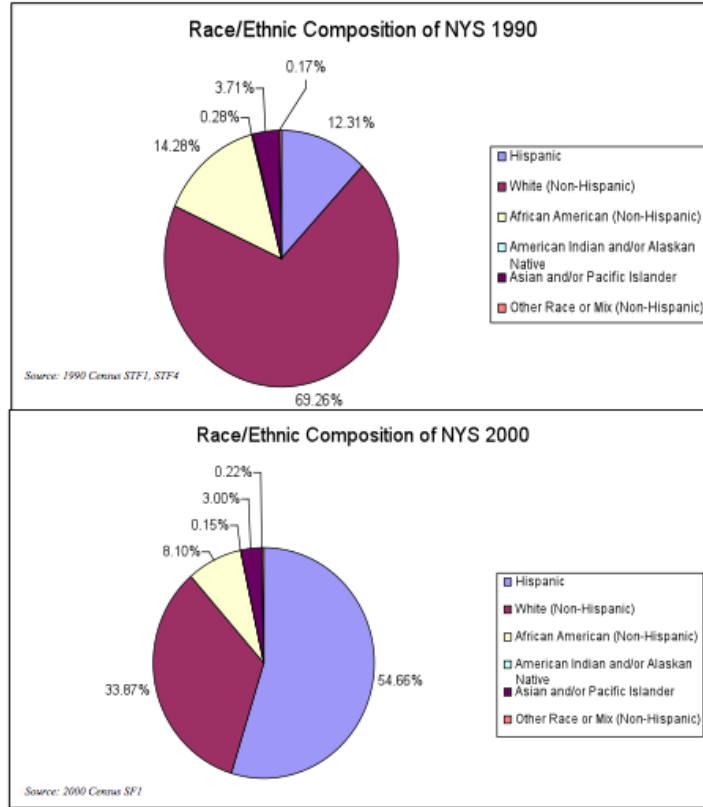


Figure 11: NYS racial and ethnic composition in 1990 and 2000.

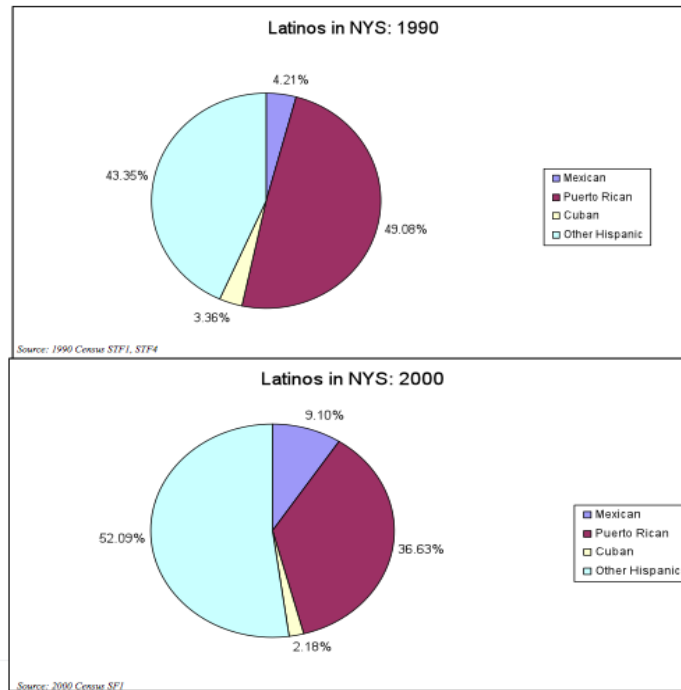


Figure 12: NYS Latino demographic in 1990, 2000, and 2006.

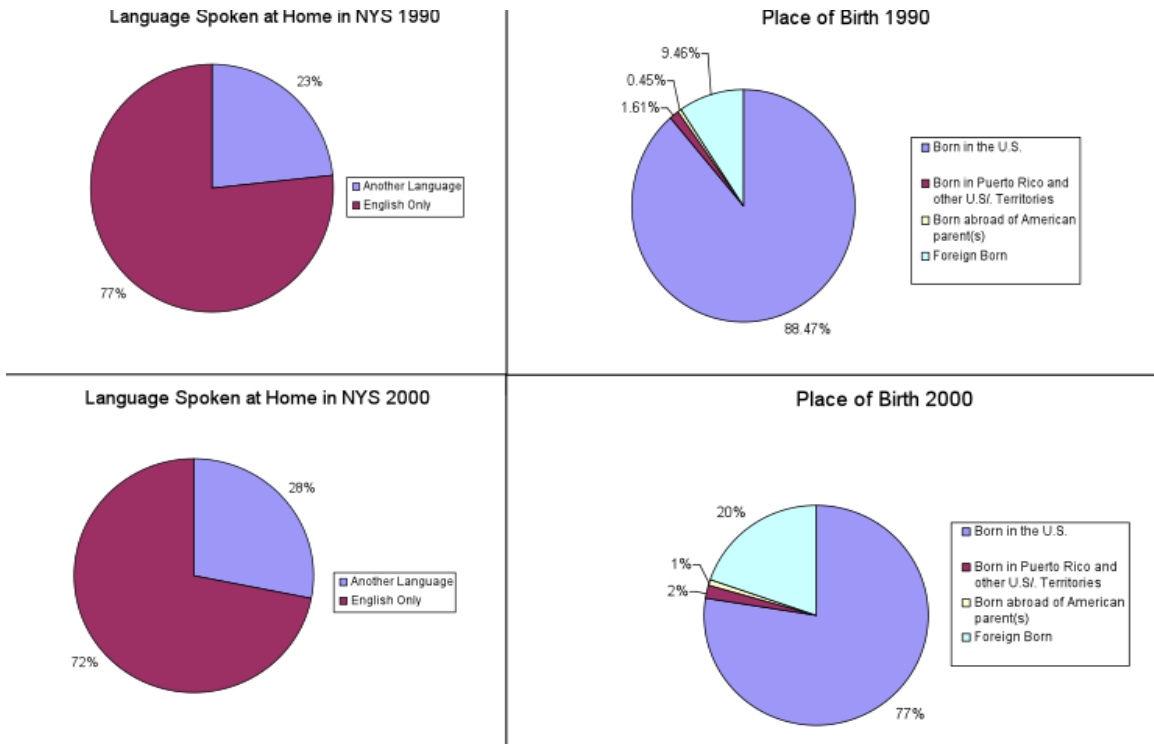


Figure 13: NYS citizenship status and linguistic capabilities. Source: American Community Survey, 2006

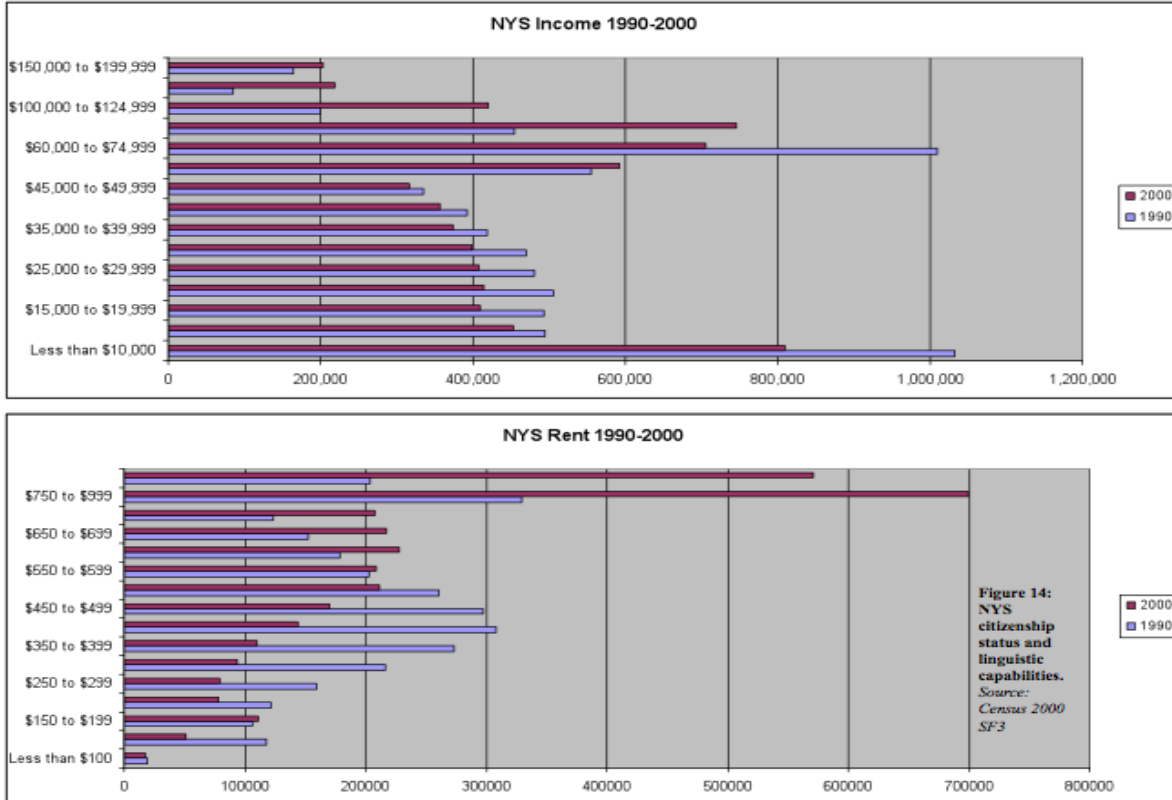


Figure 14: NYS citizenship status and linguistic capabilities. Source: Census 2000 SF3

From these demographics, the trends in the population and socioeconomics of WHI, NYS, and U.S. seem somewhat similar. This suggests that the CPM can be translated and applied to a wide spectrum of locations. Looking at the 1990 Census to the 2000 Census, the population significantly changes. The CPM allows for modification through its feedback mechanism to keep up with changing demographics. Because the population and economy are not static, it is beneficial to have a feedback mechanism. The model stays ahead of the population changes in order to consistently work at the same culturally competent, patient-centered, and community-tailored level.

Updating the CPM on a continual basis to fit with changing demographics will allow for culturally competent techniques to be modified and incorporated. CPM's feedback mechanism keeps the health delivery system up-to-date with population changes such as an influx in immigration and occurrence of gentrification. Consequently, culturally competent care results in more patient-centered care. As a result, by increasing patient-centeredness, the CPM contributes to enhancing the quality of care and health outcomes.<sup>4</sup> Thus, Cultural Competency is essential to the model for maximizing cross-cultural healthcare delivery and quality.

**Comparative analysis:** The analyses of the state and national health initiatives have revealed several consistencies with the NYPH's CPM. There were parallels in Phases I and II of the WHI initiative. There was, however, an inherent difference in the fact that CPM included a feedback evaluation, which NYS and the U.S. health legislations lacked (see Figure 15). Thus, without the feedback loop, the CPM targets all the same issues that both NYS and the federal government are attempting to address.

Also, in addressing Cultural Competency, the state and national legislations were different in their approach from the WHI initiative. The CPM NYPH has employed an aspect of healthcare delivery the state and national levels have yet to accomplish. NYPH has developed a comprehensive model that incorporates Cultural Competency not only into direct provider care but also into health interventions. Integrating Cultural Competency into a health model may more effectively diminish disparities, deliver quality care, provide patient-centered care, increase healthcare accessibility, employ HIT, and determine costs of implementation. In Albany and Washington D.C., however, they have yet to implement health models that integrate Cultural Competency. They have only instituted plans that focus solely on the provider using Cultural Competency. Ultimately, the WHI CPM, which integrates Cultural Competency and feedback, may be used as a broad framework for health models on both the state and national scales.

The in-depth analysis shows the positive results that Cultural Competency and feedback can produce. Feedback, one of the vital aspects of the CPM, plays a role in ensuring that the health delivery system is culturally competent to meet the needs of a specific population. If this is achieved in the WHI initiative, the CPM will prove to be effective, competent, and flexible to an ever-growing and changing population.

**Novel components of the CPM: Cultural Competency and feedback:** As discussed, the NYPH CPM is a culturally competent healthcare delivery model, which is driven forward by a feedback component. The model uses feedback on outcomes to adapt to shifts in a population's racial and ethnic composition or shortcomings in the health system. When a community's demographics change, the delivery model should be modified in order for it to remain culturally competent. As a result, the incorporation of a feedback mechanism maintains patient-centered care and culturally competent interventions. Thus, this feedback allows for the model to progress despite structural changes within the community or inherent weaknesses of the system.

The NQF defines Cultural Competency as an approach that strives to ensure equitable care is provided to all patients no matter their racial or ethnic background.<sup>3</sup> Physicians who employ cultural competence when dealing with patients may be more likely to contribute to the sustainability of a successful a health care model. Studies suggest the positive impacts of Cultural Competency on health outcomes, and implementing culturally competent community-based health initiatives such as the CPM may show beneficial results.<sup>1, 4-9</sup> Using the CPM as a framework, the state and national health models should incorporate Cultural Competency awareness in order to foster the relationship between the provider, the patient, and the patient's community.

Unlike the NYS and U.S. health plans, NYPH's CPM also uses feedback and evaluation to ensure healthcare quality and performance remain at a high caliber. In addition to how the feedback mechanism

is beneficial to keeping up with changing demographics, studies have shown that there is an inverse relationship between the effects of feedback evaluation and baseline scores.<sup>12</sup> This means that the CPM feedback will produce more drastic change from the practices with baseline assessments that showed poorer patient-centeredness and cultural competence. With Cultural Competency being conducive to providers for extracting information and establishing a patient-centered relationship, cultural competence assessment tools should be sought out to give providers a sense of their Cultural Competency and how they can improve on their patient interaction and enhance their quality of treatment.

Because feedback effects are related to baseline Cultural Competency levels, it is important to target which community health centers score high or low in Cultural Competency. With that being said, NYPH's CPM sets aside resources in Phase II to develop tests that educate providers on Cultural Competency. From this, Cultural Competency baseline metrics can be administered, and the effects of the Phase III interventions can be measured. Nonetheless, the CPM is replicable, testable, modifiable, and measurable. It is tailored to a community's demographics and socioeconomics and constantly modifies its interventions to fit the needs of changing populations. The results of CPM's incorporation of Cultural Competency, evaluation and feedback, and patient-centered care have yet to be determined. Based on the analysis, however, the potential in NYPH's overall implementation of the WHI CPM looks promising.

With an ever-changing economy and population, healthcare delivery feedback on the local, state, and national levels will be effective in adjusting to demographic shifts. Combining Cultural Competency, community-based intervention, and feedback evaluations, the CPM creates a health delivery model that can be modified over time and altered to fit the needs of its target location. Incorporating patient-centered care, tailoring culturally competent health programs, and offering feedback, the CPM provides a higher quality of care. The ability of the CPM to be modified allows it to be applied in areas with constantly shifting demographics such as that of WHI, NYS, and U.S.

**WHI CPM medical home:** It is important to note that the PCMH is not only being advocated by the NYPH CPM but also by national and state legislations (see Figure 15). According to the NCQA's Joint Principles with the American Academy of Family Physicians and Pediatrics, the American College of Physicians, and the American Osteopathic Association, a medical home provides comprehensive primary care for children, youths, and adults. It facilitates partnerships between patients, their physicians, and their families. This is carried out by enhancing the patient-provider relationship, focusing on patient-centered care, coordinating care through all the elements of the health system, facilitating care through HIT, and increasing quality and access.<sup>39</sup> In order to establish a PCMH, a primary care practice with its providers must qualify through the NCQA. These practices must complete a computerized survey and provide documentation to validate their completion. Practices are scored on a 100-point scale based on nine standards. They are eligible for three levels of accreditation with a score of 25 being the minimum to obtain recognition (see Appendix A. Figures 12a and 13a).<sup>16</sup>

The PCMHs of WHI, NYS, and the U.S. differ on several levels despite similarities in their focus on HIT, inter-provider communication, preventative care, and cost effectiveness. Because of the similarity in structure to NYS and the U.S. PCMHs, the CCNC medical home was used as the standard to compare to the WHI PCMH (see Figure 15). The CCNC has created a self-sustaining medical home where patients are provided longitudinal care using HIT, case managers provide follow-up services, provider performance data are used to maximize care, and community partners contribute to delivering patient-centered care. It has shown improvements in the quality of care and the fiscal savings of millions of dollars that could be produced through a PCMH.<sup>21</sup>

Unlike the CCNC, the WHI initiative integrates Cultural Competency into the PCMH using both the health needs analysis and healthcare delivery programs. Even though Cultural Competency is not included in NCQA's PCMH standards, the initiative includes this approach to increase the quality of care given. The discussion on Cultural Competency demonstrates its effectiveness on the provider-patient relationship and health outcomes.<sup>1, 4-9</sup> Thus, CPM's integration of the benefits of PCMHs with those of Cultural Competency may provide more positive results in patient care and healthcare delivery.

Furthermore, in comparison to the CCNC PCMH, the WHI initiative's medical home has added several components. This has included addressing CCNC's challenges and concerns for better interventions and follow-up care.<sup>21</sup> The WHI initiative calls for a greater extension of patient-centered

care outside the primary care practice. Beginning in Phase I and Phase II, the WHI CPM makes recommendations on community health intervention programs. The initiative uses the demographic data and community-based needs assessment from Phase I to develop health programs that are community-specific and population-tailored. In doing so, the WHI initiative ensures that the intervention will be culturally and linguistically competent. Ultimately, the WHI CPM's interventions are more community and patient-specific than those instituted by the CCNC.

Also, the WHI PCMH not only improves on community-tailored health programs but also increases the involvement of case managers in follow-up care. In addition to using HIT to manage a patient's records, patient-care coordinators are hired. Their purpose is to provide patient-centered information management by keeping in touch with outpatients through phone calls and ensuring patients comply with referrals. These coordinators have the responsibility to act as liaisons in care transitions. The purpose is to retain the patient and ensure the patient goes to the scheduled follow-up. The coordinator guides patients from the time they are in-patients or out-patients until they receive their follow-up primary care. Another care management responsibility includes coordinating with the patient for non-physician essential functions such as routine medication refills and therapeutic drug monitoring. This promotes quality treatment, produces better health outcomes for the patient, and cuts down the patient's reliance on the emergency department for episodic care.<sup>40</sup>

From this comparison, the improvements NYPH has made to the CCNC model may prove to be beneficial for the WHI PCMHs. As a result, the implication of applying the WHI PCMH could result in greater savings and better health outcomes than the ones documented by the CCNC. Even though data has not been gathered from implementing NYPH's PCMH, the comparative analysis suggests that the impact of the PCMH in WHI will be productive.

## **CONCLUSIONS**

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The NYPH CPM in WHI was found to be more comprehensive than the current health legislations in NYS and the U.S. (see Figure 15). Since the CPM is implemented on a local level, we examined the state and national levels to see if the model could be applied on a bigger scale. We analyzed demographic data, which demonstrated that the framework of CPM can be translated in NYS and the U.S. We showed that the Cultural Competency and feedback components make the NYPH model differ from the state and national legislations. Also, the inclusion of Cultural Competency, feedback, community-tailored interventions, and care management in the CPM PCMH has the promise to produce better health outcomes than the PCMH of NYS, the U.S., and CCNC. Together, these findings suggest that the CPM can be translated, modified, replicated, and measured on statewide and national levels.

Prior studies have shown that quality and delivery of healthcare are enhanced through Cultural Competency, feedback, and PCMHs.<sup>1, 4-9, 11, 13, 17-21</sup> The results of this analysis suggest that health policy legislators especially those working with underserved populations and minority communities should consider the CPM. The main application of the model is its incorporation of Cultural Competency and feedback. These aspects allow the CPM and PCMHs to be sustainable despite changes in demographics. Thus, the potential of implementing the CPM may result in reducing episodic care, diminishing disparities, increasing quality, and lowering healthcare costs.

Moreover, the similarities of health legislation on the local, state, and national levels is the support for using HIT, implementing preventative care, addressing disparities, and providing quality care through PCMHs (see Figure 15). These aspects of healthcare delivery aim to decrease the cost, increase the quality, and maximize the accessibility of care. On the other hand, the difference lies in NYS's programs and Obama's plans to enhance the delivery and quality of healthcare using prevention, patient-centered initiatives, and PCMHs without Cultural Competency. A culturally competent health model has yet to be established on these levels. NYS and the U.S. only present framework legislations that focus on culturally competent collaborations between the health provider, patient, and community that are limited in scope. In addition, they both lack a feedback mechanism that assesses how well or poorly the program impacts the community. Thus, unlike NYPH's WHI CPM initiative, NYS and the U.S. have not actively instituted comprehensive and measurable health models that improve the quality, cost, accessibility, affordability, and delivery of healthcare.



We can now use our data and previous studies to theorize possible implications of NYPH's CPM. Aside from the local level, the CPM can be integrated into health systems on the state and national levels. The fact that the CPM relies on a community-specific demographic health assessment makes the model efficient. The ten-year population analysis of the state and national census showed that the population continues to change (see Figure 13 and Figure 17). This makes it evident that implementing a modifiable health model such as the CPM allows for a maintainable health delivery system despite shifting demographics. Based on this, the WHI CPM can be implemented in NYS and the U.S. Thus, the CPM, with integrated feedback evaluations and Cultural Competency goals, is able to stay ahead of population shifts by continuously updating its target location's demographic analysis, which will ultimately allow for modification of the needs assessment and health interventions.

Based on the analysis, the implementation of NYPH's PCMH seems optimistic. The use of Cultural Competency, feedback, and demographic profiles of the community allows the medical home to be modified in order to fit the needs of the patients. Also, by addressing the challenges the CCNC medical home expressed, the CPM may improve community health interventions and follow-up care. Finally, because the CCNC flourished even when health insurance costs were high, this means that NYPH may be able to successfully institute its own PCMH in today's current state of rising premiums. The efficiency of implementing a heavily financed project such as the WHI PCMH when the cost of health insurance is high lies in the fact that costs would need to be strictly identified and adhered to.<sup>21</sup> The focus of the WHI initiative's PCMH leaves a high potential for success. Once NYPH WHI initiative sequesters enough funding, it will be important to note the results of the implementation of the WHI PCMH.

After NYPH has implemented its CPM in WHI, several studies should be pursued to discern the role of Cultural Competency and feedback in a health system and PCMHs. To confirm any positive or negative health outcomes, baseline metrics for Cultural Competency and feedback should be taken to confirm that these two factors, when integrated into a health model, affect health outcomes. Following this, the effectiveness of the WHI PCMH should be assessed using the Primary Care Assessment Tool (PCAT). The PCAT is designed to assess both structural and process features of primary care.<sup>41</sup> Also, if the WHI initiative proves successful, the CPM should be modified to fit state and national scales.

This study demonstrates that NYPH's CPM is a measurable, replicable, scalable, and testable health delivery system. Also, the analysis highly suggests that the CPM can be applied as a health model on the state and national levels. Evidence about Cultural Competency and feedback confirms the positive effects they may have on the CPM, PCMHs, and any health model. Also, the PCMH in the WHI initiative contains components that enhance patient-centeredness and follow-up care. The effect of the CPM is not known, but this study suggests that the model has the potential to flourish in diverse communities with shifting demographics and a prevalence of chronic disease. It seems that translating this model onto state and national platforms must be put on hold until NYPH's CPM produces results in WHI.

#### **ACKNOWLEDGEMENTS**

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#### **REFERENCES**

1. Gillies RR, Chenok KE, Shortell SM, Pawlson G, Wimbush JJ. The impact of health plan delivery system organization on clinical quality and patient satisfaction. *Health Services Research*. 2006; 41:1181-1199.
2. GovTrack.us: Tracking the U.S. Congress. "H.Res.271: Recognizing the need to support the development and enforcement of a well-informed national long-term care strategy to solve the problems of cost, quality, and access to long-term care in the home and community, and the imperativeness of

including long-term care in the comprehensive health care reform agenda," <http://www.govtrack.us/congress/bill.xpd?bill=hr111-271> (29 July 2009).

3. NQF National Quality Forum. "A Comprehensive Framework and Preferred Practices for Measuring and Reporting Cultural Competency," [http://www.qualityforum.org/Publications/2009/04/Executive\\_Summary\\_for\\_Cultural\\_Competency.aspx](http://www.qualityforum.org/Publications/2009/04/Executive_Summary_for_Cultural_Competency.aspx) (29 July 2009).

4. **Stewart M, Brown JB, Donner A, McWhinney IR, Oates J, Weston WW, Jordan J.** The impact of patient-centered care on outcomes. *J Fam Pract.* 2000; 49: 805-807.

5. **Stewart M, Brown JB, Weston WW, McWhinney IR, McWilliam CL, Freeman TR.** Patient-centered medicine. Transforming the clinical method. Second edition. *International Journal of Integrated Care.* 2005: 1-2.

6. **Carrillo JE, Green AR, Betancourt JR.** Cross-cultural primary care: A patient-based approach. *Ann Intern Med.* 1999; 130: 829-834.

7. **Betancourt JR, Green AR, Carrillo JE, Ananeh-Firempong O.** Defining cultural competence: A practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Reports.* 2003; 118: 293-302.

8. **Betancourt JR, Green AR, Carrillo JE, Park ER.** Cultural competence and health care disparities: Key perspectives and trends. *Health Affairs.* 2005; 24: 499-505.

9. **Goode TD, Dunne MC, Bronheim SM.** The evidence base for cultural and linguistic competency in health care. *The Commonwealth Fund.* 2006.

10. **Earley PC, Northcraft GB, Lee C, Lituchy TR.** Impact of process and outcome feedback on the relation of goal setting to task performance. 1990; 33: 87-105.

11. **Schectman JM, Kanwal NJ, Schroth WS, Elinsky EG.** The effect of an education and feedback intervention on group-model and network-model health maintenance organization physician prescribing behavior. *Medical Care.* 1995; 33: 139-144.

12. **Jamtvedt G, Young JM, Kristoffersen DT, O'Brian MA, Oxman AD.** Audit and feedback: Effects on professional practice and health care outcomes (Review). *Cochrane Database of Systematic Reviews.* 2006.

13. **Rittenhouse DR, Shortell SM.** The patient-centered medical home: will it stand the test of health reform? *JAMA.* 2009; 301: 2038-2040.

14. **Rosenthal TC.** The medical home: Growing evidence to support a new approach to primary care. *JABFM.* 2008; 21: 427-441.

15. **Dickens MD, Green JL, Kohrt AE, Pearson HA.** The medical home. 1992; 90:774.

16. National Committee for Quality Assurance. "PPC- Patient Centered Medical Home," <http://www.ncqa.org/tabid/631/Default.aspx> (29 July 2009).

17. **Allred NJ, Wooten KG, Kong Y.** The association of health insurance and continuous primary care in the medical home on vaccination coverage for 19- to 35-month-old children. *Pediatrics.* 2007; 119: 2006-2089.

18. **Shoen C, Osborn R, Doty MM, Bishop M, Peugh J, Murukutla N.** Toward higher-performance health systems: Adults' health care experiences in seven countries, 2007. *Health Affairs.* 2007; 26:717-734.
19. **Homer C, Klatka K, Romm D, Kuhlthau K, Bloom S, Newacheck P, Van Cleave J, Perrin JM.** A review of the evidence for the medical home for children with special health care needs. *Pediatrics.* 208; 922-937.
20. **Hillestad R, Bigelow J, Bower A, Girossi F, Meili R, Scoville R, Taylor R.** Can electronic medical record systems transform health care? Potential health benefits, savings, and costs. 2005; 24: 1103-1117.
21. **Steiner BD, Denham AC, Ashkin E, Newton WP, Wroth T, Dobson LA.** Community care of North Carolina: Improving care through community health networks. *Ann Fam Med.* 2008; 6: 361-367.
22. **Fisher ES.** Building a medical neighborhood for the medical home. *N Engl J Med.* 2008; 359: 1202-1205.
23. **NYSenate.gov.** "Senate Health Chair Thomas K. Duane Announces Agreement On Health Budget," <http://www.nysenate.gov/press-release/senate-health-chair-thomas-k-duane-announces-agreement-health-budget> (29 July 2009).
24. **NYSenate.gov.** "Search Legislation," <http://www.nysenate.gov/openleg/committee/health> (29 July 2009).
25. **New York State Department of Health.** "Community Service Plan (CSP)," [http://www.nyhealth.gov/prevention/prevention\\_agenda/community\\_service\\_plan.htm](http://www.nyhealth.gov/prevention/prevention_agenda/community_service_plan.htm) (29 July 2009).
26. **New York State Department of Health.** "Health Information Technology (Health IT)," <http://www.health.state.ny.us/technology/> (29 July 2009).
27. **New York State Department of Health.** "Request for Grant Applications - HEAL NY Phase 10 - Improving Care Coordination and Management through a Patient-Centered Medical Home Model Supported by an Inter-operable Health Information Infrastructure," <http://www.health.state.ny.us/funding/rfa/0903160302/attachments.pdf> (29 July 2009).
28. **Antos JR.** Symptomatic Relief, but no cure--- the Obama healthcare reform. *N Engl J Med.* 2008; 359: 1648-1650.
29. **Rep. Patrick Kennedy.** "General Health Issues," <http://patrickkenedy.house.gov/IssueDetails.aspx?IssueID=23> (29 July 2009).
30. **Oberlander J.** The partisan divide--- the McCain and Obama Plans for U.S. healthcare reform. *N Engl J Med.* 2008; 359: 781-784.
31. **Manchikant L, Hirsch JA.** Obama health care for all Americans: Practical implications. *Pain Physician.* 2009; 12: 289-304.
32. **Nutting PA, Miller WL, Crabtree BF, Jaen CR, Stewart EE, Stange KC.** Initial lessons from the first national demonstration project on practice transformation to a patient-centered medical home. *Ann Fam Med.* 2009; 7: 254-260.
33. **GovTrack.us:** Tracking the U.S. Congress. "S.1114: Medical Homes Act of 2009," <http://www.govtrack.us/congress/bill.xpd?bill=s111-1114> (29 July 2009).
34. **GovTrack.us:** Tracking the U.S. Congress. "S.1262: Medical Efficiency and Delivery Improvement of Care Act (MEDIC) of 2009," <http://www.govtrack.us/congress/bill.xpd?bill=s111-1262> (29 July 2009).

35. American Academy of Family Physicians: Strong Medicine for America. "Description of Policy Options, Transforming the Health Care Delivery System: Proposals to Improve Patient Care and Reduce Health Care Costs," <http://www.finance.senate.gov/sitepages/leg/LEG%202009/042809%20Health%20Care%20Description%20of%20Policy%20Option.pdf> (29 July 2009).
36. GovTrack.us: Tracking the U.S. Congress. "H.R.2350: Preserving Patient Access to Primary Care Act of 2009," <http://www.govtrack.us/congress/bill.xpd?bill=h111-2350> (29 July 2009).
37. GovTrack.us: Tracking the U.S. Congress. "H.R.1614: Community Coalitions for Access and Quality Improvement Act of 2009," <http://www.govtrack.us/congress/bill.xpd?bill=h111-1614> (29 July 2009).
38. Census Bureau Homepage. "U.S. Census Bureau," <http://www.census.gov/> (29 July 2009).
39. National Committee for Quality Assurance. "Joint Principles of the PCMH," <http://www.ncqa.org/LinkClick.aspx?fileticket=ZevOtHfYTjY%3d&tabid=631&mid=2435&forcedownload=true> (29 July 2009).
40. Congressional Budget Office. "An analysis of the literature on disease management programs," <http://www.cbo.gov/ftpdocs/59xx/doc5909/10-13-DiseaseMngmnt.pdf> (29 July 2009).
41. **Malouin RA, Starfield B, Sepulveda MJ.** Evaluating the tools used to assess the medical home. *Managed Care*. 2009; 44-49.

## APPENDIX A

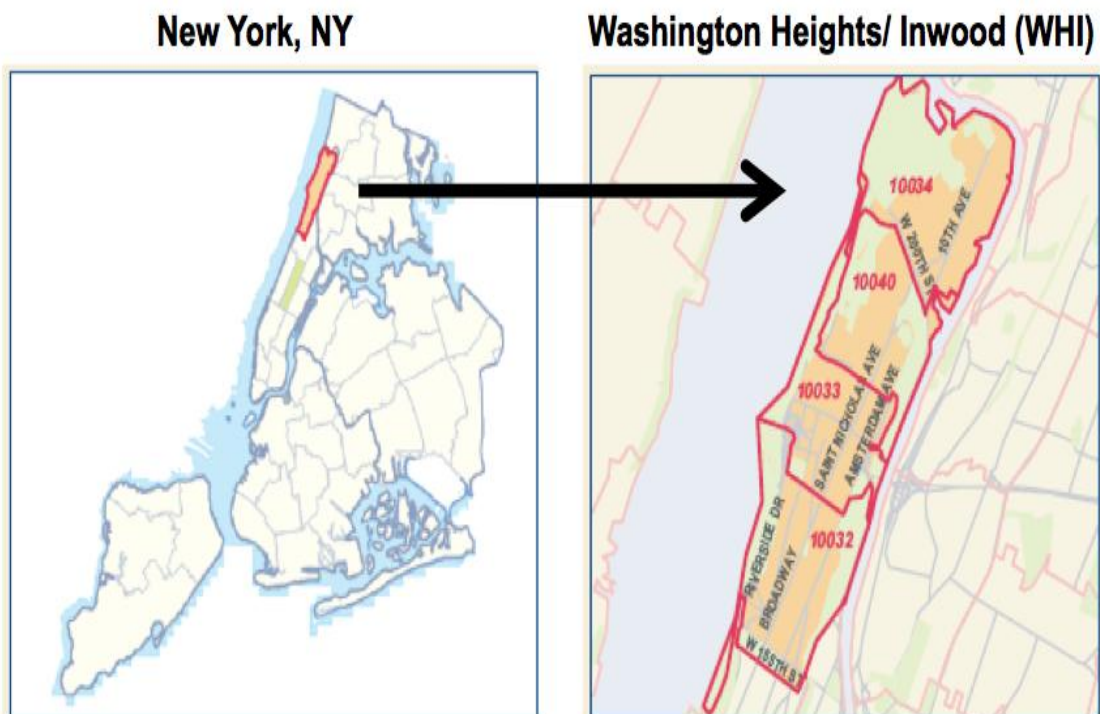


Figure 1a: Geographic location of WHI in Northern Manhattan.

**Project Summary**

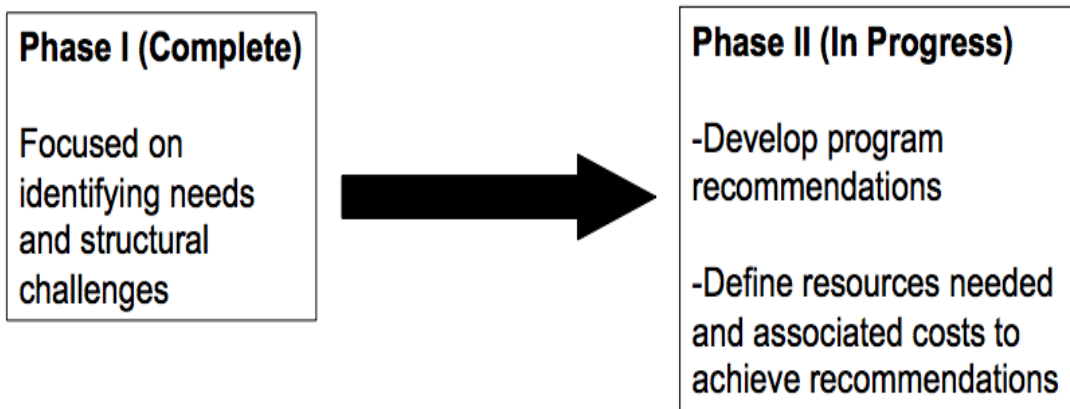


Figure 2a: Phases I and II of NYPH's Community Partnership Model.

	Medical Home and Access to Care	Disease Prevention & Management	Cultural Competency	Insurance Access	Independent Community Physicians (ICP)	Information Technology	Financing Alternatives
<b>G O A L S</b>	Ensure access to primary and appropriate specialty care for all members of the community by developing a medical home model	Enhance disease prevention and management programs in key areas	Develop plan to deliver culturally competent medical care	Maximize insurance participation and coordination among NYP, CUMC, ICPs and community members	Develop collaborative relationship with community MDs to achieve WHI's objectives	Develop IT solutions to achieve WHI's objectives	Determine cost of recs from Phase II  Investigate and recommend alternative funding sources
<b>T A S K S</b>	<p><b>Assessment</b> Inventory existing initiatives and identify gaps between the NQQA definition and our own practices</p> <p><b>Continuum of Care</b> Determine the appropriate balance of primary and specialty care needed to support the Medical Home (Issue of ACS in the ED)</p> <p><b>Operations</b> Develop recommendations to address structural inefficiencies that act as a barrier to primary and specialty care</p> <p><b>Outreach</b> Develop communication and education strategy</p>	<p><b>Sub-groups</b> Adult, Pediatrics, OB/GYN and Psych</p> <p><b>Assessment</b> Inventory existing disease prevention and management initiatives, identify gaps</p> <p><b>Key Areas</b> Choose 2 focus areas per sub-group; develop plan to enhance disease prevention and management for those areas; include role of CTSA, education and research</p> <p><i>NB: Adult MUST choose CHF as one area</i></p> <p><b>Outreach</b> Develop communication and education strategy</p>	<p><b>Assessment</b> Inventory existing initiatives and identify gaps between NQF standards and our own practices</p> <p><b>Training &amp; Tools</b> Develop recommendations for training care providers and other stakeholders in culturally competent care</p> <p><b>Outreach</b> Determine the appropriate mechanism and forum for reaching out to the community with regard to health initiatives</p>	<p><b>Assessment</b> Inventory hospital, CU, ICP and community members' insurance participation</p> <p><b>Access</b> Develop algorithm to address different categories of patients with and without insurance, including children who are eligible for health insurance but not insured (EPHINE)</p> <p><b>Outreach</b> Develop a recommendation for educating community on insurance options</p>	<p><b>Collaboration</b> Develop plans for working with ICPs to achieve medical homes, cultural competency, IT connectivity, insurance access among providers and the appropriate balance between primary and specialty care</p> <p><b>Communication</b> Create messaging strategy for communicating WHI to other ICPs in the community</p>	<p><b>Communication</b> Develop a comprehensive communication system to follow patients through their transitions of care</p> <p><b>Operations</b> Develop systems to assist in the case management of patients through their transitions of care</p> <p><b>Disease Management</b> Provide infrastructure for disease management (e.g., registries), outcomes reporting and decision support</p>	<p><b>Valuation</b> Determine cost of resources recommended by each group from Phase II</p> <p><b>Funding</b> Identify alternative funding sources (e.g., grants) and create organizing framework for matching funding sources with WHI initiatives</p>

Figure 3a: Phase II workgroups of NYPH's Community Partnership Model.

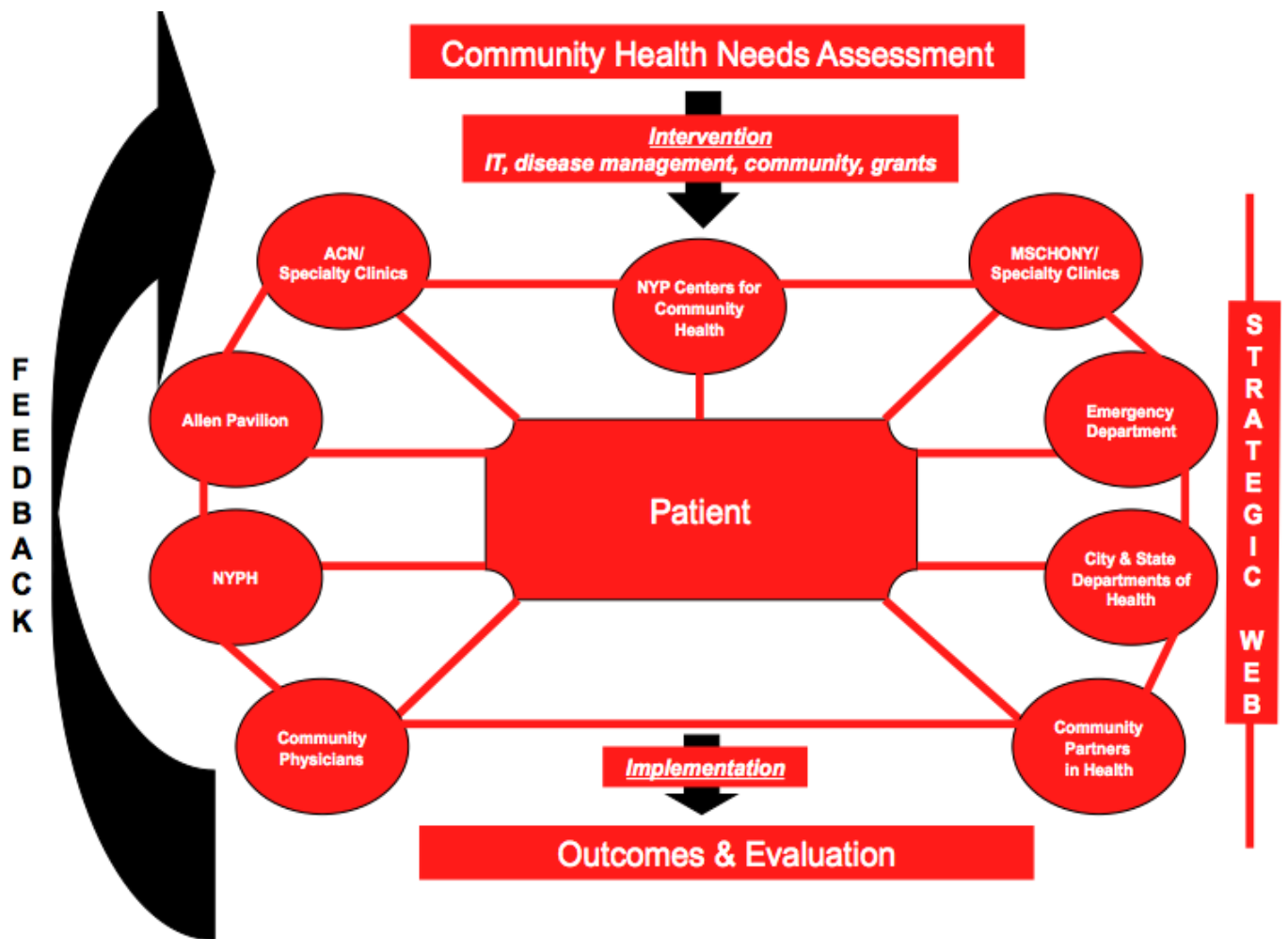


Figure 4a: NYPH Community Partnership Model.





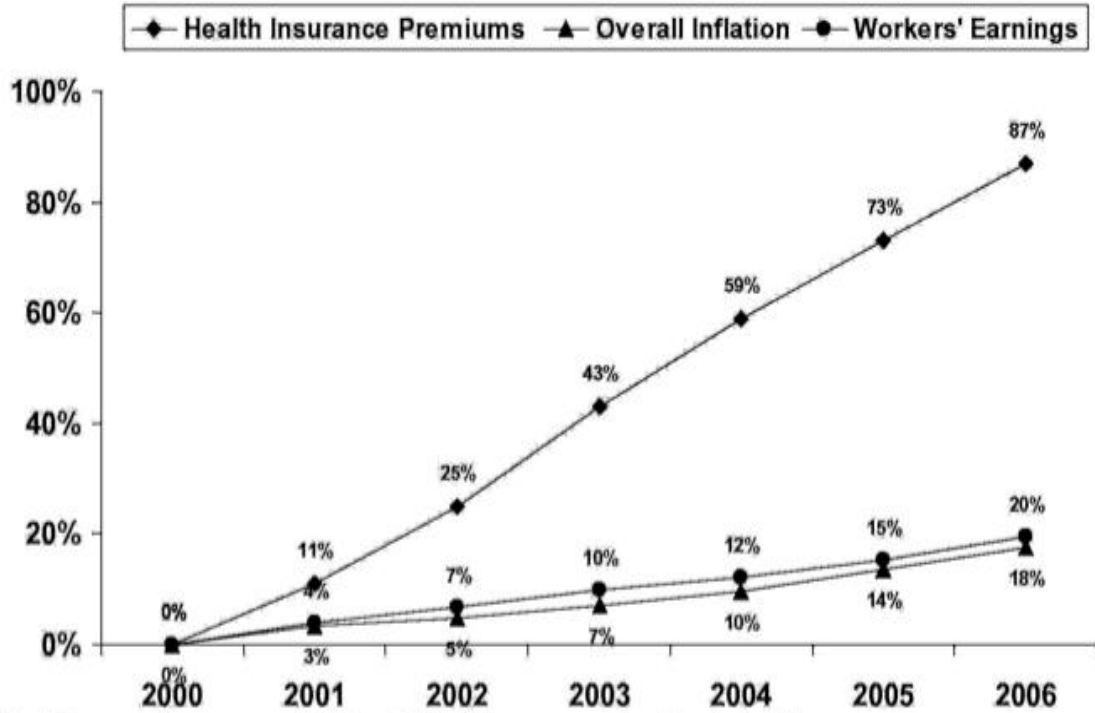
## NATIONAL HEALTHCARE EXPENDITURES 1970-2007

Spending category	1970	1980	1990	2000	2004	2005	2006	2007
<b>NHE, billions</b>	<b>\$74.9</b>	<b>\$253.4</b>	<b>\$714.1</b>	<b>\$1,353.2</b>	<b>\$1,854.8</b>	<b>\$1,980.6</b>	<b>\$2,112.7</b>	<b>\$2,241.2</b>
Health services and supplies	67.1	233.4	666.8	1,264.4	1,733.1	1,850.4	1,976.1	2,098.1
Personal health care (PHC)	62.9	214.8	607.6	1,139.2	1,550.2	1,655.1	1,765.5	1,878.3
Hospital care	27.6	101.0	251.6	416.9	566.8	607.5	649.3	696.5
Professional services	20.6	67.3	216.8	426.8	581.2	621.5	661.4	702.1
Phys. and clinical services	14.0	47.1	157.6	288.6	393.6	422.2	449.7	478.8
Other prof. services	0.7	3.6	18.2	39.1	52.9	56.0	58.7	62.0
Dental services	4.7	13.3	31.5	62.0	81.5	86.4	90.5	95.2
Other PHC	1.2	3.3	9.6	37.1	53.3	56.9	62.5	66.2
Home health and nursing home care	4.3	20.9	65.2	125.8	157.9	168.7	178.4	190.4
Home health care <sup>a</sup>	0.2	2.4	12.6	30.5	42.7	48.1	53.0	59.0
Nursing home care <sup>a</sup>	4.0	18.5	52.6	95.3	115.2	120.6	125.4	131.3
Retail outlet sales of medical products	10.5	25.7	74.0	169.8	244.3	257.5	276.4	289.3
Prescription drugs	5.5	12.0	40.3	120.6	188.8	199.7	216.8	227.5
Durable medical equipment	1.6	3.8	11.3	19.4	22.8	23.8	24.2	24.5
Other nondurable medical products	3.3	9.8	22.5	29.8	32.7	34.0	35.3	37.4
Program administration and net cost of private health insurance	2.8	12.2	39.2	81.8	128.8	138.7	150.4	155.7
Government public health activities	1.4	6.4	20.0	43.4	54.0	56.6	60.2	64.1
Investment	7.8	19.9	47.3	88.8	121.7	130.2	136.6	143.1
Research <sup>b</sup>	2.0	5.4	12.7	25.6	38.8	40.2	41.3	42.4
Structures and equipment	5.8	14.5	34.7	63.2	83.0	90.0	95.2	100.7
Population (millions)	210.2	230.4	253.8	282.5	293.5	296.2	299.1	302.0
NHE per capita	\$356	\$1,100	\$2,814	\$4,789	\$6,319	\$6,687	\$7,062	\$7,421
GDP, billions of dollars	\$1,039	\$2,790	\$5,803	\$9,817	\$11,686	\$12,422	\$13,178	\$13,808
<b>NHE as percent of GDP</b>	<b>7.2%</b>	<b>9.1%</b>	<b>12.3%</b>	<b>13.8%</b>	<b>15.9%</b>	<b>15.9%</b>	<b>16.0%</b>	<b>16.2%</b>

**SOURCES:** Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group; and U.S. Department of Commerce, Bureau of Economic Analysis and Bureau of the Census.

**Figure 5a: Cost of healthcare in the U.S (modified from Health Affairs, 2009;28:246-261).**

## Cumulative Changes in Health Insurance Premiums, Overall Inflation, and Workers' Earnings 2000 - 2006



Note: Data on premium increases reflect the cost of health insurance premiums for a family of four.

Source: KFF/HRET Survey of Employer-Sponsored Health Benefits, 2001-2006; Bureau of Labor Statistics, Consumer Price Index, U.S. City Average of Annual Inflation (April to April), 2001-2006; Bureau of Labor Statistics, Seasonally Adjusted Data from the Current Employment Statistics Survey (April to April), 2001-2006.

Figure 6a: Rising costs of health insurance versus rising wages.

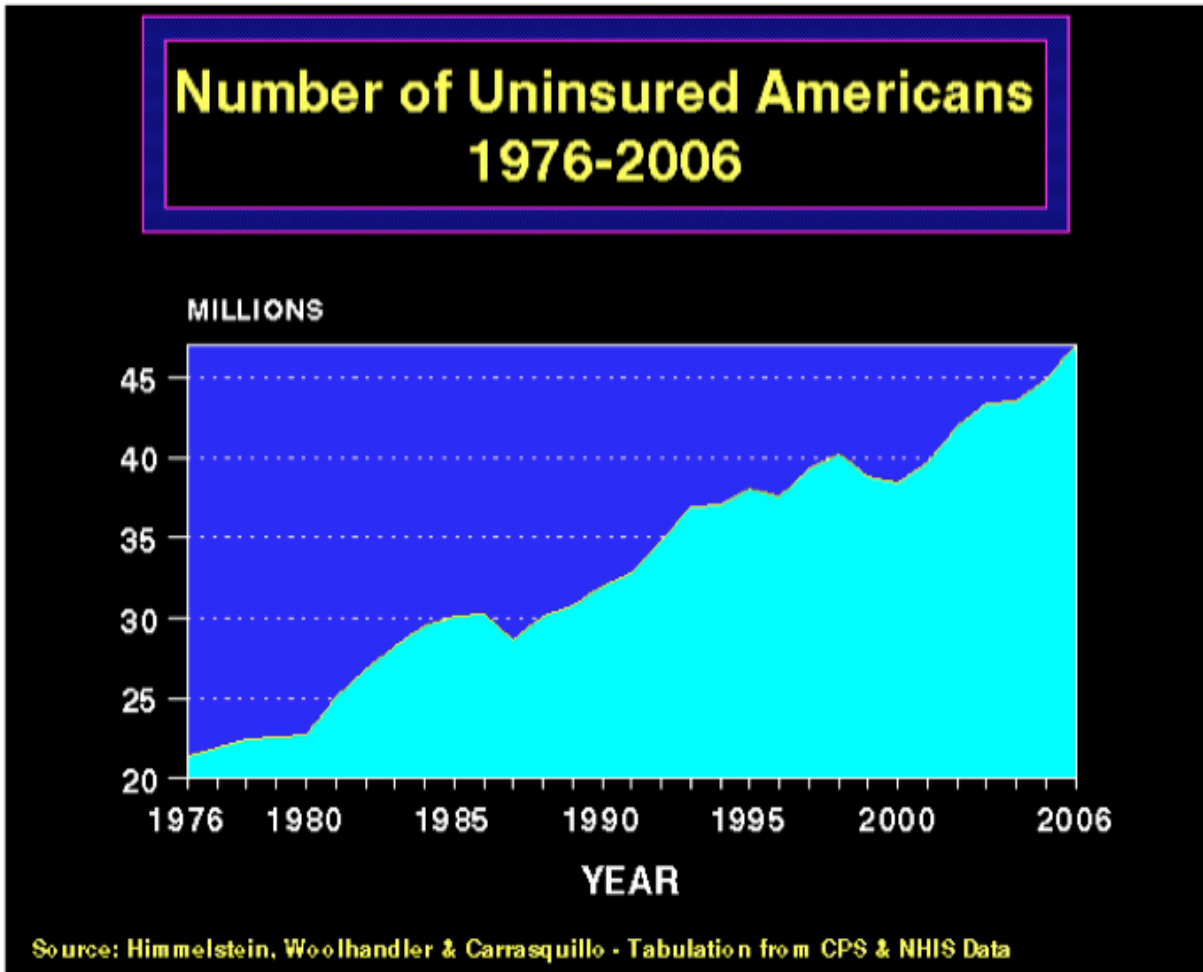


Figure 7a: Increasing amount of those uninsured in the U.S.

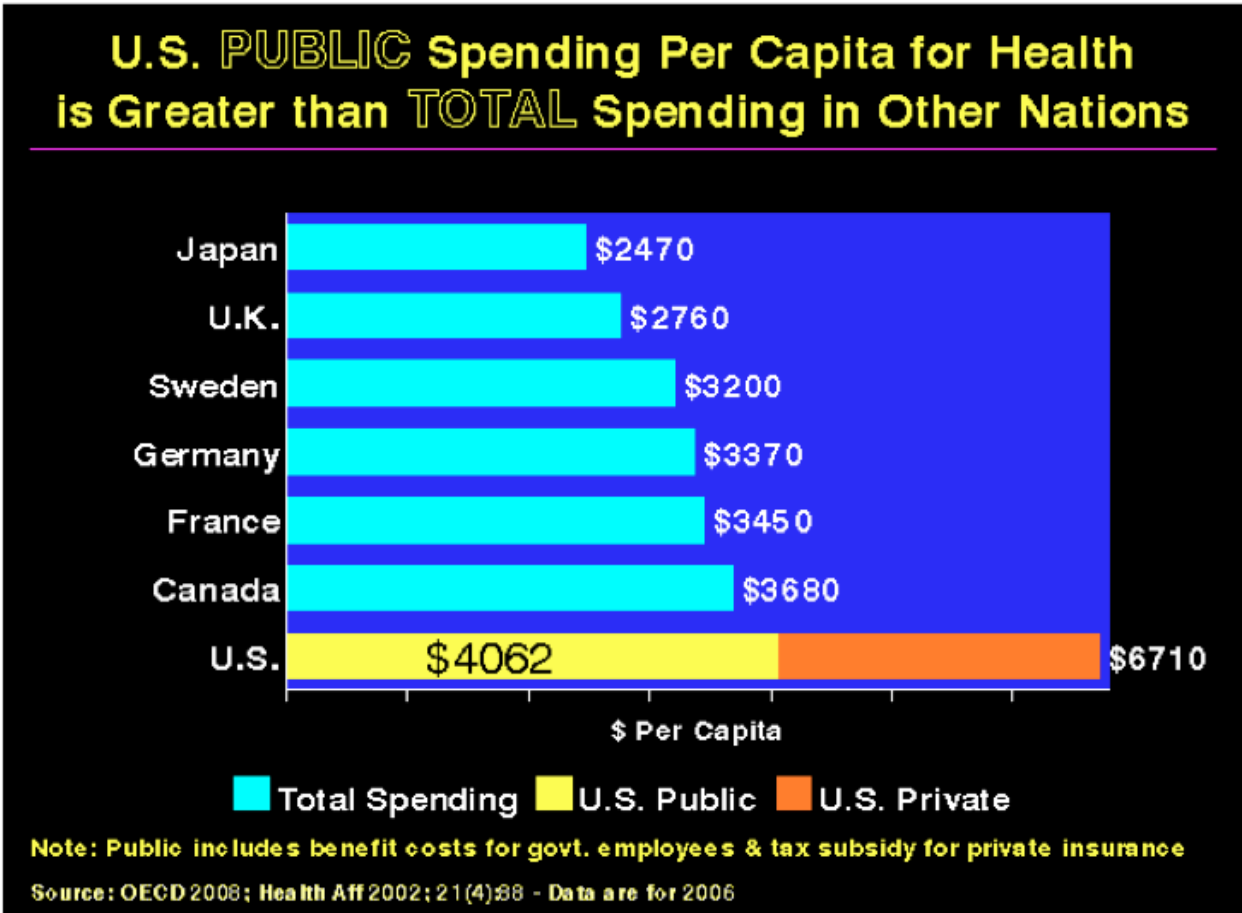
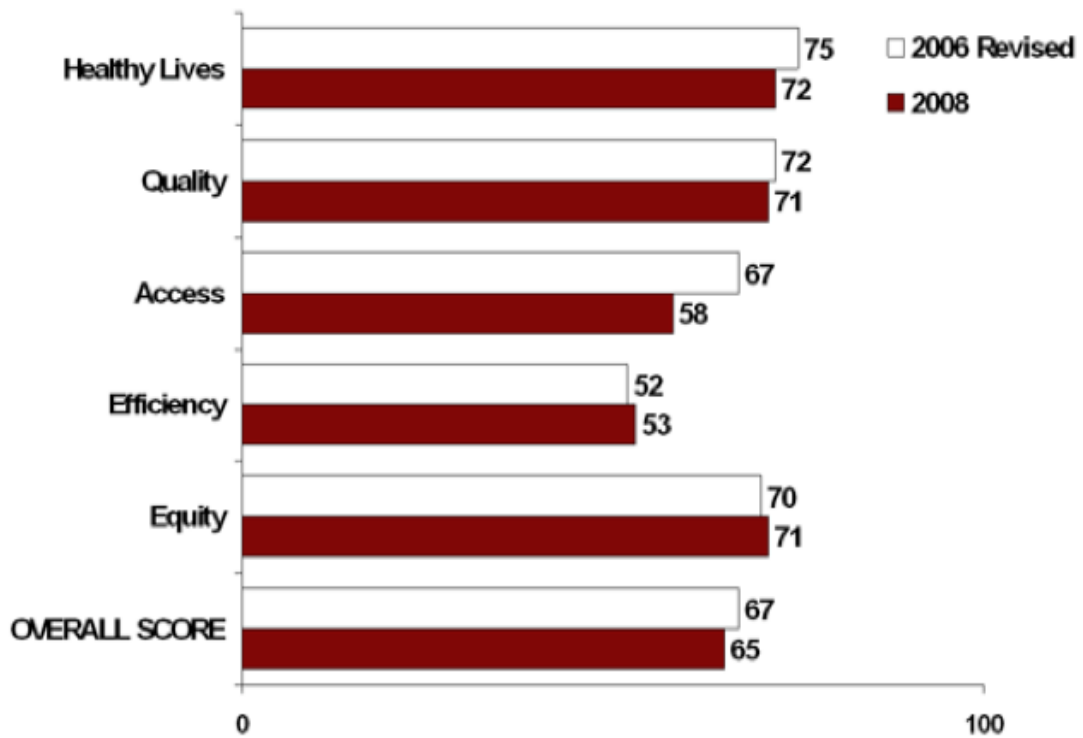


Figure 8a: U.S. per capita spending on healthcare in relation to other developed countries.

### Scores: Dimensions of a High Performance Health System



Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2008

Figure 9a: Diminishing of the overall score of health system performance in the U.S.

## Obama Administration Proposed Reforms

- “Play or pay” employer mandate requiring businesses either to offer workers insurance or to pay a tax (very small businesses would be exempt)
- Creation of a new national health plan (similar to Medicare) for the uninsured and small businesses
- Establishment of new national health insurance exchange that would offer choice of private insurance options for the uninsured and small businesses
- Mandate that all children must have coverage
- Subsidies for lower-income Americans to help them afford coverage
- Expanded coverage financed through the payroll tax, letting tax cuts for families making over \$250,000 expire, and savings from electronic medical records, disease management, and other system reforms
- Regulation of all private insurance plans to end risk rating based on health status
- Establishment of federal reinsurance program to insure businesses against the costs of workers’ expensive medical episodes
- Other proposed measures to control costs and improve quality:
  - Reduction in the administrative costs of private insurance
  - Accelerated adoption of electronic medical records
  - Promotion of disease management
  - Emphasis on prevention and public health
  - Payment of providers on the basis of performance and outcomes
  - Reduction in excessive payments to private plans contracting with Medicare
  - Allowing Medicare to negotiate with drug companies
  - Establishment of a comparative-effectiveness research institute

**Figure 10a: Obama’s proposal for health reform.**

### Healthcare Spending Provisions of the American Recovery and Reinvestment Act of 2009

Program or Investment Area	Amount and Purpose of Funding
Comparative effectiveness research	\$1.1 billion, of which \$300 million will be administered by the Agency for Healthcare Research and Quality, \$400 million by the NIH, and \$400 million by the secretary of health and human services.
Continuation of health insurance coverage for unemployed workers	\$24.7 billion to provide a 65% federal subsidy for up to 9 months of premiums under the Consolidated Omnibus Budget Reconciliation Act. The subsidy will help workers who lose their jobs to continue coverage for themselves and their families.
Departments of Defense and Veterans Affairs	More than \$1.4 billion for the construction and renovation of health care facilities.
Health information technology	\$19.2 billion, including \$17.2 billion for financial incentives to physicians and hospitals through Medicare and Medicaid to promote the use of electronic health records and other health information technology and \$2 billion for affiliated grants and loans to be administered by the Office of the National Coordinator for Health Information Technology. Physicians may be eligible for grants of \$40,000 to \$65,000 over multiple years, and hospitals for up to \$11 million.
Health Resources and Services Administration	\$2.5 billion, including \$1.5 billion for construction, equipment, and health information technology at community health centers; \$500 million for services at these centers; \$300 million for the National Health Services Corps (NHSC); and \$200 million for other health professions training programs.
Medicare	\$338 million for payments to teaching hospitals, hospice programs, and long-term care hospitals.
Medicaid and other state health programs	\$87 billion for additional federal matching payments for state Medicaid programs for a 27-month period that began October 1, 2008, and \$3.2 billion for additional state fiscal relief related to Medicaid and other health programs.
National Institutes of Health	\$10 billion, including \$8.2 billion for new grants and related activities and \$1.8 billion for construction and renovation of NIH buildings and facilities, extramural research facilities, and research equipment.
Prevention and wellness	\$1 billion, including \$650 million for clinical and community-based prevention activities that will address rates of chronic diseases, as determined by the secretary of health and human services; \$300 million to the Centers for Disease Control and Prevention for immunizations for low-income children and adults; and \$50 million to states to reduce health care-associated infections.
Public Health and Social Services Emergency Fund	\$50 million to the DHHS to improve the security of information technology.

Adapted from: Steinbrook R. Health Care and the American Recovery and Reinvestment Act. *N Engl J Med* 2009; 36: 1057-1606 (60).

Figure 11a: American Recovery and Reinvestment Act of 2009.



## PPC-PCMH Content and Scoring

Standard 1: Access and Communication		Pts	Standard 5: Electronic Prescribing		Pts
A.	Has written standards for patient access and patient communication**	4	A.	Uses electronic system to write prescriptions	3
B.	Uses data to show it meets its standards for patient access and communication**	5	B.	Has electronic prescription writer with safety checks	3
		9	C.	Has electronic prescription writer with cost checks	2
Standard 2: Patient Tracking and Registry Functions		Pts			8
A.	Uses data system for basic patient information (mostly non-clinical data)	2	Standard 6: Test Tracking		Pts
B.	Has clinical data system with clinical data in searchable data fields	3	A.	Tracks tests and identifies abnormal results systematically**	7
C.	Uses the clinical data system	3	B.	Uses electronic systems to order and retrieve tests and flag duplicate tests	6
D.	Uses paper or electronic-based charting tools to organize clinical information**	6			13
E.	Uses data to identify important diagnoses and conditions in practice**	4	Standard 7: Referral Tracking		PT
F.	Generates lists of patients and reminds patients and clinicians of services needed (population management)	3	A.	Tracks referrals using paper-based or electronic system**	4
		21			4
Standard 3: Care Management		Pts	Standard 8: Performance Reporting and Improvement		Pts
A.	Adopts and implements evidence-based guidelines for three conditions **	3	A.	Measures clinical and/or service performance by physician or across the practice**	3
B.	Generates reminders about preventive services for clinicians	4	B.	Survey of patients' care experience	3
C.	Uses non-physician staff to manage patient care	3	C.	Reports performance across the practice or by physician **	3
D.	Conducts care management, including care plans, assessing progress, addressing barriers	5	D.	Sets goals and takes action to improve performance	3
E.	Coordinates care//follow-up for patients who receive care in inpatient and outpatient facilities	5	E.	Produces reports using standardized measures	2
		20	F.	Transmits reports with standardized measures electronically to external entities	1
Standard 4: Patient Self-Management Support		Pts			15
A.	Assesses language preference and other communication barriers	2	Standard 9: Advanced Electronic Communications		Pts
B.	Actively supports patient self-management**	4	A.	Availability of Interactive Website	1
		6	B.	Electronic Patient Identification	2
			C.	Electronic Care Management Support	1
					4

**\*\*Must Pass Elements**




Figure 12a: NCQA's 9 standards for a PCMH.

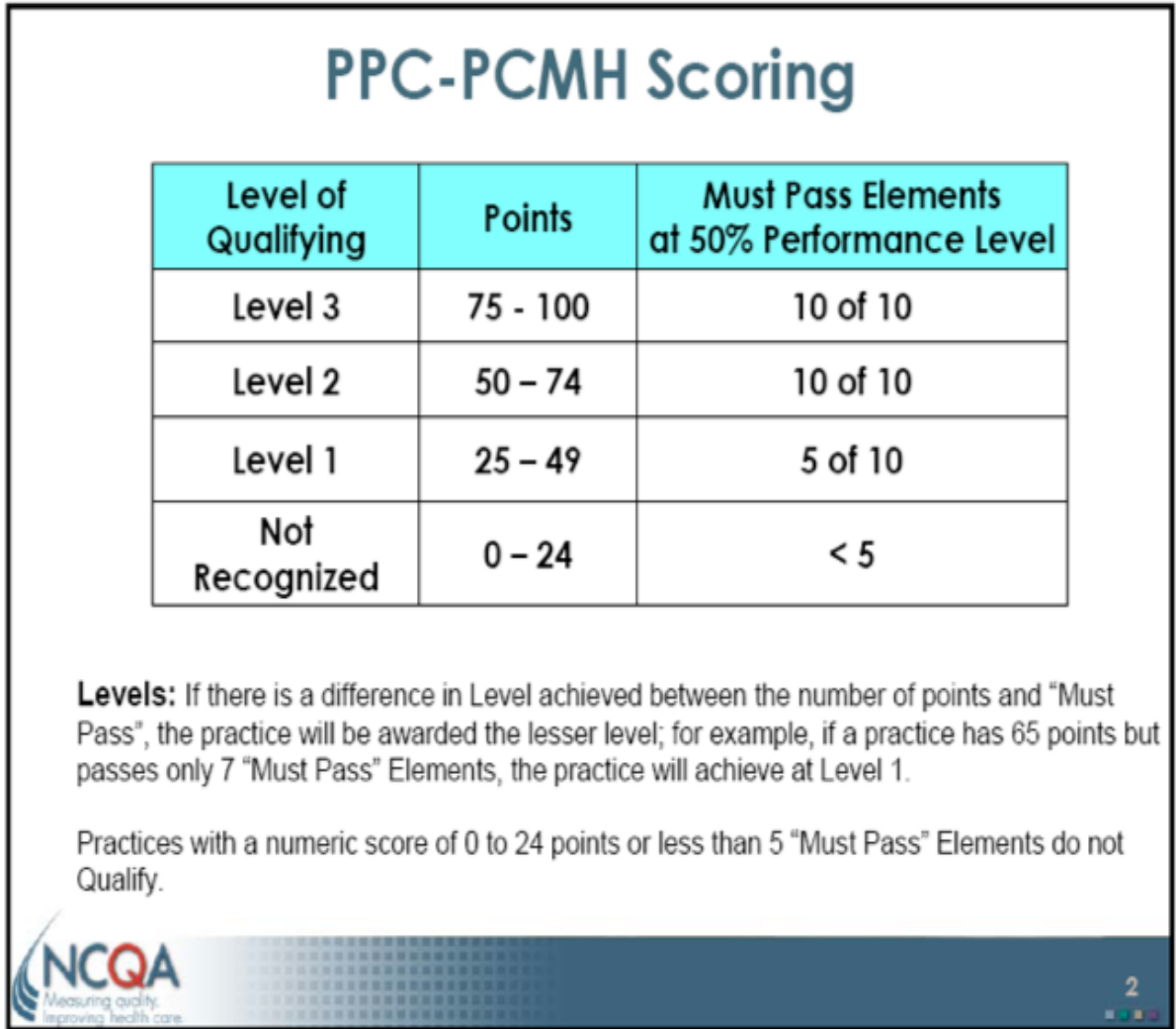


Figure 13a: NCQA's recognition levels for PCMH.