**COMMUNITY HEALTH WORKERS: A PUBLIC HEALTH BUSINESS CASE**

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Brandon Rafus, MHA

University of Pittsburgh, 2016

**ABSTRACT**

Community health workers (CHW) epitomize public health significance from quality, policy, and economic standpoints. CHWs increase the quality of community health by functioning as a common thread between Community Based Organizations (CBOs) and clinical initiatives within health systems. Hence, opportunities for best practices actualize in accordance with a vision of optimal attainment of health. CHWs influence broader policy legislation by engaging communities to identify paramount concerns faced, using their platform to voice concerns to authoritative decision makers on local, state, and national levels. CHWs influence economic sustainability pertaining to health care utilization by utilizing their social capital, which oftentimes is extremely costly to develop and maintain in workforce development. As paraprofessionals, they also are a low cost solution for post-discharge care within an interdisciplinary team. Moreover, CHWs enable a transformation of previous ideological constructs concerning community health, and help to shape the health behaviors of their constituents. The following essay critically examines public health implications associated with CHW interventions used to meet needs of patients enrolled in special needs plans (SNPs). In addition, I have chosen to include specific suggestions for UPMC Health Plan to emphasize immediate impacts of CHW interventions as a business case when utilizing regulatory and clinical competence. These suggestions are based off of my experience as UPMC Health Plan’s Administrative Resident. Practical themes of interest discussed such as CHW incorporation, CHW training and return on investment (ROI) rely on the support of evidence-based literature accordingly. Lastly, I collectively provide recommendations for prospective CHW roles within UPMC Health Plan that possess long-term public health implications.

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# executive summary

Community health workers (CHWs) play a role that has significant public health implications on various populations with complex needs. Within a health plan construct, CHWs can collect/utilize epidemiological data and population surveillance within their scope of practice. Congress’s approval of SNPs through the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) encourage health plans to develop targeted programs for high-risk beneficiaries.[[1]](#endnote-1) Plans fulfill duties imposed by the state by enrolling members into one of three special needs populations:

Beneficiaries dually eligible for Medicare and Medicaid

Institutional beneficiaries

Those suffering from severe or disabling chronic conditions.

SNP plans and enrollment has grown considerably to over 477 plans with more than 1 million enrollees in 43 states.[[2]](#endnote-2) SNPs serving beneficiaries eligible for both Medicare and Medicaid (dual eligible) attract particular attention, as these plans make up the majority of SNPs and have the highest aggregate enrollment. The characteristics of this population demonstrate that it is a population with special needs. In 2011, Medicare spending on a per capita basis was considerably higher for dual eligible beneficiaries ($19,113) than Medicare spending for non-dual eligible beneficiaries ($8,685).[[3]](#endnote-3)

To turn and change cost and utilization trends, UPMC Health Plan can employ community health workers (CHWs) to address concerns of SNP beneficiaries in various ways that include better coordination of the Medicare and Medicaid benefit, intensive case management for high-risk beneficiaries, and proper linkage to community social services.

**1. Coordination of the Medicare and Medicaid benefit**: The MMA contains provisions that affect the National Health Expenditures Accounts (NHEA). The NHEA measures spending on public health activities, on the net cost of private health insurance and administration of public programs, and on investments in medical structures.[[4]](#endnote-4) To help ensure SNP beneficiaries utilize public health activities efficiently, CHWs can serve as a single point of contact and can assist with verifying entitlement program eligibility, waiver eligibility and applications, obtaining medical appointments, and securing transportation needs.[[5]](#endnote-5)

**2. Intensive case management for high-risk beneficiaries:** My experience recalls UPMC Health Plan using various approaches such as predictive analysis to identify high-risk beneficiaries susceptible to hospital readmission. Consequently, UPMC Health Plan proceeds to place them in intensive medical case management programs. To buttress these programs after discharge, UPMC Health Plan utilizes a team of providers called The Community Team. Evolving communication strategies between providers and beneficiaries can help to enable quick and informed action to health risks and public health emergencies.[[6]](#endnote-6) CHWs can increase communication between both providers and beneficiaries, fostering patient-centered care.[[7]](#endnote-7)

**3. Links to community social services:**  From a public health standpoint, community based resources play a key role in reaching beneficiaries outside of traditional health care settings, improving health and quality of life.[[8]](#endnote-8) UPMC Health Plan can use CHWs as a way to identify community and social resources to address non-medical stressors caused by poverty. These stressors often lead to poor health outcomes and increased healthcare costs if left unaddressed.[[9]](#endnote-9)

## introduction

The purpose of this essay is to describe community health workers (CHWs), what they are doing, where they are going as a profession and to suggest and propose how CHWs can maximize their impact on SNP beneficiaries within UPMC Health Plan. UPMC Health Plan can commit to deploying CHWs to work in a variety of clinical and non-clinical settings and can anticipate these workers will function in unique roles that complement other service providers.[[10]](#endnote-10) Being able to draw from shared life experiences with members of their community, CHWs possess a non-clinical, experience-based skill set.[[11]](#endnote-11) CHWs are effective in their ability to focus on relationship building and buttress each patient’s health goals. Through education, social support, and advocacy, CHWs work to build individual capacity, community capacity and self-reliance.[[12]](#endnote-12) Additionally, CHWs work in disease-specific programs and provide such services as guidance for system navigation and follow-up. Subsequently, their efforts can help to ensure compliance with treatment recommendations.[[13]](#endnote-13)

From an economic perspective, historical total costs of SNP beneficiaries across the Commonwealth continue to rise annually as utilization of services continue to increase. The trend is in accordance with current national distribution of Medicaid spending on acute care and long-term care. From 2010-2013, national trends show the distribution of Medicaid spending on acute care has increased from $237 billion to $284 billion, reflecting an average annual growth rate of 6.2%.[[14]](#endnote-14) Within the same timeframe, national trends show the distribution of Medicaid spending on long-term care has increased from $120 billion to $123 billion, reflecting an average annual growth rate of 0.6%.[[15]](#endnote-15) In fiscal year 2014, national trends show the distribution of Medicaid spending on acute care and long-term care to reflect $339 billion and $119 billion respectively.[[16]](#endnote-16)

Concurrently, the distribution of Medicaid spending on acute care and LTTS within the Commonwealth has increased. In fiscal year 2010, approximately $17.6 billion in total Medicaid spending covered acute care and long-term care (24% of the total Commonwealth budget).[[17]](#endnote-17) After the Commonwealth decided not to expand its Medicaid program after the ACA implementation in 2010, 73% of spending for fiscal year 2010 went to the elderly and the disabled, who made up only 35% of total Medicaid enrollees.[[18]](#endnote-18) This percentage of elderly and disabled spending is disproportionate in terms of the 2,417,096 total Pennsylvania residents enrolled in Medicaid, although not an anomaly.[[19]](#endnote-19) Primarily since these enrollees are more likely to have complex health needs requiring intensive acute and long-term care. Irrespective of the fact that Pennsylvania is considered a higher income Commonwealth with a generous Medicaid program, realistic sustainability became an issue in subsequent years. As of 2011, Medicaid spending consumed approximately 30% of Pennsylvania’s total state operating budget[[20]](#endnote-20), with dual eligible comprising the bulk of Medicaid spending for acute care and long term-care services ($836 million and approximately $6 million respectively of $17 billion spent total).[[21]](#endnote-21) New York was the only state with higher long-term care spending than the Commonwealth during fiscal year 2011. Fiscal year 2012 is the benchmark in which Commonwealth Medicaid spending ($20 billion) increased 83% over the last 10 years compared to a 45% increase in personal income amongst the constituents of Pennsylvania over the last 10 years (approximately $12 billion spent on acute care, $6.5 billion spent on long-term care, and $1.5 billion spent on Disproportionate Share Hospital payments).

From a public health standpoint, low-income populations with limited earning potential and no access to Medicaid coverage were likely to have the worst health outcomes.[[22]](#endnote-22) Particularly, low- income populations suffer disproportionately from health problems related to physical inactivity. Individuals from low-income households below $15,000 are much more likely to have a diagnosis of diabetes or asthma, to be obese, and to be at risk for health problems related to lack of exercise than those from households with income above $50,000.[[23]](#endnote-23) As of fiscal year 2012, optional benefits such as adult health screenings, home and community-based services, the program of All-Inclusive Care for the Elderly (PACE), intermediate care for intellectual disabilities, and inpatient care for mental diseases for individuals 65 and older were offered in addition to required benefits of Medicaid[[24]](#endnote-24).

From my experience, UPMC Health Plan is an entity intimately involved in providing these services, and CHWs can enhance these provisions long-term. Fiscal year 2013 marked the first year in which federal Medicaid spending for home and community based services (HCBS) accounted for the majority of Medicaid long-term services and supports (LTSS).[[25]](#endnote-25) Ironically, Pennsylvania ranked in the bottom tier of all states regarding Medicaid expenditures for HCBS (National average is 51% of expenditures while Pennsylvania spends only 42%).[[26]](#endnote-26) As of 2015, recent Medicaid expansion efforts by Governor Wolf, developments in the Community HealthChoices Request for proposals[[27]](#endnote-27), and a future Commonwealth launch of the Home and Community Based Services Loan Program[[28]](#endnote-28).These are all platforms UPMC Health Plan can use to increase the involvement of CHW involvement within Southeast, Lehigh/Capital, and Northwest Regions it currently serves. From a public health standpoint, CHWs can place an increased emphasis on Health Plan dual eligibles within its SNP plan (D-SNPs) by providing direct oversight and care to prevent the onset of chronic disease, which will likely reduce the severity of prognosis and ultimately improve a D-SNPs’ quality of life. Additionally, this care will somewhat offset ambiguous health outcomes of D-SNPs affected by health disparities resulting from biased care and a lack of patient-centered care. This can create a behavioral and physiological change within D-SNP beneficiaries.[[29]](#endnote-29)

Furthermore, UPMC Health Plan can utilize CHWs to bend the cost curve associated with overutilization of ineffective care. With a clear intention on allocating a 3-5 year timeframe to pilot CHW interventions within various settings, I suggest that UPMC Health Plan utilize CHWs to enhance disease management, member engagement, and pharmacy interventions for purposes of capturing revenue from outstanding CMS star ratings. Communication between CHWs and clinicians can enable an untraditional approach for protecting the welfare of each SNP beneficiary, while working to protect the public welfare of a community from a public health perspective.

**Defining Community Health Workers (CHWs):** The word “CHW” is often utilized when referring to a worker who may be employed as a CHW but functions under titles that include community health educator, outreach worker, chronic disease educator, patient navigator, Promotor(a) de Salud, peer mentor/counselor, community health representative, health advisor, and lay health advocate[[30]](#endnote-30). CHWs are effective in strengthening and linking social ties within the communities they serve. Some common themes that the patient and CHW share include similar experiences, cultural similarities, and socioeconomic statuses. The American Public Health Association defines a CHW as:

“…a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the CHW to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and Cultural competence of service delivery. A CHW also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach (member engagement), community education, informal counseling, social support and advocacy.”[[31]](#endnote-31)

### FEDERAL REGULATIONS DETERMINE CHW EFFECTIVENESS

CHWs have the potential to move into clinical settings with support from various entities such as state health departments.[[32]](#endnote-32) Some of the biggest barriers that CHWs face include insufficient familiarity with the system and bias toward people who are essentially unlicensed paraprofessionals. According to the Institute of Healthcare Improvement, the Triple Aim is a blueprint that describes a viable approach for augmenting the performance of a health system.[[33]](#endnote-33) The three facets of the triple aim include improving the patient experience of care, improving the health of the population, and bringing down overall costs.[[34]](#endnote-34) CHWs can help health systems and primary care practices increase improvements in all three facets by helping them understand the importance of improving the health and clinical outcomes of their patients, placing great emphasis on the social determinants of health. Many of these social determinants of health fall outside of the medical care system, but have a profound effect on clinical outcomes and health.[[35]](#endnote-35) UPMC Health Plan can collaborate with CHWs to address concerns regarding disease susceptibility, disease adaptation, early pathogenesis (development of morbid conditions or disease), and clinical disease amongst SNP beneficiaries. Effective collaboration is dependent on CHW involvement with patient and provider education, strong social supports, and ongoing help navigating a complicated system of care. Providing these components for patients may cost more initially, but will bring down costs in the long term.[[36]](#endnote-36)

UPMC Health Plan can use CHWs as a population health strategy to increase savings while improving quality of care for those chronically ill. In order to improve quality, CHWs can:

**1.) Close HCC gaps**: CHWs can help close the gaps associated with insufficient documentation or recognition of a hierarchal condition category (HCC). Medicare implemented the Hierarchal Condition Categories model in 2004 in order to pay Medicare Advantage (MA) health plans according to a capitation methodology constructed to consider health expenditure risk of beneficiaries, which then translate to expected relative costs incurred by a health plan.[[37]](#endnote-37) This is important to remember, as MA health plans must do their best to capture HCC codes at least once every 12 months. A 6-month revenue gap ensues for MA health plans unable to capture these codes since Medicare utilizes diagnoses codes from the initial year to establish the capitation payments issued to the MA health plan.[[38]](#endnote-38) According to the Code of Federal Regulations title 42 (public health), part 422, section 310, paragraph (d)(2), MA organizations must submit risk adjustment data electronically to the appropriate CMS contractor.[[39]](#endnote-39) Moreover, 42 CFR §422.310(e) requires MA organizations and their providers and practitioners to submit a sample of medical records for the validation of risk adjustment data as required by CMS.[[40]](#endnote-40)

To ensure compliance with these medical record guidelines, my recommendation encompasses UPMC Health Plan optimizing CHW functionality by increasing their role in optimizing the HCC capturing process. This starts with the Health Plan placing particular emphasis on nuanced examples related to quality data sets.[[41]](#endnote-41) Remnants of quality data sets are evident and incorporated into prototypes such as the CMS-HCC model (Version 21).[[42]](#endnote-42) According to the National Quality Forum, the quality data set framework contains three levels of information:

1. Standard Elements- Represent the unit of data identified by a data element name, a code set, and a code list composed of one or more computed values. (e.g. diabetes and all relevant International Classification of Diseases, Ninth edition, Clinical Modification (ICD-9-CM) codes or diabetes medications and all representative medications coded in the code set).[[43]](#endnote-43)
2. Quality data elements- Pieces of information used in quality measures to describe part of the clinical process. Quality data types can be reused by other measures, clinical guidelines, and clinical decision support development. (e.g. active diabetes diagnosis, diabetes family history, diabetes medication dispensed, and diabetes medication administered).[[44]](#endnote-44)
3. Data flow attributes- Describe the authoritative source for the information that is required to represent any given quality data element. (e.g. Data source- the originator of the quality data element and may be an individual or source. Recorder- an individual or device that enters the data element into a health record field and can be the source. Setting- the physician location where the data element is captured, defining the encounter location where the data is expected to originate. The Health Record Field- the location within an electronic record where one can find data.)[[45]](#endnote-45)

CHWs can play intricate roles in the collection and interpretation phases that effect synthetization of all three levels within a multidisciplinary construct. While doctors will diagnose, prescribe, and notate final assessments using an electronic medical record (EMR), CHWs can perform the same tasks in an unconventional manner, ultimately collaborating with clinicians to identify any risk adjustment data discrepancies at the point of service. Dialogue regarding potential root causes of gaps in information can be a point of interest in subsequent provider-CHW sequences. If hired by UPMC Health Plan, CHWs can potentially develop the ability to identify specific differences between D-SNP, Chronic Condition (C-SNP), and Institutional Special Needs Plan (I-SNP) beneficiaries within their caseload. Using their unique ability to relate to patients and relative training, CHWs can reliably assess and identify additional complexities or illnesses associated with beneficiaries through motivational interviewing. This interviewing could take place before the beneficiary meets with their primary physician or specialist. For instance, a CHW interviewing an aged-disabled C-SNP member with diabetes could transcribe the standard element (patient identifies as having Type II diabetes), the quality data type (whether the patient has been prescribed medication), and quality data element (diabetes medications dispensed to the patient directly by physician or vendor) in a working log.

CHWs can then accompany them to their scheduled appointment with the approval of their assigned patient. During the visit, the CHW can confirm their assessments through observation of the provider-patient interaction. Essentially, the primary care physician (PCP) would identify the patient as having Type II diabetes and would use the proper standard element (ICD-9-CM code). Additionally, the PCP would confirm the quality data type (number of medications and doses prescribed with dates and times administered if available) and the quality data element (Diabetes medications dispensed to the patient). Consequently, the PCP would use data flow attributes, describing the authoritative source for the information required to represent the process of prescribing diabetic medication. Within this level, they may identify more than one source providing medications (e.g., family members). The PCP may also identify from the CHW and patient occurrences where a nurse practitioner has signed off on this additional source. Identification of exact health care settings such as an outpatient health center and the final health record field would be the last task for the PCP.

Once information aggregates from the CHW, PCP, and HCC auditing team, the Health Plan can use the CMS-HCC model (Version 21) to analyze comparative member data. Areas of analyzation can include predictive ratios for aged-disabled community and institutional continuing enrollees, considering the total number of payment HCCs, HCC groups, and deciles and percentiles of predicted expenditures in accordance with chronic disease.[[46]](#endnote-46) Estimations from this comparative data are extremely helpful because they derive through usage of relatively similar sample sizes comparable to Health Plan membership. Likewise, estimations take into consideration predictive ratios regarding prior year hospitalizations, validation group definitions of SNP-specific chronic conditions, and greater clinical transparency regarding HCC interactions.[[47]](#endnote-47)

**2.) Improve HEDIS/ STARS Ratings:** The Centers for Medicare and Medicaid Services (CMS) developed the Five Star Quality Rating System to hold health plans accountable for quality.[[48]](#endnote-48) Furthermore, this rating system educates consumers by making the performance data more transparent and available. Quality bonus payments are distributed for plans with Medicare star rating of 4 stars or more. This is important to the Health Plan, as the Affordable Care Act has tied a portion of the Health Plan’s overall payment to the Star rating it has received. The ratings released are for both Medicare Part C and Medicare Part D plans.

In relation to Medicare Part C, health plans report process and intermediate outcome measures to CMS using the HEDIS (Healthcare Effectiveness Data and Information Set) tool.[[49]](#endnote-49) In order to provide health maintenance organization (HMO) services for Medicare enrollees under a MA program, completion of standard requirements follow auditing protocol.[[50]](#endnote-50) Requirements for MA programs include submitting audited summary-level HEDIS data such as cost contracts and closed enrollment to the National Committee for Quality Assurance (NCQA).[[51]](#endnote-51) MA programs must submit patient level data such as emergency department utilization and inpatient admission to CMS designated patient-level data contractors.[[52]](#endnote-52) Submission of patient-level HEDIS data is not required for SNP-specific HEDIS measures.[[53]](#endnote-53)

The National Committee for Quality Assurance (NCQA) develops and maintains HEDIS measures annually, allowing consumers to compare health plan performance to other plans and to national or regional benchmarks. The HEDIS tool consists of 81 measures across five domains[[54]](#endnote-54) that include:

1. Effectiveness of Care
2. Access/Availability of Care
3. Experience of Care
4. Utilization and Relative Resource Use
5. Health Plan Descriptive Information

Relative to public health, behavioral and physical health measures within the HEDIS tool continue to change as patient needs become more complex on an annual basis. Notably, in 2013, first-year measures[[55]](#endnote-55) regarding Effectiveness of Care (EOC) explore relationships between physical and behavioral health. Specific measure examples include:

1. Diabetes Screening for People with Schizophrenia and Bipolar Disorder who are Using Antipsychotic Medications
2. Diabetes Monitoring for People with Diabetes and Schizophrenia
3. Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia
4. Adherence to Antipsychotic Medications for Individuals with Schizophrenia

Congruently, changes to these measures are applicable to the Medicaid product line.[[56]](#endnote-56) As of 2016, updates regarding EOC measures include the following first-year measures[[57]](#endnote-57):

1. Statin Therapy for Patients Suffering from Cardiovascular Disease
2. Statin Therapy for Patients Suffering from Diabetes
3. Comprehensive Diabetes Care

Furthermore, updates for current EOC measures[[58]](#endnote-58) include:

1. Medication Reconciliation Post-Discharge (MRP)
2. Medication Management for People With Asthma (MMA)
3. Asthma Medication Ratio (AMR)
4. Relative Resource Use for People With Asthma (RAS)

MRP changes expand to all Medicare plans, not just SNP plans. These changes are applicable for Commercial, Medicaid, and Medicare product lines.[[59]](#endnote-59) MMA, AMR, and RAS changes involve an expanded age range up to 85 year old for members within the commercial product line. Guideline changes are applicable for Commercial, Medicaid and Medicare Product lines.[[60]](#endnote-60) Updates regarding Utilization and Risk Adjusted Utilization measures for 2016 include the following first-year measures[[61]](#endnote-61):

1. Inpatient Hospital Utilization (IHU)
2. Emergency Department Utilization (EDU)
3. Hospitalization for Potentially Preventable Complications (HPC)

Changes are applicable for Medicare and Commercial product lines.[[62]](#endnote-62) Utilization of the Patient Health Questionnaire-9 clinical tool to Monitor Depression Symptoms for Adolescents and Adults (DMS) is a first year measure applicable to all Commercial, Medicaid, and Medicare Product lines.[[63]](#endnote-63) This measure is collected using electronic clinical data systems.[[64]](#endnote-64)

As a MA program provider, UPMC Health Plan will need to proactively adjustment in order to meet changing evaluation expectations of these HEDIS measures. Likewise, another challenge with direct implications on future changes in HEDIS measures involves the release of a notice of proposed rulemaking (NPRM) by CMS. Within the preamble of the NPRM, CMS discusses two paramount reasons for adding the MLR (Medical Loss Ratio) requirements to Medicaid managed care[[65]](#endnote-65):

1. CMS seeks to align Medicaid managed care rules with commercial and Medicare Advantage standards “To support administrative simplicity for states and health plans to manage health care delivery across different product lines, as well as to enhance beneficiary protections.”
2. CMS believes MLR requirements of 85% will help states monitor and evaluate the actuarially sound capitation rates.

Given the increased emphasis on medical care and outcomes, my recommendation supports UPMC Health Plan using CHWs with a pathway model as a way for improving scoring within each HEDIS domain. A pathway is a model that connects at-risk clients to community services that support care plans and produce positive health outcomes. The model focuses on prevention and early treatment.[[66]](#endnote-66) It uses a "hub," or a neutral clearinghouse that brings together the many agencies trying to reach those who are at greatest risk.[[67]](#endnote-67) The hub receives referrals, determines eligibility, enrolls clients, conducts training for CHWs and monitors their performance along with provider performance.[[68]](#endnote-68) This process can help to ensure plan beneficiaries receive annual immunizations and cancer screenings. CHWs can also assist in facilitating disease management by engaging and empowering beneficiaries to define what treatments work best for them. In terms of patient experience, CHWs can help beneficiaries acquire timely appointments for a PCP or specialist.

Finally, CHWs can focus on improving Part D measures that involve providing better alternative treatments versus high-risk medications for beneficiaries if necessary. For example, the FDA advises that people treated with statins for cardiovascular disease may have an increased risk of raised blood sugar levels and the development of Type II diabetes.[[69]](#endnote-69) CHWs can advocate on behalf of the patient in the event that a PCP identifies blood sugar level complications as a possible byproduct of statins.

CHWs have improved member engagement and self-management, access of care and coordination of services amongst patients with complex conditions.[[70]](#endnote-70) In turn, improvements in these areas will undoubtedly result in favorable HEDIS and STARS scores for UPMC Health Plan, especially once MLTSS is fully operating in 2017.

**3.)** **Positively turn cost trends associated with poor utilization of care:** CHWs can improve a beneficiary’s physical health by increasing awareness for proper cancer screenings and immunizations, hereby ensuring proper utilization of services. CHWs can also help to ensure beneficiaries with chronic diseases or complex conditions receive high value care through ambulatory care as opposed to low value care provided through the Emergency Department. Execution of roles such as these will enable more opportunities for CHWs to mitigate future preventable episodes of care.

**4.) Improve Quality:** CHWs function to acquire and apply knowledge aimed at protecting public welfare as a public health goal, all while respecting autonomy. Hence, UPMC Health Plan may be able to improve quality for complex patients with CHWs. For example, patients that consent to a CHW escort may see less variation in medical practice patterns during their plan of care. According to a study in the Journal of Family Practice, 60% of Medicaid beneficiaries diagnosed with a common cold filled a prescription for an antibiotic despite common knowledge that almost all colds are caused by a virus for which antibiotics are not effective. In addition, overuse leads to the development of bacterial strains that are resistant to current available antibiotics.[[71]](#endnote-71) Another study using data from seven health plans found that 17% of coronary angiographies and 17% of upper gastrointestinal tract endoscopies were performed inappropriately for their Medicaid beneficiaries within the health plans[[72]](#endnote-72). .

# THE CONNECTION BETWEEN THE AFFORDABLE CARE ACT CHWs

The Affordable Care Act (ACA) authorizes funding sources and increases the role of the CHW in different ways. Under the ACA, section 3025 discusses penalties associated with patient hospital readmissions[[73]](#endnote-73). Most Health Plan SNP beneficiaries have a primary diagnosis that fails to account for physical or cognitive deficits that complicate care and contribute to their poor outcomes. As a response to this concern, CHWs can play a pivotal role within the construct of the UPMC Health Plan’s care process redesign, focusing on patient readmissions related to a primary diagnosis and alternative diagnosis and comorbidities.

Secondly, section 3502 of the ACA discusses opportunities for multi-disciplinary community health teams functioning within the arena of Patient-Centered Medical Homes (PCMH). With an emphasis on connecting individuals to needed services, chronic disease management, and health promotion, the Center for Medicare and Medicaid Innovation (CMMI) is willing to provide funding opportunities. Criteria for the funding involves collaborating with health systems on proposals that elect to include CHWs as part of their vision.[[74]](#endnote-74)

Lastly, the ACA authorizes the Center for Disease Control and Prevention (CDC) to issue resources to “eligible entities” to promote positive health behaviors and outcomes through CHWs for medically underserved communities. A Community Transformation Grant allocates funding[[75]](#endnote-75). The CHW can educate, guide, and provide community outreach to SNP beneficiaries. They also are capable of providing strategic guidance to promote positive health behaviors and discourage risky behaviors by referring clients for high value care. Proper oversight over entitlement program eligibility and enrollment can be an area of focus for CHWs.

# HOW THE LITERATURE ASSESSES THE EFFECTIVENESS OF CHWs

Literature shows CHWs producing both positive health outcomes and financial benefits. These savings and health outcomes achieved with CHWs are important as social and cultural factors can prohibit patients from receiving the best possible provision of care. Even as we move from volume to value, physicians are often unable to address barriers that may contribute to non-adherence with their proposed care plan because of revenue pressure. An example of revenue pressure may include increases in upcoding for inpatient surgery, as an alternative form of treatment may be high value but relatively irrelevant as a profit generator. Consequently, CHWs have the capacity to spend more time with each patient, presenting information in a culturally competent manner and in the language spoken by the patient. CHWs have demonstrated success in multiple areas including:

1. Increasing Medicaid savings for Medicaid Managed Care Organizations (MCOs)
2. Preventing and managing chronic diseases (e.g. diabetes, cardiovascular disease)
3. Improving Post-Hospital Outcomes

The following list provides a small sample of health outcomes and financial benefits that have been achieved by CHWs:

**Medicaid Savings**

In terms of Medicaid spending as an economic measure and Medicaid managed care as a focus area, a retrospective study published in 2011[[76]](#endnote-76) discusses the results of a CHW intervention with high cost Medicaid managed care consumers versus no intervention at all. There were 896 participants involved in the study, 448 participants received the CHW intervention versus 448 participants whom did not receive the intervention. CHWs provided patients education, advocacy, and social support for a period up to 6 months. Data was collected on services provided, community resources accessed, utilization and payments in the emergency department, inpatient service, non-narcotic and narcotic prescriptions, outpatient primary care, and specialty care. Collection of data occurred for a 6-month period before, 6-month period during, and 6-month period after the CHW intervention. Consequently, the impact of results included a reduction in emergency department costs, inpatient costs, non-narcotic prescription, and narcotics prescriptions after 6 months of the CHW intervention. In total, $2,044,465 in was saved in costs post intervention compared to pre- intervention.

Another study used a quasi-experimental design to target African Americans in rural communities. The study focused on return on investment (ROI) from a CHW intervention of patient referrals to community based settings alternative as opposed to nursing care. The article focuses on the success of the Arkansas Community Connector Program. This is a three year, three county demonstration created by Tri-County Rural Health Network, a community-based nonprofit organization and funded by The Robert Wood Johnson Foundation and Arkansas Medicaid. The impacts of results include seeing a statistically significant negative effect on the growth in Medicaid spending over 3 years, and saving of $3.52 million dollars in Medicaid expenditure for 919 program participants as well[[77]](#endnote-77).

Both studies show the cost-effectiveness of CHWs in terms of reducing Medicaid costs associated with both acute and long term care. In stratifying acute and long-term care data of plan beneficiaries, UPMC Health Plan may see similar opportunities for improvement through the use of CHWS.

**Chronic Disease Management**

In addressing chronic diseases, one study used a retrospective design to target low socioeconomic patients within a community hospital setting. The study uses an intensive CHW intervention as a way to compare the changing rate of chronic disease care utilization (hypertension) behavioral factors and mortality rates during a 5 year span compared to its control group. 309 hypertensive Urban African American Males aged 21-54 participated in the study. The study was deemed successful as results showed a decrease in the proportion of men reporting cigarette smoking (84% more intensive meaning increasing in intensity, 76% less intensive at baseline; 68% more intensive, 67% less intensive at 5 years) and follow up rates exceeded 89% of the participants within the trial[[78]](#endnote-78).

Another study conducted in Maryland, a retrospective design was used to focus on utilizing CHWs to help diabetes patients, (some of whom have and don’t have hypertension) whom Medicaid covered, and who frequented the emergency room. These Type 2 diabetes patients were randomized into the CHW intervention group using education classes, postcards and phone calls. The other participants went into the usual care control group. CHW contacts involved helping patients make and keep appointments, promoting self-care behaviors (including diabetes and high blood pressure monitoring), articulating complications of disease, establishing or maintaining Medicaid eligibility, and providing social support. This study showed that CHW interventions directly yielded a 40% decrease in total ER visits, a 33% decrease in total hospital admissions and ER admissions, and an average savings of $2,245 per patient per year for 117 patients[[79]](#endnote-79).

An analysis by the American Cancer Society placed economic outcomes generated by CHWs in a cost benefit framework for measuring the return on investment of a CHW intervention. The analysis concludes an investment in CHWs produces changes in health behaviors with substantial economic value for society. In addition, each CHW generates lifetime benefits of approximately $12, 348 per person or $851,410 in lifetime benefits from years of life not lost (for every CHW that serves at least 69 patients per year), increased efficiency using the health care system, and increased tax revenues. In terms of a timeline, generating these benefits requires an investment of $369,490 in a period of 20 years. For every dollar invested in CHWs, the American Cancer Society receives $2.3 in benefits; a return of more than 200 percent[[80]](#endnote-80).

All three studies similarly show CHWs have a positive impact on chronic disease measures such as HbA1c levels and improved risk behaviors and health status measures related to chronic disease. In positioning these health workers within a disease management role, the Health Plan can use CHWs to improve disease self-management for SNP beneficiaries through chronic disease education and support (i.e. home visits and group sessions).

**Post-Hospital Outcomes:**

Using a two armed, single blind randomized clinical trial, the University of Pennsylvania’s Individualized Management for Patient Centered Target (IMPACT) showed positive results associated with the CHW intervention on post-hospital outcomes among low-socioeconomic status patients. During hospital admission, CHWs worked with patients to create individualized action plans for achieving patients’ stated goals for recovery. The CHWs provided support tailored to patient goals for a minimum of 2 weeks. The CHW intervention yielded results in which patients that received the CHW intervention for two weeks during their hospital admission were 52% more likely to obtain post hospital care within two weeks of discharge than those in the control group. Intervention patients also reported a 12% increase in their quality discharge rating than those in the control group[[81]](#endnote-81).

Although there is not a lot of literature pertaining to hospital post-outcomes associated with CHW interventions, UPMC Health Plan understands the role of a CHW and their effect on patient care is dependent upon long-term oversight. Furthermore, most of the cost savings associated with a CHW intervention will primarily come as a byproduct of sustained communication between the member with multiple ED visits and the CHW. The impact of a CHW within this role is key and the Health Plan anticipates their assistance will translate into substantial savings for SNP members over time. Reduction in the number of readmissions and reductions in the total number of inpatient days are two areas of focus for SNP beneficiaries.

# 4.0 HOW UPMC HEALTH PLAN Can TRAIN, TRACK, AND UTILIZE CHWs TO EFFECTIVELY MEET SNY BENEFICIARY NEEDS

**CHW Training and Meeting Community Needs:** According to a Journal of Ambulatory Care Management (JACM) special issue on CHWs, organizations that hire CHWs rely on on-the-job training to prepare CHWs for their roles. According to the literature, the skills and traits which make CHWs successful are inherent and/or gained through work or life experience. Many organizations that have implemented CHWs within their workforce believe that most of the technical skills and education needed for a CHW position requires learning through on the job training. The Health Plan will benefit from on the job training, as these workers will excel because of their background experience and their unique skillset, as opposed to having a specific educational requirement or credentialing. Additionally, CHWs will have the opportunity for training by an SNP clinical educational team, which is comprised of various individuals skilled in areas of chronic disease, nutrition, geriatrics, etc. According to the Sinai Urban Institute, literature shows that commonly reported training topics included developing communication skills, counseling skills and social support, health literacy, motivational interviewing, outreach, scheduling, referrals, advocacy and follow ups.

### 4.1.1 PUBLIC HEALTH IMPLICATIONS OF PROSPECTIVE CHW ROLES AND OBJECTIVES WITHIN UPMC HEALTH PLAN

1. **HOS (Health Outcomes Survey) and Community Needs Assessment (CNA)**

Identifying the needs of a community and beneficiary-driven health planning and evaluation is a primary focus of CHWs. UPMC Health Plan envisions CHWs will improve health outcomes survey (HOS) scores and provide community needs assessments (CNAs) within 25-targeted zip codes. Data collected from these assessments will help clinicians develop more relevant disease management strategies and will foster positive health behavior for SNP beneficiaries. CHWs can work with the UPMC Health Plan Community Team to address community needs of SNP beneficiaries who frequently are inpatient admits, frequently utilize emergency departments, and of whom may not understand how to maximize the primary care provisions they receive. My recommendation is to utilize CHWs as a means for influencing reductions in the number of falls an elderly plan beneficiary incurs each year. UPMC Health Plan can use CHWs to influence the reduction of patient falls by routing patients to high value care for their condition. For instance, a primary care physician that refers a patient to an occupational therapist for a home safety evaluation and modification would rely on CHWs to ensure proper routing to receive high value care takes place. When addressing patient concerns regarding medication intensity and its relation to reducing falls, CHWs can be used to advocate on behalf of a SNP beneficiary. Additionally, CHWs can discuss alternative options such as the gradual withdrawal of psychotropic medications and modifying other drug recommendations to reduce the risk of falls when necessary.

Additionally, my recommendation for UPMC Health Plan is better collaboration between CHWs and clinicians in order to determine ways to improve the accessibility of educational materials that address health needs of SNP beneficiaries. As patient conditions become more complex, more core educational resources are being put together to increase patient understanding and improve health literacy. CHWs can provide direction on ways in which SNP beneficiaries can utilize these materials as discussion starters and can help to identify opportunities for improvement in patient education. For example, Chronic Obstructive Pulmonary Disease (COPD) is the only chronic disease in which mortality and prevalence rates continue to rise[[82]](#endnote-82). In working to turn and change increasing rates of COPD within a target population, CHWs can meet with SNP beneficiaries to educate them on ways to effectively utilize pharmacological treatment such as the administration of bupropion for smoking cessation. Another form of education can involve direction on ways to utilize non-pharmacological treatments for COPD such as pulmonary rehabilitation and long-term oxygen therapy. CHWs have the ability to impart information on questions pertaining to determining the best settings to carry out treatment for COPD and can help ensure SNP beneficiaries understand certain facts about their disease such as the direct correlation between the number of COPD exacerbations and disease severity. CHW can also measure vitals and gather additional patient information in the event that they accompany SNP beneficiaries to their primary care physician.

1. **Health Effectiveness Data and Information Set (HEDIS) and Hierarchal Condition Categories (HCCs)**

UPMC Health Plan SNPs receive considerable revenue based on plan performance and execution of patient-centered care. The Health Plan also understands physicians who do not exercise good documentation at each patient encounter with the chronically ill will receive fewer resources from the Health Plan and will have less ability to grow. Furthermore, the Health Plan believes good documentation begins at the time of the patient's face-to-face encounter with the physician. It means the physician documents, the clinical findings in the medical record, and the medical record is used to determine ICD-9-CM codes. According to a Seidman report, SNP enrollees have 59 percent more Hierarchical Condition Categories (HCCs) than the Medicare fee-for-service population. Most SNP enrollees have multiple chronic conditions. On average the SNPs reported 2.36 HCCs per enrollee, versus the estimated Medicare program-wide average of 1.48. In an attempt to receive accurate revenue according to provisions of care, I recommend allocating a CHW for the purposes of reviewing data collected from health questionnaires conducted by the CHW and Health Plan.

Secondly, CHWs can reach out to SNP beneficiaries that present significant opportunities for improvements and can schedule an in-home or in-facility visit, allowing face-to-face assessment with one of the nurse practitioners or physicians. These face-to-face visits result in a comprehensive medical and psychosocial health assessment that create an accurate and complete account of all diagnoses. Follow up by the CHW can include: Case management, basic preventive health care, home visiting services and information for SNP beneficiaries, support, and assistance in accessing and utilizing local health and social services.

Third, the CHW can schedule an in-face-to-face assessment opportunity to impart helpful information directly unto the patient such as answering additional questions or concerns pertaining to nutrition, immunizations, family planning, substance abuse, and risks and prevention of common infectious diseases.

Lastly, the CHW can meet as planned and will conduct their own assessment of the member. The CHW will also distribute information and instruct family members of SNP beneficiaries and community members on the use of medical supplies to treat endemic diseases if there is time left.

1. **Pharmacy intervention**

My recommendation is to have UPMC Health Plan increase communication between plan pharmacists and CHWs in an effort to address polypharmacy interaction issues and/or complex regiments associated with treatment of chronic conditions. Prior to a member’s initial consultation, the member can have an introductory meeting in which the Health Plan pharmacist will explain the provisions of care and materials the member should be utilizing. During this appointment, the CHW also assists the member with informed consent paperwork. Additionally, the CHW can confer with the member and the pharmacist on the best days available to schedule an appointment for the member. The CHW will remind the member to bring all current medicines (prescription, non-prescription medicines) and any medication/monitoring devices to the appointment scheduled. As a quality precaution, the CHW will also prepare a list of the member’s medicines from the pharmacy’s dispensary records in the event that there are multiple medications.

1. **CHW Documentation**

UPMC Health Plan understands that payers continue to seek methods for reducing costs while advancing quality and transparency. Even within the health system functioning as a payer/provider model, the Health Plan strives to explore better methods of defining and report quality while maximizing reimbursement. As the Health Plan has seen in initial cases, SNP beneficiaries navigate the health care system without the tools, resources, supporter education that are vital to their well-being. As a result, I recommended that UPMC Health Plan allow time intervals twice a day in order for CHWs to complete copious notes and documentation on patients they meet.

1. **CHW/Member Interaction (Management of Physical and Behavioral Health):**

According to a study with the Journal of Diabetes Care, those with diabetes are twice as likely to be depressed as opposed to those without the disease, and symptoms of depression are present among almost one third of patients. According to the study entitled “Exercise and pharmacological treatment of depressive symptoms in patients with coronary heart disease: results from the UPBEAT”, chronic diseases are seldom confined to only physical problems. Among patients with coronary heart disease, 15% to 20% meet criteria for major depression. Over one third of cancer patients have anxiety disorders and/or depression. My recommendation is to take CHWs hired by UPMC Health Plan and train them within UPMC’s Lions Diabetes Center. This training will improve the CHW’s ability to mitigatepsychological problems, and mitigate compromising self-management behaviors that patients may exhibit.

# 5.0 CONCLUSION

To improve health outcomes of UPMC Health Plan SNP beneficiaries, CHWs can be utilized as innovative ways to bridge gaps in care and reduce high cost and utilization associated with high-risk populations. UPMC Health Plan will CHWs as suggested in the literature to address various obstacles that SNP beneficiaries incur. UPMC Health Plan anticipates addressing member health concerns by focusing early efforts on relationship-building between CHWs, clinical staff, and the SNP beneficiaries. Clarity and transparency is one of many byproducts within the vision impact for various CHW caseloads. Scheduled meetings and trainings can take place consistently to ensure proper progress in the process is made. Clinicians will play a role in determining the sustainability of employed CHWs. Although electronic health records aren’t structured to document determinants of health, analytic support will help in capturing data collected by CHWs. Captured data will enable faster identification of risk factors for targeted SNP beneficiaries who are in need of services provided by a CHW and will help with tracking a SNP beneficiary’s progress and care plans. CHWs can use tracked data over time to identify ways to serve the needs of SNP beneficiaries according to individual needs and complexities. This holistic process will empower SNP and will enable them to become self-sufficiently responsible for their overall health on a macro level. Proper execution will ensure a change in total per member per month costs, improved quality, and better outcomes for years to come

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# bibliography

1. Center for Medicare and Medicaid Services. Special Needs Plans. (2015). Retrieved February 28, 2016 from <http://www.cms.gov/Medicare/Health-Plans/SpecialNeedsPlans/index.html> [↑](#endnote-ref-1)
2. Community Catalyst. Medicare Special Needs Plans: What Consumer Advocates Should Know About Integrating Medicare and Medicaid Benefits for Dually Eligible Enrollees. (2015) Retrieved March 04, 2016 from <http://www.communitycatalyst.org/doc-store/publications/medicare_special_needs_plans_integration_brief_nov07.pdf> [↑](#endnote-ref-2)
3. Medicare Payment Advisory Commission. A Data Book: Healthcare Spending and the Medicare program. (2015). Retrieved March 04, 2016 from <http://www.medpac.gov/documents/data-book/june-2015-databook-health-care-spending-and-the-medicare-program.pdf?sfvrsn=0> [↑](#endnote-ref-3)
4. Reed, L.S and Rice, D.P.: “National Health Expenditures: Objects of Expenditures and Source of Funds”, Social Security Bulletin, 27(8):11-21, August 1964. Retrieved March 28, 2016 from <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/downloads/confpaperMMAClass.pdf> [↑](#endnote-ref-4)
5. Centers for Disease Control and Prevention. States Implementing Community Health Worker Strategies (2014). Retrieved March 28, 2016 from <http://www.cdc.gov/dhdsp/programs/spha/docs/1305_ta_guide_chws.pdf> [↑](#endnote-ref-5)
6. Healthy People 2020. Health Communication and Health Information Technology. (2016). Retrieved March 28, 2016 from <https://www.healthypeople.gov/2020/topics-objectives/topic/health-communication-and-health-information-technology> [↑](#endnote-ref-6)
7. Jewish Healthcare Foundation. Community Health Workers: Getting the Job Done in Healthcare Delivery. (2015). Retrieved March 28, 2016 from <http://www.jhf.org/admin/uploads/jhf-nehi-chw-summit-framing-paper-spring-2015.pdf> [↑](#endnote-ref-7)
8. Healthy People 2020. Educational and Community-Based Programs. (2016). Retrieved March 28, 2016 from <https://www.healthypeople.gov/2020/topics-objectives/topic/educational-and-community-based-programs> [↑](#endnote-ref-8)
9. IBID [↑](#endnote-ref-9)
10. Agency for Healthcare Research and Quality. Outcomes of Community Health Worker Interventions. (2009). Retrieved March 29, 2016 from <http://www.ahrq.gov/downloads/pub/evidence/pdf/comhealthwork/comhwork.pdf> [↑](#endnote-ref-10)
11. IBID [↑](#endnote-ref-11)
12. IBID [↑](#endnote-ref-12)
13. IBID [↑](#endnote-ref-13)
14. Kaiser Family Foundation. Trends in Medicaid Spending Leading up to ACA Implementation. (2015). Retrieved March 06, 2016 from <http://files.kff.org/attachment/issue-brief-trends-in-medicaid-spending-leading-up-to-aca-implementation> [↑](#endnote-ref-14)
15. IBID [↑](#endnote-ref-15)
16. Kaiser Family Foundation. State Health Facts-Medicaid state spending on acute care. (2015). Retrieved from <http://kff.org/medicaid/state-indicator/spending-on-acute-care/> [↑](#endnote-ref-16)
17. The Pew Charitable Trusts. State Health Care Spending on Medicaid. July 2014. Retrieved March 8th, 2016 from <http://www.pewtrusts.org/~/media/data-visualizations/interactives/2014/medicaid/downloadables/state_health_care_spending_on_medicaid.pdf?la=en> [↑](#endnote-ref-17)
18. IBID [↑](#endnote-ref-18)
19. IBID [↑](#endnote-ref-19)
20. The Commonwealth Foundation. (Elizabeth Steele). Pennsylvania Medicaid Spending and the Affordable Care Act. (2012). Retrieved March 4, 2016 from <http://www.commonwealthfoundation.org/research/detail/pennsylvania-medicaid-spending-and-the-affordable-care-act> [↑](#endnote-ref-20)
21. Kaiser Family Foundation. State Health Facts-Distribution of Medicaid Spending for Dual Eligibles by Service (in Millions). (2015). Retrieved March 6th, 2016 from [http://kff.org/medicaid/state-indicator/duals-medicaid-spending-by-service-2/#](http://kff.org/medicaid/state-indicator/duals-medicaid-spending-by-service-2/) [↑](#endnote-ref-21)
22. Bristol Myers Squibb. Low Income Populations and Physical Activity. (2012) Retrieved March 14, 2016 from http://www.bms.com/Documents/together\_on\_diabetes/2012-Summit-Atlanta/Physical-Activity-for-Low-Income-Populations-The-Health-Trust.pdf [↑](#endnote-ref-22)
23. IBID [↑](#endnote-ref-23)
24. Kaiser Family Foundation. Medicaid State Facts-Medicaid Benefits Data Collection. (2015). Retrieved March 6th, 2016 from <http://kff.org/data-collection/medicaid-benefits/> [↑](#endnote-ref-24)
25. Medicaid.gov. Medicaid Expenditures for Long-Term Services and Supports (LTSS) in FY 2013: Home and Community-Based Services were a Majority of LTSS Spending. (2015). Retrieved March 9, 2016 from <https://www.medicaid.gov/medicaid-chip-program-information/by-topics/long-term-services-and-supports/downloads/ltss-expenditures-fy2013.pdf> [↑](#endnote-ref-25)
26. IBID [↑](#endnote-ref-26)
27. Health Management Associates. HMA Weekly Roundup: Trends in State Health Policy. (2016). Retrieved March 9, 2016 from <https://www.healthmanagement.com/wp-content/uploads/030916-HMA-Roundup.pdf> [↑](#endnote-ref-27)
28. PA.Gov. Wolf Administration to Provide Loans to Help Older Pennsylvanians and Those with Disabilities to Live Where They Choose. (2016). Retrieved February 28th, 2016 from <https://www.governor.pa.gov/wolf-administration-to-provide-loans-to-help-older-pennsylvanians-and-those-with-disabilities-to-live-where-they-choose/> [↑](#endnote-ref-28)
29. Felix HC, Mays GP, Stewart MK, Cottoms N, Olson M. Medicaid savings resulted when community health workers matched those with needs to home and community care. Health Aff. 2011; 30(7): p. 1366-1374. Retrieved from <http://content.healthaffairs.org/content/30/7/1366.long>f [↑](#endnote-ref-29)
30. American Public Health Association. (n.d.). Definition of Community Health Worker. Retrieved from <http://www.apha.org/apha-communities/member-sections/community-health-workers/> [↑](#endnote-ref-30)
31. IBID [↑](#endnote-ref-31)
32. National Center for Chronic Disease Prevention and Health Promotion. Addressing Chronic Disease through Community Health Workers- A Policy and Systems Level Approach. (2015). Retrieved March 8, 2016 from <http://www.cdc.gov/dhdsp/docs/chw_brief.pdf> [↑](#endnote-ref-32)
33. Institute for Healthcare Improvement. IHI Triple Aim Measures. (2015). Retrieved February 29, 2016 from <http://www.ihi.org/Engage/Initiatives/TripleAim/Pages/MeasuresResults.aspx> [↑](#endnote-ref-33)
34. IBID [↑](#endnote-ref-34)
35. Agency for Healthcare Research and Quality. Outcomes of Community Health Worker Interventions. (2009). Retrieved March 29, 2016 from <http://www.ahrq.gov/downloads/pub/evidence/pdf/comhealthwork/comhwork.pdf> [↑](#endnote-ref-35)
36. IBID [↑](#endnote-ref-36)
37. Centers for Medicare and Medicaid Services. Details for title: Risk Adjustment of Medicare Capitation Payments Using the CMS-HCC Model. (2004). Retrieved March 10, 2016 from <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HealthCareFinancingReview/List-of-Past-Articles-Items/CMS1191786.html> [↑](#endnote-ref-37)
38. IBID [↑](#endnote-ref-38)
39. U.S. Government Publishing Office. § 422.310 42 CFR Ch. IV (10-1-12 Edition). (2012). Retrieved March 11, 2016 from <https://www.gpo.gov/fdsys/pkg/CFR-2012-title42-vol3/pdf/CFR-2012-title42-vol3-sec422-310.pdf> [↑](#endnote-ref-39)
40. IBID [↑](#endnote-ref-40)
41. National Quality Forum. Health Information Automation of Quality Measurement: Quality Data Set and Data Flow. (2009). Retrieved March 10, 2016 from <http://www.qualityforum.org/Publications/2009/11/Health_Information_Technology_Automation_of_Quality_Measurement__Quality_Data_Set_and_Data_Flow.aspx> [↑](#endnote-ref-41)
42. Centers for Medicare and Medicaid Services. Evaluation of the CMS-HCC Adjustment Model-Final Report. (2011). Retrieved March 10, 2016 from <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/Evaluation_Risk_Adj_Model_2011.pdf> [↑](#endnote-ref-42)
43. National Quality Forum. Health Information Automation of Quality Measurement: Quality Data Set and Data Flow. (2009). Retrieved March 10, 2016 from <http://www.qualityforum.org/Publications/2009/11/Health_Information_Technology_Automation_of_Quality_Measurement__Quality_Data_Set_and_Data_Flow.aspx> [↑](#endnote-ref-43)
44. IBID [↑](#endnote-ref-44)
45. IBID [↑](#endnote-ref-45)
46. Centers for Medicare and Medicaid Services. Evaluation of the CMS-HCC Adjustment Model-Final Report. (2011). Retrieved March 10, 2016 from <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/Evaluation_Risk_Adj_Model_2011.pdf> [↑](#endnote-ref-46)
47. IBID [↑](#endnote-ref-47)
48. The Center for Medicare and Medicaid Services. Medicare Health Plan Quality and Performance Ratings 2013 Part C and D Technical Notes. (2013). Retrieved From <http://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovGenIn/Downloads/Technical-Notes-2013-.pdf> [↑](#endnote-ref-48)
49. The National Committee for Quality Assurance. Hedis & Performance Measurement. (2016). Retrieved March 11, 2016 from <http://www.ncqa.org/HEDISQualityMeasurement.aspx> [↑](#endnote-ref-49)
50. Centers for Medicare and Medicaid Services. Medicare Managed Care Manual Chapter 5-Quality Assessment. (2014). Retrieved March 13, 2016 from <https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/mc86c05.pdf>. [↑](#endnote-ref-50)
51. IBID [↑](#endnote-ref-51)
52. IBID [↑](#endnote-ref-52)
53. IBID [↑](#endnote-ref-53)
54. The National Committee for Quality Assurance. HEDIS and Performance Measurement. Retrieved March 13, 2016 from <http://www.ncqa.org/HEDISQualityMeasurement.aspx>. [↑](#endnote-ref-54)
55. IBID [↑](#endnote-ref-55)
56. IBID [↑](#endnote-ref-56)
57. The National Committee for Quality Assurance. Summary Table of Measures, Product Lines, and Changes. (2016). Retrieved March 11, 2016 from <http://www.ncqa.org/Portals/0/HEDISQM/HEDIS2016/HEDIS%202016%20List%20of%20Measures.pdf>. [↑](#endnote-ref-57)
58. IBID [↑](#endnote-ref-58)
59. IBID [↑](#endnote-ref-59)
60. IBID [↑](#endnote-ref-60)
61. IBID [↑](#endnote-ref-61)
62. IBID [↑](#endnote-ref-62)
63. IBID [↑](#endnote-ref-63)
64. IBID [↑](#endnote-ref-64)
65. Covington and Burling LLP. Some Significant changes come to Medicaid Managed Care. (2015). Retrieved March 13, 2016 from https://www.cov.com/~/media/files/corporate/publications/2015/06/some\_significant\_changes\_come\_to\_medicaid\_managed\_care.pdf [↑](#endnote-ref-65)
66. Snyder Rick. Reinventing Michigan’s Health Care System: Blueprint for Health Innovation. (2014). Retrieved March 14, 2016 from <http://www.michigan.gov/documents/mdch/Michigan_Blueprint_APPENDICES_REMOVED_454499_7.pdf> [↑](#endnote-ref-66)
67. IBID [↑](#endnote-ref-67)
68. IBID [↑](#endnote-ref-68)
69. U.S. Food and Drug Administration. FDA Drug Safety Communication: Important safety label changes to cholesterol lowering statin drugs. Retrieved March 13, 2016 from http://www.fda.gov/Drugs/DrugSafety/ucm293101.htm [↑](#endnote-ref-69)
70. IBID [↑](#endnote-ref-70)
71. Brown David W, Rodgers Anne, Taylor Renee, Weiser Robert. Antibiotic Prescriptions Associated with Outpatient Visits for Acute Upper Respiratory Tract Infections Among Adult Medicaid Recipients in North Carolina. North Carolina Medical Journal. July/August 2003. 64(4). Retrieved from <http://www.nciom.org/wp-content/uploads/NCMJ/jul-aug-03/Brown.pdf> [↑](#endnote-ref-71)
72. Bernstein SJ, McGlynn EA, Siu Al, et al. Health Maintenance Organization Quality of Care Consortium: The appropriateness of Hysterectomy, A Comparison of Care in Seven Health Plans. Journal of the American Medical Association.1993.269 (18) 2398-2402. Retrieved from <http://jama.jamanetwork.com/article.aspx?articleid=405979> [↑](#endnote-ref-72)
73. Grabowski David, Harrington Charlene, Kurtzman Ellen, Naylor Mary, Reinhard Susan. Unintended Consequences of Steps to Cut Readmissions and Reform Payment May Threaten Care of Vulnerable Older Adults.(2012) Health Affairs. Retrieved from <http://content.healthaffairs.org/content/early/2012/06/18/hlthaff.2012.0110.full> [↑](#endnote-ref-73)
74. National Association of County and City Health Officials. Public health and Prevention Provisions of the Affordable Care Act. (2014). Retrieved from <http://www.naccho.org/advocacy/upload/PH-and-Prevention-Provisions-in-the-ACA-Revised.pdf> [↑](#endnote-ref-74)
75. IBID [↑](#endnote-ref-75)
76. Johnson D, Saavedra P, Sun E, Stageman A, Grovet D, Alfero C, et al. Community health workers and Medicaid managed care in New Mexico. J Community Health. 2012;37(3): p. 563-571. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3343233/> [↑](#endnote-ref-76)
77. Felix HC, Mays GP, Stewart MK, Cottoms N, Olson M. Medicaid savings resulted when community health workers matched those with needs to home and community care. Health Aff. 2011; 30(7): p. 1366-1374. Retrieved March 13, 2016 from <http://content.healthaffairs.org/content/30/7/1366.long>f [↑](#endnote-ref-77)
78. Cheryl R. Dennison, Wendy S. Post, Miyong T. Kim, Lee R. Bone, David Cohen, Roger S. Blumenthal, J. Eduardo Rame, Mary C. Roary, David M. Levine, and Martha N. Hill. Underserved Urban African American Men: Hypertension Trial Outcomes and Mortality During 5 Years. American Journal of Hypertension Volume 16, Issue 11, November 2003, Pages 906–913. Retrieved from [http://www.sciencedirect.com/science/article/pii/S0895706106005681#](http://www.sciencedirect.com/science/article/pii/S0895706106005681) [↑](#endnote-ref-78)
79. Fedder, D. O., Chang, R. J., Curry, S., & Nichols, G. (2003). The effectiveness of a community health worker outreach program on healthcare utilization of West Baltimore city Medicaid patients with diabetes, with or without hypertension. *Ethnicity & Disease, 13*(1), 22-27. Retrieved from <http://www.ishib.org/journal/ethn-13-01-22.pdf> [↑](#endnote-ref-79)
80. Diaz, J. (2012). *Social return on investment: Community health workers in cancer outreach*. Saint Paul, Minnesota: Wilder Research. Retrieved from <http://www.wilder.org/Wilder-Research/Publications/Studies/Community%20Health%20Workers%20in%20the%20Midwest/Social%20Return%20on%20Investment%20-%20Community%20Health%20Workers%20in%20Cancer%20Outreach.pdf> [↑](#endnote-ref-80)
81. Kangovi SK, Mitra N, Grande D, White ML, McCollum S, Sellman J, Shannon RP, Long JA. Patient-centered community health worker intervention to improve post-hospital outcomes: a randomized control trial. JAMA Intern Med. 2014; 174(4): 535-543. Retrieved from <http://archinte.jamanetwork.com/article.aspx?articleid=1828743&resultClick=3> [↑](#endnote-ref-81)
82. Juvelekian Georges, Stoller K. James. Chronic Obstructive Pulmonary Disease. (2015) Cleveland Clinic Center for Continuing Education. Received from <http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/pulmonary/chronic-obstructive-pulmonary-disease/Default.htm>l [↑](#endnote-ref-82)