

REFUAH HEALTH CENTER

December 18, 2014

To whom it may concern:

In July of 2014, the Refuah Community Health Collaborative (RCHC), Westchester Medical Center, and Montefiore Medical Center, the three Performing Provider Systems (PPPs) covering serving the Mid-Hudson region, established a partnership to develop the attached comprehensive regional Community Needs Assessment (CNA).

This "One Region, One CNA" approach included partnering with the county departments of health, departments of mental health, and community services to establish local teams that identified health care and community-based resources and provide outreach to groups affected by DSRIP. Working with the regional and county teams has assured representation all of the PPS' partners, special population groups, other health care participants not part of our PPS, and representatives from critical sectors such as schools and work sites.

The RCHC serves two of the eight Mid-Hudson counties: Rockland and Orange. As indicated in RCHC's application, the following list highlights the greatest needs within the diverse populations of those two counties.

1. Qualitative research shows the need for an expanded role of peers, health navigators, and advocates across the continuum of care.
2. There are a significant number of patients who are low utilizers of key prevention services (e.g. routine screenings). ED utilization also reveals the need to better activate patients.
3. Behavioral Health disease is prevalent within the region; medical and BH preventable readmission and ER visits are significant in this group and are due to insufficient care alternatives within the community (e.g. mobile crisis outreach, peer supports).

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4. Lack of transportation services creates a large barrier to accessing care. Large families, prevalent in our communities, struggle to travel even short distances to receive necessary care.
5. Consumers of health services do not feel engaged and communication barriers exist between providers and patients.
6. Cost is a general concern, and the current system of fragmented services results in higher costs of travel, co-pays, time, and other resources.
7. Our communities identify the top 5 health issues as: cancer, obesity, diabetes, mental health, and heart disease.

These and other findings from the CNA have played an integral role in the development of the PPS organizational and project plans and, ultimately, will ensure that we create a new integrated system of care that can achieve the Triple Aim of better care and outcomes and reduced costs.

Very Truly Yours,

Refuah Health Center, Inc.

A handwritten signature in cursive script, appearing to read "Chanie Sternberg".

Chanie Sternberg
President & CEO

ONE REGION, ONE CNA

AN EIGHT COUNTY COMMUNITY NEEDS
ASSESSMENT UNDERTAKEN IN
COLLABORATION WITH: WESTCHESTER
MEDICAL CENTER, MONTEFIORE MEDICAL
CENTER, REFUAH HEALTH CENTER AND
HEALTH ALLIANCE OF THE HUDSON VALLEY

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This report is intended solely to provide information for use by the participating collaborators in preparing their DSRIP applications and is not intended for publication. It reflects our best efforts to compile the most current, accurate information possible.

Overview: One Region, One CNA

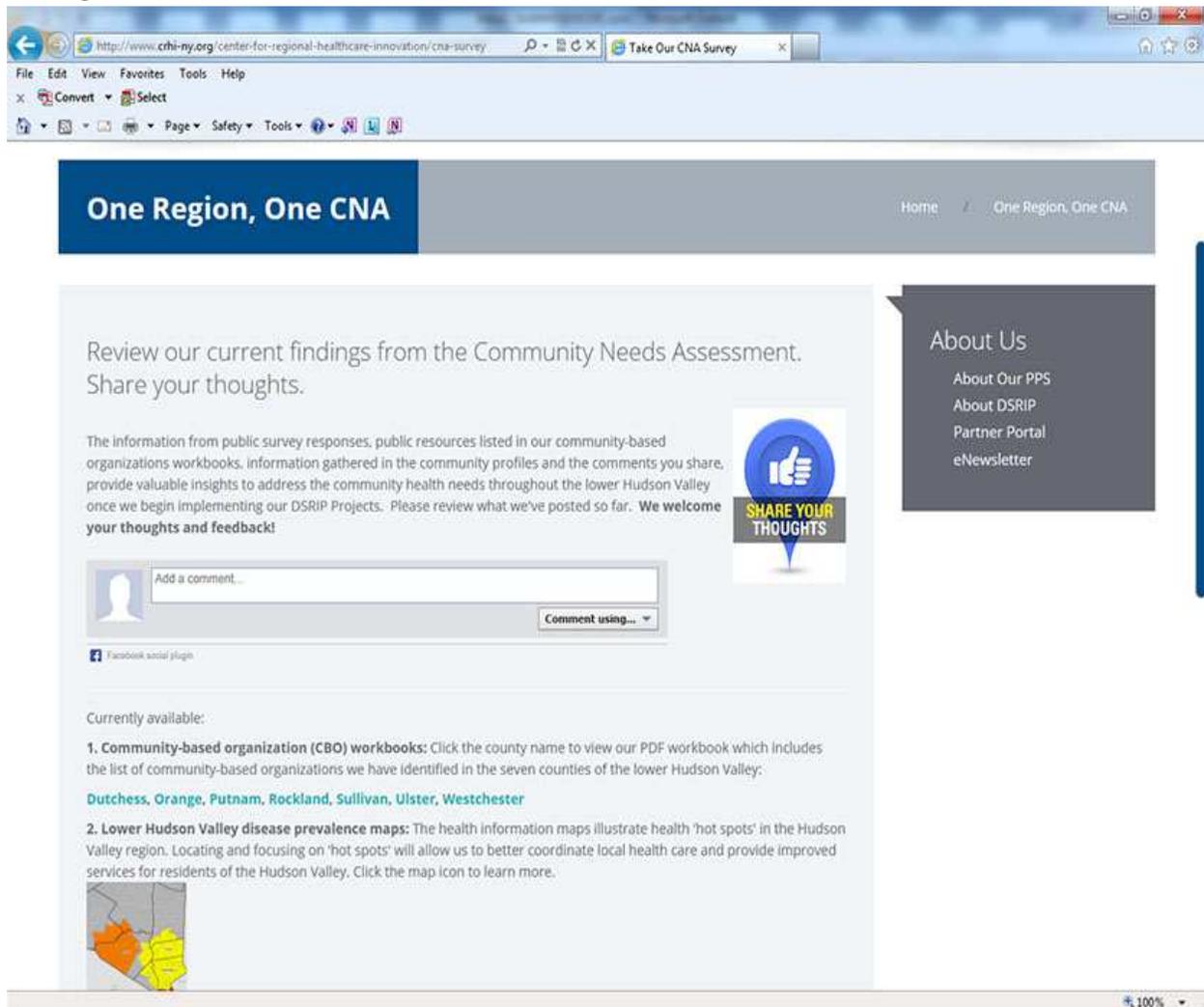
In July 2014 the CNA leadership of the participating provider systems in the Hudson Valley Region partnered to undertake an extensive regional assessment of community needs. We recognized the integral role that a community needs assessment plays in supporting the delivery of patient-centered, population-based health care. We were guided by the CDC's Community Health Assessment and Group Evaluation (CHANGE) toolkit. The needs and opinions of community stakeholders across sectors were gathered in a systematic way that included compilations of data into workbooks, chart books, and map books; surveys; focus groups, key informant interviews; and a public comment period. Rigorous analysis of extant health, socio-demographics, and built environment data enhanced our ability to identify DSRIP projects that focus interventions on individuals and communities most in need.

Our CNA utilized the power of geospatial data analysis to inform project selection and planning. The needs assessment was designed within a geographic information science (GISc) framework. GISc and spatial analyses were used to identify particular population-based health issues. For example, access to care at clinics or hospitals, socio-economic data and patterns of disease burden by population and region have all been assessed utilizing this framework. Detailed-level SPARCS data provided by our academic colleagues at Iona College, along with Medicaid claims data accessed through Health.NY.Gov dashboard, combined with Census information, were mapped to identify community needs by prevalence indicators for major diagnostic categories. Using SPARCS data we identified patients' ER visits, hospitalizations and re-admissions and analyzed trends over the past three years to identify negative quality indicators. We worked with the other three PPS partners in our region and county health department teams to coordinate local surveys about capabilities (e.g., health IT, Community Resources, Healthcare Resources, consumer survey, focus groups) to supplement what was available on secondary websites.

Conforming to our goal of improving population health, we isolated "hot and cold spots" (statistical clusters of zip codes with values higher or lower than would be expected). This approach was expanded to include variables from a range of other sources (e.g., ACS, Vital Statistics, DSRIP dashboards) related to outcomes and socio-demographic determinants (e.g., poverty, English-speaking ability, race/ethnicity, employment, physical activity). Select narrative and community profiles were developed for hot spot zip codes so that community "stories" could more easily be shared with stakeholders.

To ensure broad representation across all community sectors, we met with and sought input from local teams established by each county DOH. All data analyses and chart-, map- and work books were shared as they were developed with providers and stakeholders across the region through public meetings with county health commissioners and project team meetings conducted by the PPS in the region. We posted all components of the CNA on our public facing website for a 30 day comment period (screenshot below).

In the sections that follow, we describe our process, beginning with the engagement of key stakeholders and community members, partners and health care providers. We then present a demographic profile of the region, followed by an analysis of population health and identified health challenges. We present a summary of the region's healthcare provider infrastructure and an inventory of community based services available to meet the needs of consumers. We close with a summary of CNA findings.



Stakeholder & Community Engagement

We partnered with the county departments of health and with the departments of mental health and community services to establish local teams who could identify health care and community-based resources and provide outreach to groups affected by DSRIP. Working with county teams has assured representation from special population groups, other health care participants not part of our PPS, and representatives from critical sectors such as schools and work sites.

As part of the CNA, the PPS conducted a survey of Hudson Valley consumers to gather information and feedback about demographics and community health needs. The survey was drafted at a sixth grade reading level and reviewed and approved by health literacy experts. It is available online and in paper form in five languages prevalent in the Hudson Valley: English, Spanish, Portuguese, French Creole, and Yiddish. As of December 1, 2014, the survey received over 4,700 responses and respondent demographics are representative of the overall region. We also conducted three mini-groups of consumers to discuss barriers to access and health behaviors.

We conducted 7 focus groups with over 60 participants representing over 30 organizations. Topics related to behavioral health were explored and included perceptions of current use of services, suggestions about how to better integrate services, and perceptions of current use of ERs. We interviewed experts from organizations like Gateway Community Industries and Hudson Link who have experience working with vulnerable populations including individuals with developmental disabilities and incarcerated or formerly incarcerated members of our communities. We met with a group of 20 providers of mental and behavioral health, substance abuse and related services in Putnam County.

Forty-five providers responded to surveys on HIT and/or cultural and health literacy including information on (1) any specific challenges that the PPS will need to address to ensure success; (2) potential solutions; and (3) approaches that could address the challenges.

Our data analysts and CNA team attended more than 60 meetings and webinars to share all findings described in the health challenges section. Prevalence maps, workbooks and survey results were shared with all community stakeholders at our website: <http://www.crhi-ny.org/>

A summary of Focus group and survey results are presented here. Detailed information is available in Appendix A.

Focus Groups

Qualitative research was designed to obtain input from staff and peers of partner provider organizations related to:

- The integration of behavioral health (BH) services, including mental health (MH) and substance use (SU) services, with primary care (PC) services.
- Community-based BH crisis stabilization services.
- The groups focused on services for adults, while recognizing that children, teens and people with developmental disabilities have similar needs.

There were (4) provider and (2) peer group sessions with representatives across the region. Main findings include a need to:

- Improve the ratio of care managers to BH clients
- Assign highest-risk BH clients to care managers with lower caseloads
- Pair peers with Health Home care managers
- Bring PCPs into BH settings to establish relationships in safe places
- Expand role of peers across the continuum of care, including in community-based crisis stabilization services
- Develop systems for sharing treatment plans, EHRs and other information, with clients' approval, across provider sites and including community-based crisis stabilization services
- Move towards person-centered shared treatment plans that include client input, and might also:
 - Engage families, partners, key support people in developing plans
 - Include recovery goals, life goals building on clients' strengths, and wellness goals, using Wellness Recovery Action Plans (WRAP)
- Develop strategies, including education and training, to break through the traditional siloes of MH, SU and PC
 - Provide multi-disciplinary team training, including BH trauma-informed methods, whether or not services are co-located
- Focus on transitions:
 - From inpatient to intensive outpatient treatment services
 - From intensive outpatient treatment to less intensive services
 - From crisis intervention to follow-up care
- Provide "warm hand-offs" to support BH clients' transitions
- Establish follow-up procedures to check whether clients fill prescriptions and show up for appointments
- Involve peers, including companion peers, during transitions among levels of care and providers

- Increase number of available PCPs and psychiatrists
- Increase number of care managers to reduce caseloads
- Increase number of peers in all sites, including mobile units
- Include navigators in ERs and mobile units
- Deliver on same-day appointments
- Expand hours and days of services to include evenings and weekends
- Increase crisis respite beds and lengths of stay beyond 48 hours
- Provide 24/7 mobile units in each county to become alternatives to calling police, using ambulance services and going to ERs
- Advocate for the development of more supportive housing
- Expand transportation for BH clients to access services
- Conduct outreach and education to clergy and other influential community leaders
- Work with police, prisons and others in the criminal justice system to:
 - Identify BH needs earlier and address them appropriately
 - Connect incarcerated people with community-based BH services prior to release
- Develop public service messages to reduce fear and stigma about BH, as well as inform the larger community about how to access the range of services for BH crises

Another focus group and 10 telephone interviews were designed to gather input from clinicians and administrators to determine the feasibility of co-locating primary care services in the emergency department (ED). Main findings include a need to:

- Engage the network in developing a model for co-locating primary care services in the ED.
- Establish and strengthen ED patients' relationships with PCPs.
- Provide ED patients with information and choices about primary care services.
- Communicate with ED patients' PCPs about their ED use.
- Leverage the co-location of primary care in the ED as an opportunity for community education about using "the right place for the right care at the right time."
- For ED patients who do not have active relationships with PCPs:
 - The ED staff should make sure the patient is given a warm hand-off to a co-located PCP or care coordinator.
 - The co-located PCP or care coordinator should begin to develop a relationship with the patient in the ED.
 - The co-located PCP or care coordinator should participate in the development of the patient's follow-up plan, which should include primary care.

- For ED patients who have active relationships with PCPs, the ED staff should make sure their PCPs are identified and advised whenever their patients receive any services from a co-located PCP or care coordinator.

All ED patients who are seen by a co-located PCP or care coordinator should be:

- Provided culturally-sensitive patient education about the management of chronic illnesses and medications, if appropriate, and the importance of primary care
- Offered the option of following up with their own PCPs, if any, or continuing care with the PCP/primary care practice co-located in the ED
- Engaged in the development of follow-up plans, including choices about services, medications and providers
- Informed about potential costs of care and options for covering them
- Assisted with insurance coverage and transportation, if needed
- Advised about who is responsible for monitoring their follow-up and how that will be done, including post-discharge telephone calls
- Encouraged to call with any questions or concerns about the ED visit, follow-up plans or primary care.

For ED patients who have active relationships with PCPs, the ED should make sure their PCPs are provided the following information about each ED visit:

- Whether the patient was seen by a co-located PCP or care coordinator
- Whether the patient was provided education about chronic illnesses, medication management and the importance of primary care
- What follow-up plans were made in the ED, including the patient's choices about services, medications and providers
- How to access the patient's ED record.

For PCPs who refer patients regularly to the ED, data should be collected and strategies for providing feedback should be developed for patterns regarding inappropriate and avoidable ED visits.

- Develop a public education campaign to announce the co-location of primary care services in the ED.
- Provide information to help community members, including providers, police and others who refer patients to the ED, understand when to seek services in:
 - EDs, including from primary care co-located in the ED
 - Urgent care facilities
 - Community healthcare centers (clinics) or other providers' offices.
- Create and disseminate a user-friendly guide to the community's healthcare services, including access information (e.g., transportation options, languages spoken, fees, and insurance taken) based on the comprehensive information collected from the CNA.
- Enlist the leadership of community-based, religious and civic organizations to participate in this community education initiative.

Three mini groups were conducted among Medicaid, uninsured and insured consumers from a mix of seven counties: Dutchess, Putnam, Orange, Rockland, Sullivan, Westchester and Ulster counties. Two groups/ twelve individuals represented the Medicaid and uninsured population and one group/5 individuals comprised a mix of privately insured, Medicare and one Medicaid respondent. The objective of this research was to provide input into a broader assessment of community needs/gaps in the regional healthcare system in order to develop a comprehensive program to address Medicaid patient needs and transform the delivery system to better serve and have impact on all populations.

Consumers indicate a need to remove barriers that include:

- Access to quality care is often limited by: the number of doctors who will treat Medicaid/uninsured/Specific type of private insurance; the need for home support system, transportation needs, knowing where to go, where in the region you live.
 - More and more doctors will not treat Medicaid or uninsured patients which force some to go the ER or not get the needed care. All feel that the insurance companies dictate the rules and the doctors comply, leaving the patient with no voice. One Medicaid patient complained that she was only allowed access to a physical therapist 3 times after an accident that required more visits; she could not afford to pay for the additional care.
 - There are often language barriers on both sides that make doctor/patient communication a challenge; which limits access to the proper information, this complaint is shared by all groups. Even if they speak the same language they tend to be rushed so there is no time to get to know the patient and their needs. In a group practice one often does not get to see the same doctor, creating information voids.
 - Communication on many different levels is a barrier to optimal care. Whether it is getting the run around from the insurance company with continual hold times, or a representative who gives you the wrong answer just to get you off the phone, to providing information that is easily accessible about preventative care, disease state management, mental health issues, parenting and support services, there is no single point of contact. Many of these consumers don't know who to call email or visit; they do not know where to turn for support. A few have case worker advocates who help navigate the healthcare maze, but most are unaware of such services.
 - Lower income Medicaid/uninsured Moms cannot afford the time to get sick nor do they have the support system in place for childcare should they or one of their several children need to go to the doctor/hospital. They often forego care for themselves because they have no one to care for the kids. If one child gets sick they need to bring everyone to the doctor as well. If there are resources to help address this problem they are unaware of them. Old fashioned house call doctors/PA's could help solve this issue.

- Both single older adults and moms often have transportation needs. They cannot afford a taxi to or from the doctor or hospital and often it is too late for a bus. They do not know where to turn for assistance and information about transportation services. Others are dissatisfied with the service showing up late so the patient is late for their appointment and/or having to wait 2 hours or more to be driven home. This makes them feel like the system does not care about them.
- Those in more rural areas like Dutchess and Sullivan Counties have fewer doctors to choose from and they are not always considered to be the most competent of professional. One young adult with private insurance felt that there was a void of doctors who could relate to and understand the needs of a 20-somethings.
- Ambulance service to these more remote counties is dangerously slow. It often takes an hour to get to a patient and another hour to bring them to the nearest hospital wasting precious time that could mean the difference between life and death.
- Consumers across the board are less likely to expect healthcare to be convenient, but those who work and are insured seem to be the most frustrated by the inconvenience of the healthcare system. Most are resigned to a 2-3 week wait time for getting an appointment and more if you are new patient, waiting 2-3 hours to see a doctor even when you have an appointment, limited weekday only hours and in more rural areas traveling to areas closer to or in New York City to get proper care. If you or a family member gets sick after office hours, the Urgent Care facility and lastly the ER are their backup options. Given the long wait times in the ER, most do not go there unless they have a more severe problem, which cannot wait. Urgent Care centers are not always conveniently located, or are non-existent in more rural areas.
 - Most of these consumers see multiple doctors and need multiple x-rays/tests which require separate appoints/payments/transportation as they are not usually centrally located. Those who use a multi-specialty practice are less likely to complain about the inconvenience; in fact they laud this “one stop shop” approach as time and money saving as well as providing better patient information sharing.
- Everyone is concerned with the cost/affordability of good healthcare. Whether it is the RX or Dr. visit copay, the hefty out of pocket expenses one must shoulder during the Medicare donut hole, or paying for Dr. or RX expenses when you have no insurance, these financial implications weigh heavy on these lower income consumers’ minds and often cause non-compliant behavior (Do not buy needed medication, do not see the doctor when necessary).
 - Low income Medicaid patients are struggling to keep up financially and health-wise, but if they have to choose between feeding themselves and their children versus going to the doctor, food comes first. Most are too proud to ask for a sliding scale payment adjustment or no payment at all, or they do not have a case worker/social worker or advocate helping them

navigate the system. Some claimed that if they went to a teaching hospital that they could get care from the residents/interns for free, others were unaware of this. Again the lack of a centralized accessible understandable resource is not available and/or if there is one no one is aware of it.

- In general, the healthcare system does not get high marks for providing quality care. The general consensus is that it is run by insurance companies in collusion with doctors and the patient is often the forgotten part of the equation. There is no longer a patient/doctor partnership. The system is no longer seen as patient centric; it is seen as a business and as such lacks empathy for the patient.
 - Quality care means: the patient has trust in the doctor to make the right diagnosis and provide the right RX, the doctor understands my needs/who I am, the patient is managed holistically-information about the patient is accessible and shared with referral physicians/hospitals, the patient is treated with empathy and respect and the staff is well trained, courteous and everyone speaks clear English, which is not typically the case. Ideally quality care would include access to mental health care and preventative medicine would be a core competency.
 - Creating a better balance between the business/technology needs and the patient needs could go a long way to creating more confident, compliant, healthy patients. Consumers understand that doctors are pressured by insurance companies and legislation to see more patients per hour and to insure that the patients' medical records are filed and kept up with electronically but consumers want to be treated humanely, not like they are nuts and bolts on an assembly line.

- There is a certain lack of trust with doctors, especially among those on Medicaid and the uninsured. Several mention experiences of misdiagnosis, incorrect RX/ adverse medication interactions, rudeness/condescending attitudes and being treated like a number not a person. It is a belief that medicine has taken the path of dehumanization/business first versus a patient centric focus. This de-motivates consumers from taking the best care of themselves. Doctors and staff need more sensitivity training.
 - Some Medicaid patients claim that when the staff finds out that they have Medicaid that they wait longer, are treated differently, the staff is rude to them etc. There is a stigma that comes with being uninsured as well; as one consumer mentioned "when you are unemployed and asked about your insurance/payment status in front of others, you feel embarrassed, so I avoid the doctor's office if at all possible".

Specifically, consumers were asked to comment on public health smoking cessation and promoting healthy behaviors. These comments are included in the Appendix.

Additional focus groups took place among providers within counties, including a session within Putnam County. A full detail of this session is available in the Appendix.

Please refer to Appendix A1 for detailed methodology and results for all focus groups:

- Report on Behavioral Health Focus Groups
 - DSRIP BH Provider Focus Groups Topic Guide
 - DSRIP BH Peer Focus Groups Topic Guide
 - DSRIP BH Provider and Peer Focus Groups IC and CS Slides Handouts
- Summary of Putnam County Mental & Behavioral Health Providers Meeting
- Report on Co-locating Primary Care Services in the Emergency Department
- Report on HV Resident Mini Groups: Smoking Cessation/Promoting Healthy Behaviors

Consumer Survey

A community or consumer survey was developed derived from existing county level surveys, including the Bronx CNA instrument and the HEAL-9 NY survey used in 2009-2010 as part of a regional performance monitoring and planning grant awarded the counties in the Hudson Valley. In addition, questions were designed specifically to address DSRIP identified priority areas, including emergency department use.¹

The survey was translated into four other languages (Spanish, Portuguese, Yiddish and French Creole) and tested for appropriateness and readability. The Flesch-Kincaide score for the survey is at grade level 6.0 and the Flesch Reading Ease scale is 73.9% or “Fairly Easy.” The survey was pilot-tested among a group of representative consumers in both English and Spanish. The survey was administered to residents of each county with a focus on reaching populations that are known to underutilize the health care system. The survey was disseminated through electronic and in person (paper) formats. Emails were sent to providers and community based organizations along with transmittable pdfs, link to surveys, and survey brochures and flyers for posting and distribution. A regional target of 4000 surveys was set for statistical relevance.

Distribution was facilitated by PPS partners, including FQHCs, Health Homes, hospitals, and local county health departments. The number of surveys collected as of December 1, 2014 is 4777. Demographic information is detailed in Table 1; complete survey results and analyses are available in Appendix A2, as is the survey instrument. Of significance, fully 25% of the completed surveys were by consumers in our identified hot spots (please refer to Section D.)

Table 1 - Community Survey Demographics (N=4,777)

County (N/%)	Delaware 19 (0.4)	Dutchess 526 (11.0)	Orange 714 (14.9)	Putnam 219 (4.6)	Rockland 646 (13.5)	Sullivan 292 (6.1)	Ulster 463 (9.7)	Westchester 1884 (39.4)	Don't Know 14 (0.3)
Race/Ethnicity (N/%)	White 3068 (64.2)	Black 851 (17.8)	Asian 106 (2.2)	Native 39 (0.8)	Other 500 (10.5)	Missing 213 (4.5)			
Hispanic Origin (N/%)	Yes 942 (19.7)	No 3568 (74.7)	Missing 267 (5.6)	US born (N/%)	Yes 3706 (77.6)	No 962 (20.1)	Missing 109 (2.3)		
Gender (N/%)	Male 1475 (30.9)	Female 3243 (67.9)	Other 10 (0.2)	Missing 49 (1.0)	Insurance (N/%)	Medicaid* 1463 (30.6)	Medicare* 769 (16.1)	Private 1952 (40.9)	None 467 (9.8)
Current Age (N/%)	18-24 327 (6.8)	25-34 802 (16.8)	35-44 773 (16.2)	45-54 1105 (23.1)	55-64 1090 (22.8)	65-74 352 (7.4)	75 and older 117 (2.4)	Missing 211 (4.4)	
Annual HH Income (N/%)	Less than \$10,000 888 (18.6)	\$10,000-\$19,999 565 (11.8)	\$20,000-\$29,999 373 (7.8)	\$30,000-\$39,999 396 (8.3)	\$40,000-\$49,999 250 (5.2)	\$50,000-\$74,999 469 (9.8)	\$75,000 and over 1224 (25.6)	Missing 612 (12.8)	

*Not unique counts, an individual may have dual benefits of Medicaid and Medicare

¹ Gindi RM, Cohen RA, Kirzinger WK. Emergency room use among adults aged 18–64: Early release of estimates from the National Health Interview Survey, January–June 2011. National Center for Health Statistics. May 2012. Available from: <http://www.cdc.gov/nchs/nhis/releases.htm>.

Health Literacy and Cultural Competency

As part of the CNA, the PPS undertook surveys and focus groups to develop a better understanding of providers' perceptions of their ability to provide culturally competent care and to communicate effectively to patients. Several health literacy and cultural competency challenges were indicated, including:

- Inability of providers and staff to communicate in patients' native languages
- Reliance and emphasis on written care documentation (vs. verbal or picture-based instruction)
- Lack of education/health literacy courses
- Providers and staff often do not speak patients' native languages such as Spanish, Portuguese, French Creole, and Yiddish
- Providers and staff do not demographically represent the target patient population and may not have a sufficient understanding of the communities in which they are working
- Providers lack awareness of the particular competencies and accommodations needed for special needs patients.

Survey instrument is included in Appendix A3.

HIT/HIE Survey of Capabilities

The Hudson Valley DSRIP Partner Health IT and Analytics Survey was fielded to healthcare organizations throughout the region between August and October 2014. Thirty-four organizations responded. The majority of survey respondents have an EHR platform, but there is wide variation in the platform vendor used among respondents and in the inpatient and ambulatory settings. There is wide variation in HIE platform vendors among survey respondents. Four respondents noted participation in THINC, while five respondents noted that they do not currently possess HIE capabilities or participate in a regional HIE. 31 respondents noted wide variation in the level of staffing resources supporting health IT infrastructure and initiatives. Four respondents use external consultants to support their IT needs.

Survey respondents were asked: "What is the most critical IT capability you feel your organization is missing and requires in order to participate in DSRIP?" Responses include: Ability to connect to an HIE/bidirectional exchange of patient data from a RHIO; Integration of primary care and behavioral health systems; Interoperability among EHRs and Access to patient registries.

Survey instrument and detailed summary including THINC connectivity and EHR Adoption and Meaningful Use Certification are included in Appendix A4.

Community Demographics:

Regional Level

The eight counties (Westchester, Rockland, Putnam, Orange, Dutchess, Ulster, Sullivan and Delaware) are home to 2.3 million residents, evenly divided by males and females. The region consists of densely populated urban areas contrasted by sparsely populated rural communities with suburban “bedroom” communities in-between; numbers of households per county range from a low of 20,000 to more than 340,000. A microcosm of the U.S., it has pockets of great wealth and pervasive poverty; median household income ranges from \$40-93,000. In cities across the region fully one third of households spend two thirds of their income on housing costs. Childhood poverty ranges from 6% in Putnam to 28% in Sullivan; there are cities within each county where childhood poverty rates exceed the national average. Approximately 46,000 grandparents live with grandchildren under 18 years of age and in over 25% of these households the grandparents have financial responsibility for care of the children.

Although the majority of the population is White, the region has also seen marked increases in minority populations. Westchester County’s city of Mount Vernon has the highest urban concentration of African American residents in New York (60%). Hispanic and Asian populations are the fastest growing minority populations, with 74% and 64% growth across the region since 2000, respectively. The aging population (≥65) in the region is expected to increase by 28.5% by 2020, outpacing NYS’s projected growth of 22.4%; the median age for the region is roughly 42 years. Orange and Rockland counties are comprised of younger populations; median age is 36 years. Foreign born residents represent a quarter of the population of Rockland and Westchester Counties. Although the major language spoken is English, it is closely followed by Spanish in most counties and in major cities in the region. French and Spanish Creole, Portuguese and Yiddish are dominant languages in some of our communities with high levels of health needs.

Educational achievement varies but on average nearly half of adults have completed high school or college; dropout rates range from 8%-15% of adults 25 years or older. Unemployment for those 16 years plus has averaged 32-40% in the past few years in some cities, including Mt. Vernon, Spring Valley, Swan Lake, and Kingston. Health literacy challenges, as reported in a survey of 45 providers across the region, are most prominent in communities where English is not the main language and is compounded when an individual is not literate in their native language. As a result a major unmet need in the area is for health educators and translators in addition to staff who are bilingual.

Vulnerable populations include individuals with disabilities, homeless, institutionalized or incarcerated. Approximately 10% of residents in the region are living with a disability. Disability among children and adults vary, from a low 7% to a high of 15% of the population within a county. Disabilities such as hearing, vision, cognitive, ambulatory, self-care, or independent living difficulty, are each afflicted upon 3-4% of the population.

There are three psychiatric centers that provide comprehensive programs for those who require institutionalized care in the region, including one forensic center; one psychiatric hospital exclusively for children and adolescents; and one for adults 18 and older with serious mental illness. County jails have a total capacity of 2500 inmates and there are 12 state correctional facilities in the region. Conservative estimates indicate there are 3500 homeless. (Please refer to Appendix B1 for a full report on homelessness and housing needs.)

In terms of health insurance coverage, 30% of the population has public health insurance and an estimated 10% are currently uninsured. There are 523,901 Medicaid-covered lives, representing 8% of the total Medicaid enrollees in NYS; and the Hudson Valley's current \$3.8 billion in Medicaid expenditures represents 8.4% of total expenditures for the state.

We prepared detailed county level profiles that present information on social determinants of health, including income, employment, housing and other social and economic determinant of health and wellness. Having a clear understanding of social determinants of health in communities we believe will influence how we coordinate local health care and provide services and support in our DSRIP projects. These profiles are available in Appendix B2 and our website.

Community Population Health & Identified Health Challenges

We reviewed health and community information available to us through the DSRIP Dashboard, OpenHealth NY, and the OMH website. In addition to data we collected on risk factors, causes of hospitalization and health indicators, we undertook a comprehensive evaluation based on the Statewide Planning and Research Cooperative System (SPARCS) for the period of 2008 through the first half of 2013 for patients from the Hudson Valley, recognizing both inpatient and outpatient activity at Emergency Rooms, Ambulatory Surgery and Hospital based clinics. This assessment was irrespective of the particular facilities or locations at which these services were rendered, in essence recognizing patient migration across various geographies. However, rather than focusing upon discharges, admissions, visits and procedures, the opportunity was available to identify the number of unique patients or individuals being severed across the many service silos and across competing providers. The opportunity then existed to measure the number and frequency of re-admissions over an extended period of time, reflecting more accurately the opportunities to better coordinate care in a population based strategy.

The focus of these efforts was to address not only the primary Medicaid population, but to also recognize dually eligible (Medicare and Medicaid) individuals in which the State program has some degree of economic responsibility. Recognizing these preliminary definitions the Community Needs Assessment has identified 165,000 individuals which are utilizing medical services under the Medicaid program from the Hudson Valley.

While there are many potential opportunities to improve the health and well-being of the Medicaid population, the Community Needs Assessment has identified significant broad categories and several specific conditions worthy of in-depth assessment. These include: Cardio-Vascular, Respiratory, Behavior Health (Psychiatric), Infectious Diseases, Cancer (Oncology) and Maternal-Child. Each of these has been further evaluated based upon the Clinical Classification Software (CCS) developed as a Federal-State-Industry partnership. Employed in many types of projects analyzing data on diagnoses and procedures in both the inpatient and outpatient setting the CCS categories are an improvement upon the reimbursement methodologies referred to as prospective payment and Diagnostic Related Groups (DRGs). In these subsequent detailed evaluations providers and participants have been addressing the longitudinal trends, seasonal patterns, demographics and geographic prevalence indicators, to better understand the opportunities to improve the health within the diverse communities across the Hudson Valley Region. The specific clinical categories include:

- Cardio-Vascular Conditions:
 - Congestive Heart Failure (CCS: 108)

- Acute Myocardial Infarction (CCS: 100)
- Respiratory Conditions:
 - Congestive Obstructive Pulmonary Disease (COPD; CCS: 127)
 - Asthma (CCS: 128)
- Behavioral Health:
 - Substance-related Disorders (CCS: 661)
 - Alcohol-Related Disorders (CCS: 660)
 - Mood Disorders (CCS: 657)
- Infectious Diseases:
 - HIV & AIDS (CCS: 005 and SPARCS: AIDS Flag)
- Cancers (Oncology):
 - Colon-Rectal (CCS: 014)
 - Bronchus/Lung (CCS: 019)
 - Breast (CCS: 024)
 - Cervical (CCS026).

Prevalence rate information was analyzed utilizing hot spot identification via the SatScan statistic. Perinatal data (numerators and denominators) are from the NYSDOH Vital Statistics Program (2010-2012). Detailed information on our methodology is in Appendix C.

We also analyzed patient volume and disease burden by zip code using data from the Medicaid Chronic Conditions file available on OpenHealth NY (Appendix D1). The chronic health categories represented in the data file are: Diabetes Mellitus, Diseases and Disorders of the Cardiovascular System, Diseases and Disorders of the Respiratory System, HIV Infection, Mental Diseases and Disorders, Newborn and Neonates and Substance Abuse. Data tables are available in Appendix D2. Medicaid beneficiaries were mapped as raw counts as well as by densities (beneficiaries per square mile).

Prevalence rate and disease burden maps are available in Appendix D3.

Community Population Health: Regional Overview

Based on Vital Statistics data the 5 leading causes of death are heart disease, cancer, chronic lower respiratory diseases (CLRD), stroke, and unintentional injury. Among minority populations diabetes replaces CLRD. The top causes of premature death are cancer, heart disease, unintentional injury, CLRD, and stroke or suicide. On average, the ratios of Black non-Hispanics and Hispanics to White non-Hispanics percentage of premature death for the Mid-Hudson region are 1.99 and 2.29, respectively. A closer look at each county indicates a wider range of 1.92 – 3.01 for these groups compared to their White non-Hispanics counterpart.

SPARCS data indicate that among Medicaid inpatient discharges, the top 5 conditions are maternal/child, behavioral health, digestive, respiratory, and heart disease. Age-adjusted preventable hospitalizations were below the 2017 objective of 133.3 per 10,000, with significant variation in rates ranging from 93.8 (Rockland)) to 128.1 (Delaware). Ratios of Black non-Hispanics to White non-Hispanics in Dutchess and Westchester are 2.01 and 2.22, respectively, significantly higher than the 2017 objective of 1.85 for these groups.

Based on the Medicaid Inpatient Prevention Quality data, risk-adjusted ambulatory care sensitive condition rates are 90% and higher for all 8 counties. Dutchess, Putnam, and Westchester are above 100%; Westchester has the highest rate of 117.4%. Specific Prevention Quality Indicators are listed in the table below.

Table 2 - Prevention Quality Indicators

County	% of cigarette smoking among adults (2013-2014)	Asthma ED visit rate per 10,000 population (2012)	% of adults who are obese (2013-2014)	Age-adjusted heart attack hospitalization rate per 10,000 (2012)	Rate of hospitalizations for short-term complications of diabetes per 10,000 (18+yrs old) (2010-2012)
PA 2017 Objective	15	75.1	23.2	14	4.86
Delaware	22.9*	30.5	24.3	18.6*	4.9
Dutchess	16.1*	52.7	24	13	4.2
Orange	15.7*	67.8	31.8*	18.1*	5.9
Putnam	13.9	32.2	21.7	11.8	3
Rockland	10.2	36.3	22.6	13.2	3.8
Sullivan	24.5*	68.9	28.3*	24.4*	6.2*
Ulster	21.1*	40.4	27.6*	14.9	4.8
Westchester	11.7	64.3	20.6	13.3	3.7
Mid-Hudson	14.1	56.4	23.9	14.4	4.3
STATEWIDE	15.6	88.6	24.9	15.2	6.1

*value higher than Statewide PQI

Disease Prevalence

CVD inpatient patterns revealed a very large northwestern cluster in the Catskill region spanning most of Sullivan and Ulster, approximately half of Orange and zip codes in western Dutchess. There were geographically smaller isolated clusters scattered throughout Westchester (e.g., Peekskill, Yonkers, Mt. Vernon and Somers). Clusters for CVD-related ER visits showed a different spatial pattern, with a large hotspot centered over Poughkeepsie and in the Middletown/Monticello area. There were geographically smaller clusters in Westchester and eastern Rockland.

When diabetes is examined by volume of Medicaid beneficiaries, large counts are seen in southern Westchester County (Yonkers, Mount Vernon, New Rochelle) through northwest Westchester (Peekskill), western Rockland (Spring Valley, Monsey), Orange County (Newburgh and Middletown/Port Jervis areas), western Dutchess (Poughkeepsie), and the Kingston area in Ulster County. The highest volumes in Sullivan County are in Monticello and Liberty.

Both COPD and pneumonia hospitalization clusters had similar distributions to CVD, with a large cluster in the Catskill region and smaller clusters in southern Westchester, northern Westchester (e.g., Somers), and northern Rockland (e.g., Haverstraw). Asthma, however, showed a different spatial pattern. There was no apparent large Catskill hotspot; there were clusters of elevated risk appearing around Middletown, Newburgh, Poughkeepsie, Haverstraw, and southern Westchester.

Clusters of cancer hospitalization rates demonstrated different patterns than the previous diagnoses, with rates of total cancer patients showing a large hotspot in northern Ulster (including Kingston), a large cluster spanning much of Rockland (from Nyack to Stony Point), and a cluster in lower Westchester ranging from the Bronx border in the south up to Hartsdale. Cervical cancer clusters revealed a large hotspot occupying most of Ulster County, and smaller clusters around Yonkers/Mt. Vernon and in Bedford Hills. Breast cancer had a large cluster in Ulster and a large area of elevated risk which encompassed the majority of Westchester and Rockland Counties (excluding Yonkers and Mt. Vernon). Colon cancer revealed two clusters in Ulster (Pine Hill and Kingston) and a relatively large hotspot in southern Westchester and southern Rockland. Respiratory cancer hospitalization rate clusters were distributed similarly to colon cancer, with a hotspot centered in Kingston, a cluster in southern Westchester, and a geographically small cluster around Somers.

Behavioral health, mental health, and substance abuse clusters mainly followed similar patterns described above (large northern cluster(s), southern Westchester cluster, and smaller isolated clusters in Westchester and Rockland). Alcohol abuse rates showed smaller more discrete hotspots around Kingston, Monticello, and Poughkeepsie, and clusters in northern Rockland, Nyack, and southern Westchester.

Information on Medicaid beneficiaries with behavioral health diagnoses by number of ambulatory care visits in the last 12 months; number of chronic conditions (diabetes, asthma, cancer, and child-birth related claims) and service utilization in our counties of interest is presented in Table 3.

Table 3 - Behavioral Health

Medicaid Behavioral Health Population Demographics								
	DUTCHESS		ORANGE		ULSTER		WESTCHESTER	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Total PSYCKES Population (past year)	59,421	100%	76,889	100%	86,917	100%	349,543	100%
Total Female	34,842	59%	45,153	59%	51,323	59%	213,892	61%
Total Male	24,579	41%	31,736	41%	35,594	41%	135,651	39%
Child 0-5	2,018	3%	2,954	4%	1,424	2%	16,355	5%
Child 6-12	5,365	9%	7,398	10%	4,460	5%	34,939	10%
Child 13-17	3,949	7%	5,323	7%	4,199	5%	24,862	7%
Adults 18+	48,089	81%	61,214	80%	76,834	88%	273,387	78%
Total BH population with diabetes	8,633	15%	10,943	14%	16,852	19%	61,317	18%
Total BH population with neoplasms	6,729	11%	7,773	10%	8,852	10%	39,558	11%
Total BH population with diseases of the respiratory system	23,233	39%	31,873	41%	30,534	35%	125,787	36%
Total BH population with childbirth-related claims	3,594	6%	4,570	6%	3,020	3%	20,237	6%

Medicaid Behavioral Health Population Utilization Trends								
	N	% of Total	N	% of Total	N	% of Total	N	% of Total
	Total with 0 ambulatory BH	40,810	69%	56,302	73%	54,513	63%	254,320
Total # with 1+ ambulatory BH	18,611	31%	20,587	27%	32,404	37%	95,223	27%
Total # with 1+ Ambulatory MH	15,684	26%	16,820	22%	29,039	33%	79,978	23%
Total # with 1+ Clinic MH	14,873	25%	15,988	21%	27,727	32%	77,377	22%
Total with 1-2 Clinic MH	4,457	8%	5,428	7%	8,520	10%	27,810	8%
Total # with 3+ Clinic MH	10,416	18%	10,560	14%	19,207	22%	49,567	14%
Total # with 1+ BH ER visit	3,851	6%	4,366	6%	4,804	6%	16,915	5%
Total # with 1+ BH Inpatient stay	3,478	6%	3,986	5%	3,880	4%	18,079	5%
Total unduplicated individuals with 1+ BH ER and/or Inpatient claims	6,313	11%	6,584	9%	7,793	9%	26,747	8%

Source: PSYCKES, (9/1/13-9/1/14)

According to the NYS DOH, the number of HIV cases has consistently decreased over the last several years. Data from 2009-2011 indicate that the region has an adjusted rate of 8.6 per 100,000, slightly higher than the central and northeastern regions but about average for upstate New York and significantly lower than NYC and NYS overall rates (36 and 20 respectively). Notably, however, Westchester County has the highest rate (11.6) among all counties. The region has a rate of 10.6 per 100,000 for syphilis, generally higher than upstate NY, but lower than NYC and NYS overall. The region has a rate of 34.2 per 100,000 for gonorrhea, lower than any region in NYS, including NYS overall rate. For Chlamydia, the region has a rate of 238 per 100,000, lower than upstate NY and significantly lower than NYC and NYS overall rates.

The general area of western Orange and southern Sullivan revealed elevated risk for both pre-term and low birth weight births, which was also consistent with higher risk for late or no prenatal care. Lower Westchester also revealed consistent elevated risk for these same outcomes, particularly in Yonkers, Mount Vernon and Bronxville. The proportion of births covered by public insurance was also elevated in the Yonkers-Mt Vernon area and the entire Catskill region.

The proportion of total births delivered by C-section (primaries plus repeats) was highest in lower Westchester County; C-sections for both total births and those covered by public insurance revealed other clusters with lower risk but still statistically significant.

According to NYS Vital Statistics data for Early Entry into Prenatal Care by County, in 2007 there was a decline in the number of women receiving care during the first 3 months of pregnancy in Orange, Ulster, and Sullivan Counties over a ten-year period. Orange County reported the lowest rate of 54.8% compare to NYS rate of 69.2%. Data from the same source at a later time point (2010-2012) continue to show problematic areas at the zip code level for Percent of Births with Late or No Prenatal Care: 6 zip codes in Ulster County, 7 zip codes in Orange County, 14 zip codes in Sullivan County, and 8 zip codes in Westchester County have rates higher than NYS overall. Not surprisingly, five of our identified hot spot zip codes (see page 22) are among those with high rates.

The five leading birth defects for the counties (birth data 2002-2004) are hypospadias & epispadias, obstructive defects of renal pelvis and ureter, ventricular septal defect, congenital hypertrophic pyloric stenosis, and undescended testicle. Delaware, Orange, Rockland, and Sullivan all reported Down Syndrome cases.

Health Risk Factors

An analysis of the Prevention Agenda indicates 30 health status areas that are still in need of improvement including high adult un-insurance rates, low rates of adults who have a regular health care provider, and low percentage of children with the recommended number of well child visits in government-sponsored insurance programs. Orange County has multiple risk factors and low rates of adults who receive colorectal cancer screening, children with immunization series, and percent of children and woman with any health insurance.

Table 4 – PQI for Select Health Risk Factors

County	Percentage of adults (aged 18-64) with health insurance (2011)	Age-adjusted percentage of adults who have a regular health care provider - Aged 18+ years (2013-2014)	Percentage of children who have had the recommended number of well child visits in government sponsored insurance programs (2012)
PA 2017 Objective	100	90.8	76.9
Delaware	84.8	81.8*	60.8*
Dutchess	87.2	86.7	73.0
Orange	85.1	78.3*	67.3*
Putnam	88.7	87.1	75.1
Rockland	85.0	77.1*	69.5
Sullivan	82.6*	87.4	64.8*
Ulster	84.7	79.6*	62.8*
Westchester	84.6	81.5*	68.7*
Mid-Hudson	Not Available	81.3*	68.5*
STATEWIDE	83.7	84.4	69.2

**value lower than Statewide PQI*

Common risk factors across the region include childhood obesity and adult smoking (except Westchester). Northern counties also experience high rates of adult obesity. Putnam and Delaware report an excessive amount of adult binge drinking. Age-adjusted suicide death rate per 100,000 is reported for all 8 counties with rates ranging from 6.3 in Rockland to 17.6 in Delaware compared to the 2017 objective rate of 5.9. Interpersonal violence data indicate that ratios of Black non-Hispanics to White non-Hispanics for assault-related hospitalization rate per 10,000 are higher in Orange and Westchester counties; the ratio for Hispanics to White non-Hispanics is also higher in Westchester County.

Environmental factors for the region also indicate areas of potential health improvement. With the exception of Westchester and Delaware counties, percentages of population with low income and poor access to a supermarket or large grocery store, are high, leaving tens of thousands of residents with inadequate access to fresh and

healthy foods. Access to optimally fluoridated water is yet another major concern. With the exception of Westchester, all counties have very low percentages of residents served by community water systems with optimally fluoridated water; Dutchess, Putnam, Rockland, and Ulster reported percentages in the single digits compare to the 2017 objective percentage of 78.5. Expectedly, 4 out of the 8 counties reported a high percentage of third graders with evidence of untreated tooth decay. Access to clean air for the region's residents who live in a jurisdiction that adopted the Climate Smart Communities pledge (Dutchess, Putnam, and Delaware) all report considerably lower percentages as compare to the 2017 objective. Percentages of employed civilian workers who use alternate modes of transportation to work are low across all 8 counties, on average 20-25% compared to the 2017 objective goal of 49.2.

Identified Health Challenges: Hot Spotting

In our final set of analyses, we identified zip code level hot spots using beneficiary count data available through Open Health NY and categorized by: Diabetes, Congestive Heart Failure, Coronary Atherosclerosis, Hypertension, Asthma, Chronic Obstructive Pulmonary Disease and Bronchiectasis, HIV Disease, Bi-Polar Disorder, Bi-Polar Disorder – Severe, Depression, Depressive and Other Psychoses, Depressive Psychosis – Severe, Schizophrenia, Chronic Alcohol Abuse, and Opioid Abuse. For each category we identified the top 10 high density zip codes. We then combined all categories; there were 9 ZIP codes more frequently represented than all others (ZIP codes in position 1 through 9 appear between 18-20 times on the list whereas the ZIP code in position 10 only appears 6 times). They are Mt. Vernon (10550), Yonkers (10701 and 10705 appear 20 and 18 times, respectively), Kingston (12401), Newburgh (12550), Middletown (10940), Poughkeepsie (12601), New Rochelle (10801), and Spring Valley (10977).

Using data from the American Community Survey combined with the information we collected from the CNA, we interactively mapped Narrative Profiles that can then be used to build stories about the health status, social, economic, housing and demographic characteristics of a neighborhood. Following the lead of Dr. Jeffrey Brenner of the Camden Coalition we posted our zip code level profiles (Appendix E) on our website so that community members and providers, who know their cities so well, can *“begin to take the data and tell stories with the data. And that's an incredibly powerful tool for making change” (Dr. Brenner).*

We then queried data regarding Medically Underserved Areas/Populations (MUAs) from the Health Resources and Services Administration site (muafind.hrsa.gov/) to determine if our 9 zip codes fell within MUA areas. This data, which is tabular and reported both as census tracts (CTs) as well as Minor Civil Divisions (MCDs), was brought into a geographic information system (ESRI ArcMAP 10.2) and all zip codes in

the Hudson Valley were appended with information regarding intersecting CTs or MDCs (zip codes which intersected multiple CTs and MDCs were listed multiple times, once for each unique CT or MDC). These tables were then joined with the MUA data in order to identify zip codes which intersect with MUA areas. Of the nine zip codes identified by the PPS, seven of them fall within defined MUAs (total population: 344, 100) including Mt. Vernon and Yonkers in Westchester; Newburgh and Middletown in Orange; Poughkeepsie in Dutchess; and Spring Valley in Rockland. The two zip codes that are not within MUA service areas are Kingston (12401) and New Rochelle (10801), although both areas demonstrate extremely high needs and beneficiary volumes.

Healthcare Provider Infrastructure

Numbers and types of healthcare providers available to meet the needs of the region are itemized below. Information was collected using publicly available information from dozens of websites and reviewed and updated for completeness by our PPS partners. In sum our healthcare resource workbook reflects 27 different resources numbering over 47,500 providers and programs. Our entire workbook by organization is included in Appendix F and includes details for each organization.

Hospitals: There are 51 hospitals; 30% are ranked as high performers and only two hospitals are considered poor performers. These 51 hospitals serve a wide range of patients, from 54 (Margaretville) to over 10,000 patients (NY Presbyterian – Westchester Division). According to the Center for Health Workforce Studies, the region also has 297 hospital beds, 608 nursing home beds, 189 adult home beds, and 80 assisted living beds per 100,000.

Ambulatory Surgical Centers: There are roughly 685 ASC providing services such as basic and advanced imaging, surgery, chemotherapy, endoscopy, ophthalmology, pain management, radiation and physical therapy, and sleep studies.

Urgent Care Centers: We are able to identify 13 urgent care centers in the region: 2 each in Putnam and Ulster, 3 in Orange, 5 in Sullivan and 6 in Westchester.

Health Homes: There are 14 DOH designated health homes in the region under the auspices of 3 main service systems: The Mary Imogene Bassett Hospital (Delaware); Hudson River Healthcare, Inc and Open Door Family Medical Center (Dutchess, Orange, Putnam, Rockland, Sullivan, and Westchester); and Institute for Family Health (Ulster).

Hospices: There are 10 hospices identified in the region - one each in Dutchess, Orange, Rockland, and Ulster counties; two in Delaware; and four in Westchester.

FQHCs: There are 66 FQHCs in the region under the auspices of 6 main service systems, Greater Hudson Valley Family Health Center, Hudson River HealthCare, Open Door Family Medical Center, Middletown Community Center, Mount Vernon Neighborhood Health Center Network, and Institute for Family Health and the following 7 counties: Dutchess (7), Orange (19), Putnam (2), Rockland (6), Sullivan (2), Ulster (7), and Westchester (23). These FQHCs serve as community health centers and migrant health centers with special services such as public housing and health care for the homeless. 30 of these FQHCs serve the rural populations and 36 serve the urban populations with hours ranging from 5 hours per week for the Mobile Van Putnam

Farmworker Clinic to 89 per week for Refuah Health Center. While the majority of these FQHCs sites are permanent locations, there are also 7 mobile FQHCs and 1 seasonal FQHC.

We identified 5,048 primary care providers in the region. According to the Centers for Health Workforce studies, there are 120 Primary Care Physicians, 1,390 registered nurses, and 339 Licensed Practitioner Nurses per 100,000 respectively, with as few as 61 practicing Primary Care Physicians in total in Sullivan County compared to as many as 1,409 in total in Westchester County.

Residency programs: There are 37 residency programs in the region, with 184 graduates completing the programs annually. All but 1 are in Westchester County and provides residencies for NYMC's graduating class of 176 medical residents. Ulster County has the remaining programs with 6 graduates.

Specialty Medical Providers: There are 43,460 specialist providers identified in the region.

Dental Providers: There are 366 dental providers that accept Medicaid patients. These practices serve a wide range number of Medicaid patients, from 11 patients in a single private practice to about 9,300 patients in a large health center, such as Refuah Health Center in Rockland County.

Rehabilitative Services: There are 129 rehabilitative service providers found in the region.

Specialty Medical Programs: There are 133 outpatient surgery and 470 diagnosis and treatment clinics found in the region.

Skilled Nursing, assisted living: There are 88 skilled nursing homes in the region. We also identified 16 licensed assisted living facilities in the region.

Home care services: We have identified 177 home care providers in the region.

Laboratory and Radiology: According to the DSRIP dashboard, there are 146 laboratories in the region, with a range of 3 or 4 providers in Delaware and Sullivan counties to about 50 providers in Westchester County.

Specialty Service Providers (vision, DME): According to the DSRIP dashboard, in 2013 there were 253 providers that offer eye care services to Medicaid enrollees for a total of about 51,000 unique patients in 7 of the 8 counties. Putnam's information was not available.

DSRIP dashboard also reported 451 DME providers for 24,500 unique Medicaid enrollees in 2013. Delaware County, however, did not have any providers listed.

Pharmacies: We identified 402 pharmacies in the region.

Local Health Departments: This category includes an array of departments with services related to health such as the Department of Health, Mental Hygiene, Emergency Services, Social Services, Public Health, and Environmental Health. Therefore, for the region, there are 35 local health departments.

There are also 21 community health centers in the Hudson Valley region.

Managed Care Organizations: Medicaid recipients in the 8 counties have the option to enroll in 8 different managed care organizations: NYS Catholic Health Plan, Hudson Health Plan, MVP Health Plan, Wellcare of New York, Amerigroup, Affinity Health Plan, United Healthcare Plan of NY, and HIP of Greater New York. NYS Catholic Health Plan has been the most widely available plan with enrollees from all 8 counties. However, Hudson Health Plan has the highest number of enrollees with a total of about 110,000 or one-third of total enrollees.

Foster Children Agencies: Foster care service for the entire region is under the auspices of the Spring Valley Regional Office.

Area Health Education Centers: 6 of the 7 counties utilize the Catskill Hudson Area Health Education Center's services. Westchester County is the only county that is served by the Bronx-Westchester Area Health Education Center.

Behavioral Health Resources

In our healthcare resources workbook, we identified 103 OMH programs in the region, which comprise 21 emergency/crisis intervention programs and 82 outpatient programs. The outpatient programs are further broken down into 8 assertive community treatment (ACT) providers, 13 personalized recovery-oriented services, and 61 clinic treatment programs.

In the region's hospitals there are 15 hospitals with provision of 777 psychiatric beds (34 per 100,000).

There are 174 residential programs that serve residents in the 8 counties:

Outpatient, support, youth: There are 104 outpatient programs in the region, as well as 378 support programs. In addition, 11 programs serve adolescents only, 16 programs serve children only, and 137 programs serve both children and adolescents.

Future 1915i providers: According to the OMH currently funded agencies listing for all DSRIP 1915i (version date 9/16/14), out of 211 currently qualified 1915i providers for NYS, 27 belong to the region although there are no registered providers listed for Delaware County.

Alcohol and Substance Abuse: We identified 125 substance abuse providers in the region with 26 residential treatment programs, 14 inpatient treatment providers, 66 outpatient providers, and 27 prevention providers.

Community Resources Supporting PPS Approach

Numbers and types of community resources available to meet the needs of the community are itemized below. This information exists in an online directory by county on our PPS website; the categories are described and organizations are listed alphabetically for ease of use by community members. Organization information includes address, telephone number and website (Appendix G). Information was collected using publicly available information and reviewed and updated for completeness by our county health department and PPS partners. In sum our community resources workbook reflects 26 different resources numbering over 2,350 organizations and programs.

Housing Services: About 120 agencies

Food banks, etc: 48 food banks were identified for the region.

Farmers' Markets: Over 100 farmers' markets were identified for this region.

Community Gardens: 15 organizations were identified for programs related to community gardens in the region.

Clothing, furniture: 7 organizations were identified in this region.

Specialty education programs for special needs children: 27 programs were identified for this category.

Specialty community-based and clinical services for individuals with I/DD: 22 organizations were identified with this service category.

Self-Advocacy and family support for I/DD: 41 organizations were identified with this service category.

Youth Development Programs: 92 youth development programs were identified for this region.

Community outreach agencies: 252 agencies were identified for this category.

Community Service Organizations: Over 100 agencies were identified for this category.

Religious service organizations: 71 organizations were identified for this category.

Not for profit health and welfare agencies: 323 agencies were identified for this category.

Peer and Family Mental Health: 123 agencies were identified for this category

Peer Supports (Recovery Coaches): We were able to identify 7 peer supports programs in the region.

Family support and training: 194 agencies were identified for this category.

Transportation services: There are 13 transportation services identified for the Hudson Valley regions.

Education: 650 education institutions, such as elementary, middle and high schools, as well as various colleges and universities were identified in the region.

Libraries with open access computers: 142 public libraries with computer access were identified for this category.

Local governmental social service programs: Each county has its own Department of Social Services; there are 8 in our region.

Community based health education for health professions/students: 126 agencies were identified for this category.

Individual Employment Support Services: We were able to identify 9 organizations with IESS programs.

NAMI: Each county has its own NAMI chapter, therefore there are 8 NAMI chapters in the region.

Alternative to Incarceration: We were able to identify 6 Alternative to Incarceration programs in the Hudson Valley region.

Ryan White Programs: None. Dutchess County had Ryan White Program funding through 2012, when it no longer qualified to receive funding.

HIV Prevention/Outreach & Social Service Programs: We were able to identify 50 HIV prevention/outreach programs in the region.

Summary of CNA Findings

The region possesses a rich history and highly developed network of resources that provide quality care throughout the Hudson Valley. This was clearly evidenced as we undertook our CNA. There is also a consensus that there are many opportunities to improve population health in the region. Through this collaborative effort we have identified several specific conditions and community needs worthy of attention, which are summarized in Table 5. Each PPS will identify additional provider and community resource gaps and determine which approaches are required to expand, repurpose or to develop new resources to meet the needs of the community. This is the work for project planning. The data, workbooks and maps presented in the Appendices provide a wealth of information to help identify crucial gaps in health status, access and utilization of services that are essential in project selection.

We embraced guidance from the Community Health Assessment and Group Evaluation (CHANGE) developed by the CDC in developing our CNA process. We did this in part because the needs and opinions of community stakeholders across sectors are gathered in a systematic way that supports DSRIP requirements. The foundations of CHANGE include commitment, assessment, planning, implementation and evaluation. More importantly, we chose the CHANGE tool because of our commitment to sustain the involvement of communities throughout the implementation and evaluation of our selected DSRIP projects. In areas where we have not been able to collect comprehensive and complete information, e.g. local policies, we will, with the support of our stakeholders and partners, continue to enrich our community profiles. Our dynamic CNA process is not yet completed; it really has just begun.

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Table 5 - Summary of Key Findings

1. Capacity to provide care across the continuum varies throughout the region; there are insufficient resources for lower-income groups and many higher-risk patients do not qualify for care management services.
2. Current hospital bed capacity will more than satisfy minor anticipated growth in regional demand; there is a growing need for ambulatory services.
3. Many patients are readmitted to acute care within 30 days; this is particularly true for substance abuse and mental health patients.
4. There are increasing levels of uninsured within the region and a significant number of patients who are low utilizers of key prevention services (e.g. adult with routine check-ups). ED utilization also reveals the need to better activate patients.
5. Behavioral Health disease is prevalent within the region; medical and BH preventable readmission and ER visits are significant in this group and are due to insufficient care alternatives within the community (e.g. mobile crisis outreach, peer supports).
6. Data suggest high rates of diabetes especially among higher-risk patients in the region. Community survey results indicate that 58% of respondents consider diabetes to be a top five health issue in their community; few respondents reported accessing nutrition or weight loss programs and less than half reported accessing diabetes testing services within the past 12 months.
7. When asthma and COPD are examined large numbers of hospitalizations and ED visits are evident, especially among children in specific geographic areas.
8. There are high volumes of COPD/Bronchiectasis prevalent throughout the region with clusters of respiratory cancer hospitalization rates. Five counties have much higher adult tobacco use compared to the 2017 Prevention Agenda; adults with BH conditions average smoking rates of 32%.
9. Low cancer screening rates are found in the northern region of the Hudson Valley for breast,, cervical and colorectal cancers. Hospitalization rates for respiratory cancer suggest a need for lung cancer screening.
10. There are over 3500 homeless in the region. Focus group participants indicate that housing and services that help people stay in their homes are critical supports for vulnerable populations including the disabled and those with behavioral health and substance abuse challenges.
11. The general area of western Orange and southern Sullivan revealed elevated risk for both pre-term and low birth weight, which was also consistent with a higher risk for late or no prenatal care. Lower Westchester also revealed a consistent elevated risk for these same outcomes, particularly in Yonkers and Mount Vernon. Orange County has low rates of children with immunization series.

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List of Appendices

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