JOHN SNOW, INC.

CENTRAL NEW YORK CARE COLLABORATIVE COMMUNITY HEALTH ASSESSMENT

FINAL REPORT

Acknowledgements

This Community Needs Assessment (CNA) was initially conducted on behalf of a loose partnership of four emerging Performing Provider Systems (PPSs) that were individually taking steps to apply to the New York State's Delivery System Reform Incentive Payment (DSRIP) Program. This group of PPSs came together to collaborate on a regional community needs assessment as part of their application requirement and each PPS identified a representative to participate in the Community Needs Assessment Steering Committee. Over the course of the assessment, the four PPSs opted to merge their efforts and to collaborate on a single DSRIP application, as a single, joint PPS.

John Snow, Inc. (JSI) would like to acknowledge the great work, support, and commitment of this Steering Committee, which met periodically throughout the assessment in order to keep abreast of the assessment's progress and to provide feedback that was absolutely vital to its outcome.

Since the beginning of the assessment in early August 2014, hundreds of individuals participated in meetings and/or were interviewed by John Snow, Inc. (JSI) or other CNYCC partners. These participants included representatives from health and social service provider organizations, public health departments, community advocacy groups, community businesses, and many other types of community organizations, as well as from the community at-large. The information gathered as part of these efforts allowed JSI, its partners, and the CNA Steering Committee to engage the community and gain a better understanding of community capacity, strengths, and weaknesses as well as community health status, barriers to care, service gaps, underlying determinants of health, and overall community need.

On behalf of the CNA Steering Committee and all of the senior leadership from each of the initial PPSs, JSI would like to thank everyone that was involved in this assessment, but particularly the region's service providers, health departments, advocacy groups, and community members who invested their time, effort, and expertise through interviews, focus groups, and community meetings to ensure the development of a comprehensive, thoughtful, and quality assessment. While it was not possible for the JSI project team to talk with all of the community's stakeholders, the project team talked with a vast and hopefully representative sample. This group is committed to strengthening the regions system of care, particularly for those who are Medicaid insured or uninsured and often from segments of the population who are most at-risk. This assessment would not have been possible or nearly as successful without the support of the all of those who were involved. Please except our heartfelt appreciation and thanks for your participation in this assessment.

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John Snow, Inc. (JSI)

John Snow, Inc., and our nonprofit JSI Research & Training Institute, Inc., are public health management consulting and research organizations dedicated to improving the health of individuals and communities throughout the world.

JSI's mission is to improve the health of underserved people and communities and to provide a place where people of passion and commitment can pursue this cause.

For 35 years, Boston-based JSI and our affiliates have provided high-quality technical and managerial assistance to public health programs worldwide. JSI has implemented projects in 106 countries, and currently operates from eight U.S. and 81 international offices, with more than 500 U.S.-based professionals and 1,600 host country staff.

JSI is deeply committed to improving the health of individuals and communities worldwide. We work in partnership with governments, organizations, and host-country experts to improve quality, access and equity of health systems worldwide. We collaborate with government agencies, the private sector, and local nonprofit and civil society organizations to achieve change in communities and health systems.

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G. **Mapping Applications:** Links to the four mapping applications, as well as an overview of the level of analysis and layers available.

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I. **List of Key Informant Interviews by County:** This list includes the name, organization of affiliation, and interview type for all key informant interviews conducted.

J. **CNYCC Regional Maps.** Several maps of the CNYCC region are included. These maps provide demographic and utilization data at the sub-county level. The maps are static images pulled from a series of dynamic, online mapping applications.

Note: At the time the Appendices for this report were created, eleven counties were included in the PPS service area. Since then, the number of counties included in the service area was reduced to six. While the report includes only those counties which were finally included in the service area, some of the appendices include data elements from the original eleven counties.

I. OVERVIEW OF THE DELIVERY SYSTEMS REFORM INCENTIVE PROGRAM AND THE COMMUNITY HEALTH ASSESSMENT

A. DSRIP Overview

The Delivery System Reform Incentive Payment Program (DSRIP) is groundbreaking initiative to transform the health system of New York State. The over-riding focus of DSRIP is reducing avoidable hospital use by 25% over 5 years for the Medicaid and uninsured population in New York State. However, DSRIP has five key goals. First, DSRIP aims to be a truly transformative initiative at both the system- or market-level as well as the state level. The primary driver of this transformation will be a series of Performing Provider Systems (PPS), which have been formed throughout the State of New York as broad, truly collaborative entities that will work together to achieve the goals of DSRIP. However, there are a range of policy and regulatory changes that will occur at the State-level that will also have tremendous impact on facilitating the transformation.

Second, DSRIP aims to reduce avoidable hospital use and improve other health and public health measures. While the primary measure of success is clearly reduction of avoidable hospital use, there is a clear appreciation for the fact that this cannot be accomplished without also addressing the underlying root causes of illness that are responsible for the bulk of death and disease in the population.

Third, DSRIP aims to sustain the transformation beyond the 5-year waiver period by building on New York State's efforts of related to payment reform. Integral to this effort will be shift away from traditional fee-for-service methods of payment to more global forms of payment combined with paying service providers across the spectrum for achieving specific patient-related metrics or outcomes (Pay-for-performance).

Fourth, DSRIP aims to provide financial support to the PPS, and particularly the State's vital safety net providers, to support the systems transfer and development of critical market-level infrastructure.

Finally, if DSRIP is going to have a lasting impact on the leading causes of illness and death in their service areas, it is clear that the PPSs' initiatives will have to look beyond the walls of the traditional health care setting and involve the public health and community health sectors. In conceptualizing DSRIP, the State is making a very conscious effort to move the worlds of clinical medicine and primary care and the worlds of public health and community medicine closer together. As a result, the PPSs' will need to involve these sectors, along with behavioral health, dental health and community organizations, in the process and explore how to integrate the efforts of these sectors in meaningful ways.

B. The Central New York Care Collaborative and the Context of the Service Area

The Central New York Care Collaborative (CNYCC) PPS is made up of the broad range of health, public health, and community partners in the region that must be united to truly reform the health care system. The CNYCC is made up representatives from hospitals; primary care, behavioral health, medical

specialty, and dental practices; nursing homes and skilled nursing facilities; local public health agencies; housing agencies; single and multi-service community and social service agencies; and a myriad of other health and community agencies. The CNYCC is also linked to and involves a broad range of other critical partners including labor union officials, academic partners, elected officials/policy makers, advocacy organizations, business partners, the media, and private foundations.

The service area for the CNYCC spans six counties in the Central portion of Upstate New York from Lewis County in the North Country near the Canadian border, to Madison County in the south, to Cayuga County in the west, and Oneida County in the east. Specifically, the CNYCC encompasses the following eight Counties: Cayuga, Lewis, Madison, Oneida, Onondaga, and Oswego (Figure 1).

The region is largely rural but has a number of substantial population centers, including the Cities of Syracuse and Utica, which are the dominant metropolitan areas in the region. Demographically, the population is predominantly White, non-Hispanic but
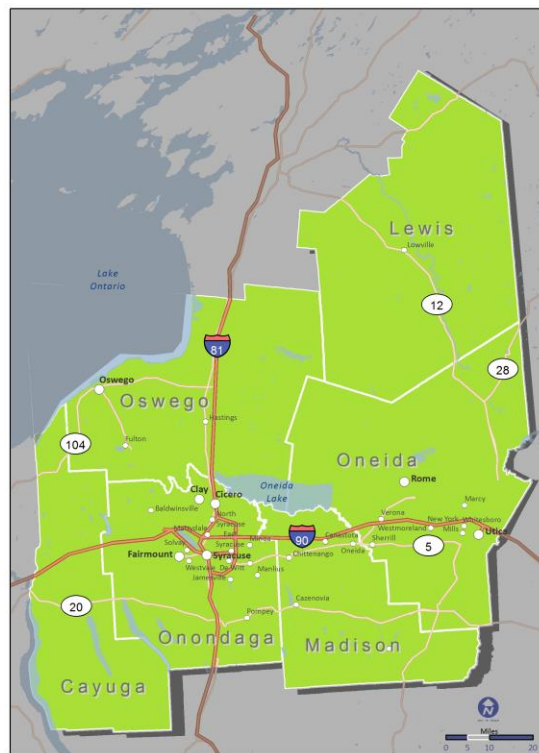
Figure 1: CNYCC Service Area Map

there are significant pockets of racial/ethnic minority populations throughout the region, including large communities of recent immigrants, refugees, and asylees, particularly in Syracuse and Utica. Specifically relevant to DSRIP, there are also large proportions of low-income Medicaid insured residents living throughout the region. In fact, every county in the CNYCC service area has proportions of residents living in poverty or low income households that exceed the Upstate[1] and New York State averages. The region is slightly older than the Upstate New York and New York State populations overall with larger proportions of older adults. Economically, the region was hard hit by the economic downturn and while it has made grade strides is still recovering. There are large pockets of unemployed or under-employed workers and many residents have left the workforce.

There are great assets in the region that will be drawn on by the CNYCC to develop a strong, vibrant, collaborative system of care but the assessment will also show that there are significant gaps in health and social services and in most parts of the region the community health infrastructure is quite limited. As a result, large proportions of the population face major barriers to care and access. These factors are often intensified by the social, economic, and environmental factors that are pervasive in many of the cities, towns, villages, and neighborhoods throughout the region. Limited transportation, high rates of

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[1] Upstate New York for the purposes of the CNA is defined as all areas in the State of New York, except for New York City, which mirrors the New York State Department of Health's definition.

poverty, and lack of affordable housing are some of the leading determinants of negative health outcomes.

This document will identify these strengths, weaknesses, and details with the clarity and vision necessary to pave the way for true redesign efforts and to enable the partner organizations to invest in the staff, resources, and technology necessary to make the goals successful.

Community Health Needs Assessment Overview and Engagement Process

One of the truly groundbreaking aspects of the DSRIP program is its data-driven approach and incorporation of population health principals. All of the PPSs throughout the State are required to conduct comprehensive community health needs assessments (CHNA) that collect both quantitative and qualitative data. The CHNA must also engage all stakeholders and leverage the assessment activities conducted by local health departments and the State's community hospitals as part of the State's Prevention Agenda and the Community Health Improvement planning process. The CHNA is meant to guide and inform all aspects of the CNYCC's project selection and implementation plans, as well as ensure that CNYCC's initiatives are aligned with existing community health efforts and the State's Prevention Agenda.

The CHNA must include a description of the population to be served and an assessment of its health status and clinical care needs, as well as an assessment of the health care and community wide systems and resources available to address those needs. The essential components of the CNYCC assessment are briefly described below and are described in detail in Section V of this report. The ultimate goal of the CHNA is the selection of DSRIP projects that are based on a solid understanding of the health needs of the population and the resources available to address them that will help achieve the Triple Aim: improved health, lower costs and improved quality.

II. SUMMARY COMMUNITY HEALTH NEEDS ASSESSMENT APPROACH AND METHODS

A. Summary Approach

The goal of the community needs assessment (CNA) was to provide an understanding of the CNY region's population to be served, health status and clinical care needs, and available health care and community wide systems to address those needs. The results of this process provided the foundation for DSRIP strategy selection, ensuring that the strategies chosen reflect the actual needs of the community and that they will have a meaningful impact on Triple Aim goals: improved health, lower costs, and improved quality.

B. Summary Methods

To understand the key challenges and resources available, a significant amount of quantitative data was identified and reviewed. In addition to this quantitative review, qualitative data was acquired through a survey of PPS partners, in-depth key informant interviews, consumer engagement activities, and a review of past needs assessments. The final phase in the CHNA process was to communicate findings to community leaders to elicit feedback on and responses to the data. This section provides a brief overview of the methods used to develop this CHNA; a more comprehensive review of the methodology used to complete this CHNA can be found in Section V, subsection A.

Quantitative Data Analysis

The quantitative assessment involved a review of the data elements outlined in the DSRIP guidance according to the domains: Domain 2) System Transformation, Domain 3) Clinical Improvement, and Domain 4) Population-wide Strategy Implementation. Data sources, including those available on the Department of Health's Health NY website, were reviewed. Data elements for the counties included in the PPS were extracted and compared to Upstate and New York State averages, when available. A more complete description of the quantitative analysis can be found in Section V.

PPS Partner Survey

Concurrently, qualitative data was gathered through a number of sources, the first of which was a PPS Partner Survey. The purpose of the survey was to cast a wide net of potential partners and resources in the region. The audience for the PPS Partner Survey was identified as those organizations that the PPS had included as partners in their DSRIP planning application to NYS DOH. This original list, included in the application to NYS DOH, was used to create a list of PPS Partner Survey recipients. The list of partners included general partnering organizations, other partnering organizations, physicians, and pharmacy partners. Over 200 contacts received the survey. This online survey collected address information that was used to map partners, and capacity and services information to provide an understanding of available resources and remaining gaps. A total of 173 organizations completed the

survey between August 21 and September 30, 2014. It is important to note that these 173 organizations covered the original PPS service area of eleven counties. Survey data is reported in this report in the aggregate, and some of the respondent organizations may lie outside of the six counties included in the final CNYCC Region service area.

Key Informant Interviews

In addition to the PPS Partner Survey, key informants in the participating counties were identified for in-depth interviews. A total of 78 interviews were completed in the region. These interviews provided context for the data by focusing on perceived priority issues and root causes of hospital readmissions. The PPS generated the list of original contacts to be interviewed. These names were selected by the PPS because the organization was identified as a key partner for the DSRIP project (i.e., a key county provider identified in Table 15 of this report) and their insight was seen as key to developing the picture of needs and resources in the service area. Interviewees selected by the PPS were interviewed by JSI. During this interview, the interviewees were given the opportunity to identify other key names for additional information. The goal in contacting this second round of names was to achieve and ensure saturation in key themes.

A total of 102 interviews were conducted across the entire region; of these, 78 were conducted in the six counties of the CNYCC Region. These interviewees were diverse on a number of indicators. Interviews were conducted in eleven counties in Central New York, including Cayuga (9), Cortland (9), Herkimer (7), Lewis (7), Madison (11), Oneida (19), Onondaga (20), Oswego (12), and St. Lawrence (7). Additionally, the interviewees were diverse in the type of organization they represented, including county agencies (health, aging, and mental health departments), federally-qualified health centers, Health Home agencies, case management organizations, hospital administrators/clinicians, hospice providers, behavioral health providers, community service organizations, ARC agencies, housing authorities, community action partnerships, community coalitions, rural health councils, the Salvation Army, Catholic charities, and many other types of health and community organizations. A list of interviewees, including name, organization, organization type, and county of location, can be found in Appendix I. The diversity in geography and organization type resulted in a saturation of themes surrounding resources and gaps in the service area.

Consumer Engagement Activities

Input from consumers is a critical part of the CNYCC PPS. In-person consumer engagement activities were conducted in each of the CNYCC counties. These activities ranged from structured focus groups to guided listening sessions to individual interviews. Both JSI and Eric Mower and Associates (EMA) conducted consumer engagement activities. Discussions with consumers were guided by an interview protocol. The protocol encouraged discussion on access barriers including provider communication, care coordination, and experience locating services.

Participants were recruited by partnership agencies in each County. Agencies included community organizations and mental health providers, among others. Participating agencies included: Central New

York Adult Homes Inc., Cayuga County Mental Health Center, Liberty Resources, CazCares, Catholic Charities, Hutchings Member Support Center, Sunrise Recovery Center, Faxton-St. Luke's Hospital and their Partner Advisory Committee members, Oswego Health, Lewis County Health department, North Regional Center for Independent Living, and the Human Services Center. These agencies were geographically spread to increase access to participants and ensure diverse perspectives. Agencies recruited participants either by asking patients who were attending the site for a visit to participate in a group or individual interview, or by active outreach to agency participants. In all over 101 individuals from the six PPS service area counties provided input on their experiences with the health care system. Participants in these activities were predominantly Medicaid recipients with a significant number also being covered by Medicare. The latter group of dually eligible was a combination of seniors and persons with developmental disabilities.

Western and Central New York Low Income Consumer Survey (2013)

In 2013, JSI developed and implemented a Central New York Consumer Access Survey (CNYCSS). The 2013 Central New York Consumer Access Survey (CNYCS) was developed to understand consumer experience related to using primary care services in the region. The primary objective is to understand gaps in services encountered by adults accessing care for themselves and/or children. The survey questions, which were designed to mirror and complement the qualitative interviews with providers and other key informants, assesses consumers' experience scheduling appointments, reaching providers by phone, and ability to communicate with providers to access care and a medical home. The survey covered general health access barriers such as insurance status and communication as well as specific barriers to different types of medical services. The survey was designed based on the 2007 Western New York Consumer Access Survey (WNYCAS), which was developed primarily by drawing questions from existing state and national health surveys. Where questions were not available to address specific issues of interest to HFWCNY, JSI adapted similar questions from previous JSI surveys.

The goal of survey distribution was to capture families in two distinct groups: 1) those waiting for services and affiliated with one of the community health centers or other pediatric providers that serve low-income families; and 2) families in the community whose status related to the safety-net utilization were unknown. The survey was distributed face-to-face to parents at community agencies, events, and provider offices with the cooperation of numerous organizations and individuals across the central New York region. A total of 571 surveys were collected from September through October 2013.

The findings of this survey were used to inform the data collection for the DSRIP application. The results of the survey were discussed thoroughly in the 2013, and the executive summary of the findings of this report are included as Appendix D. The detailed review of the results of the CNY Consumer Access Survey is included in Appendix E.

Central New York Safety Net Assessment (2013)

In 2013, JSI with the support of the Health Foundation of Western and Central New York conducted a primary care and safety net assessment in Central New York that focused on eight counties in Central

New York including all of the counties that are part of the CNYCC's service area. This assessment involved the following eight counties: Cayuga, Cortland, Herkimer, Madison, Oneida, Onondaga, and Oswego. JSI used both quantitative and qualitative methods to identify key gaps in the safety net in this region at the zip code level. The analysis included characterizing safety net providers, the Medicaid population, health status and indicators of inappropriate care, rates of admission and rates of discharge across the eight included counties. The key findings of this report also served as the foundation for this needs assessment for the DSRIP application. The executive summary of the findings of this past needs assessment are included in Appendix F.

Quantitative and qualitative data was first reviewed on the county-level, and county profile reports of the data were created. These profiles should be reviewed for a more in-depth understanding of county-specific issues. This report summarizes issues across the participating counties.

New York State Prevention Agenda Needs Assessments

The qualitative assessment that was conducted as part of the CNYCC CNA also involved a review of prior needs assessments conducted by local health departments and hospitals in conjunction with the New York State Prevention Agenda. The purpose of this step was to explore whether the findings of the CHA aligned with past assessments.

III. NEEDS ASSESSMENT FINDINGS

A. Description of Community to Be Served

A robust assessment must include a thorough discussion of the community to be served so that projects can be selected and implementation plans can be developed that are tailored to the specific geographic, demographic, socio-economic, and health status characteristics of the population. While it is critical to understand the overall characteristics of the community and service area at large, it is important to note that with respect to DSRIP the emphasis is on the low income Medicaid insured and uninsured segments of the population.

This section of the assessment will include a succinct narrative, along with graphical, mapping and tabular data figures, that describe the demographics of the proposed population to be served, as well as the leading health status and service utilization factors. This information will facilitate the selection of the most appropriate, value-added projects and the design of tailored strategies that will allow the CNYCC to achieve the DSRIP goals. In this regard, it should be noted that while there is a clear understanding of the importance of raising overall health status as way of facilitating sustainable transformation, the primary measure of success for DSRIP is the reduction of inappropriate hospital inpatient and emergency department utilization.

The Demographics section below will include a discussion of the data related to gender, race, ethnicity, age, income, disability status, mobility, educational attainment, housing status, employment status, Medicaid/insurance status, access to a regular source of care, language and health literacy, legal/illegal immigrant/migrant status, and urban/rural status. Most of the data sources focus on the general, non-institutionalized population, but care will be taken to ensure that the CNYCC has an understanding of special populations such as the homeless, children with special health care needs, disabled adults, and other institutionalized populations, including those involved in the criminal justice system.

The health status and service utilization section below will build on the review of the demographic factors above and characterize the health status and utilization factors for the region overall, including a discussion of geographic and demographic disparities in outcomes. This section of the assessment will include a review of:

- Leading causes of death and premature death
- Leading causes of illness and hospitalization
- Rates of ambulatory care sensitive conditions and the leading causes of preventable hospitalizations
- Disease prevalence for the leading medical and behavioral health conditions
- Maternal and child health outcomes,
- HIV and other sexually transmitted infection indicators, and
- Behavioral risk factors such as obesity, smoking, drinking, drug overdose, and physical inactivity

Demographic Characteristics

The Central New York Region is an area of contrasts ranging from large sparsely populated rural tracts to more densely populated semi-urban areas. In all there are only three larger cities, the dominant being Syracuse. In relating population demographics to health disparities and health care access barriers, the focus is often on urban-based minority populations, those who lead complex lives with limited resources. However in many areas like the Central New York region low income is not solely an urban issue and limited access to health care permeates if for different reasons. Most of the health care and community-based resources in the region are located in the more urbanized areas, as are the minority and foreign-born populations. Limited access and health disparities in these communities often stem from lack of insurance, non-acceptance of Medicaid by providers, cultural and language difficulties. In the rural areas poverty certainly factors into negative health outcomes, but this is further complicated by an absolute lack of health care options and community resource support agencies. Transportation is a significant problem. In some areas it is the distance alone that impedes access to care – extensive drives through backcountry roads, particularly in the winter months, are deterrents to accessing regular preventive and primary care. People often wait until there is no choice but to go to the hospital with conditions that potentially could have been rectified at an earlier stage. Even in the semi-urbanized areas transportation is an issue as there is very limited public transportation outside of Syracuse, Utica and Ithaca. The several miles to the nearest urban center becomes a major barrier to accessing care when you do not have a car and the only transportation option is a group of volunteer drivers who are overbooked every day.

The total combined population is 1,002,605 with counties ranging from around 27,000 in Lewis County to Onondaga County with over 466,000. Geographically large rural areas with few urban population centers of any significant size characterize the region. While there is variation in the density of population across the counties (21/sq. mi to 599/sq. mi), most of the counties fall well below the rate for upstate New York (239 people/sq. mi). Onondaga County is the densest at 599; however most of the impact is from Syracuse, which accounts for nearly a third of the county's population. Within counties there is also variation in the distribution of residents. Looking at some of the predominantly rural counties it is noticeable that the populations tend to concentrate in certain areas. The distribution of resources reflects this pattern with the vast majority of health care providers and community resources being located in the areas with greater population density. In the larger more rural counties transportation to the nearest health care resource is often arduous following back roads and circuitous routes. Other than in the urban areas there is little if any public transportation, compounding the difficulty in accessing services. Syracuse (144,669) and Utica (61,808) are the main population hubs in the region.

Age, Race, Ethnicity

Most of the counties have experienced an aging of the population over the past decade. In many of the counties, younger people left as industries closed, leaving the older and poorer residents behind. Oneida County has the highest proportion of residents age 65+ (17.1%); Cayuga and Lewis Counties also exceed the average for the CNYCC Region (14.6%). Three of the counties (Onondaga, Lewis, Oswego) have a larger proportion under age 18 compared to the CNYCC Region (22.5%).

Table 1: Population Demographics by County and Region

County	Population	% <18	% 65+	% White	% Black	% Asian	% Hispanic /Latino	% Foreign Born	% LEP
Cayuga	79,996	21.6	15.5	92.6	4.3	0.6	2.4	2.4	0.6
Lewis	27,062	24.4	15.3	97.7	0.9	0.2	1.3	1.5	0.5
Madison	72,977	21.7	14.2	95.0	1.9	0.7	1.8	2.0	0.3
Oneida	234,336	21.8	16.3	87.0	5.6	3.0	4.6	7.2	2.7
Onondaga	466,179	22.9	14.1	81.6	10.8	3.2	4.0	7.2	1.8
Oswego	122,055	23.0	12.7	96.2	0.9	0.6	2.1	2.0	0.3
City of Syracuse	144,669	23.0	10.6	56.0	29.5	5.5	8.3	11.1	n/a
City of Utica	61,808	24.7	14.8	69.0	15.3	7.4	10.5	17.6	n/a
CNYCC Region	1,002,605	22.5	14.6	86.9	7.0	2.4	3.6	5.6	1.6
Upstate NY	11,198,904	n/a	n/a	81.8	8.7	3.5	9.7	11.1	n/a
NY State	19,398,125	21.6	14.4	66.0	15.7	7.5	17.7	22.0	n/a
Data Source: US Bureau of Census, American Community Survey, 5-year averages, 2008-2012 n/a = data point not available									

A leading factor associated with limited access to care and disparities in health outcomes is whether one is foreign born, a recent immigrant, or part of a racial/ethnic minority group. Overall the population of the region is predominantly White (86.9%); in four of the six counties Whites comprise more than 90% of the population. But this has been changing. Between 2000 and 2010, there were major increases in the racial/ethnic minority populations in Syracuse and Utica. In 2000, 64% of the population in Syracuse and 79% of the   population in Utica categorized themselves as of White race alone. By 2010, the percent of the population that was White alone had declined to 56% in Syracuse and 69% in Utica. The fastest growing population during this time was the Hispanic/Latino segment of the population. In 2000, 5% of the population of Syracuse and 6% of the population in Utica were of Hispanic/Latino origin. By 2010, the percent of the population that was of Hispanic/Latino dissent had increased to 8.3% in Syracuse and 10.5% in Utica. In some communities in the central New York region, the percentages of the population that are in racial/ethnic minority groups are as high as 70-80%.

African American/Black is the leading racial/ethnic minority group, followed by people of Hispanic/Latino descent.

There are also large and growing immigrant and refugee populations in Syracuse and Utica (see Figure 2). Immigrants and refugees struggle with access, health literacy, and various health conditions. Overall in the region 5.6% of residents are foreign-born, with the highest percent in Onondaga and Oneida Counties with 7.2% each. Within these counties it is the two cities that impact the overall county

experience: 11.1% of Syracuse's population and 17.6% of Utica's are foreign-born. The largest immigrant/refugee populations are from Bosnia, Somalia, Thailand, Burma, Central America, and Iraq. Amazingly, according to figures from UNHCR (The UN Refugee Agency), Bosnian immigrants now constitute about 10% of the total population of Utica, which has one of the largest resettlement agencies in the country located in the county.

Figure 2. Percent of Residents Who Are Foreign Born Map
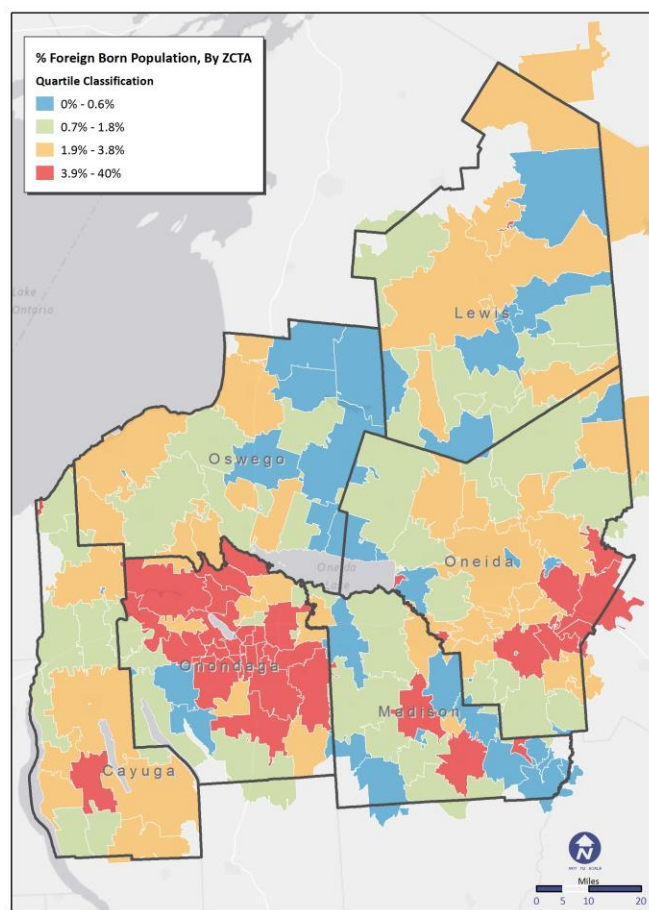
> *"The Mohawk Valley Resource Center for Refugees has been responsible for the resettlement of over 13,000 refugees in New York State since 1979. Over 4,000 of these refugees have resettled in Oneida County. Initially, the majority of these refugees came from Bosnia, the former Soviet Union and Vietnam. The most recent influx of refugees is from southern Somalia, Burma and Bhutan. In addition, Oneida County has a significant and growing Latino population. The 2005-2007 American Community Survey 3-year estimate for the County is that 3.5% of the population speaks Spanish. It is also estimated that 549 Native Americans reside in Oneida County. Oneida County's rural communities are also seeing an increase of Amish and Mennonite families."[2]*

These individuals are likely to have language, cultural and other significant barriers to navigating the health care delivery system and receiving appropriate care. This was indicated in the "Oneida County 2010-2013 Community Health Assessment":

> *"Culturally and linguistically diverse residents were identified as a vulnerable population facing personal barriers to health care in Oneida County."[2]*

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[2] http://www.ocgov.net/health/CommunityHealthAssess2010-2013

Access for the refugee community is provided primarily through the resettlement clinics such as the Faxton-St. Luke's clinic. A general lack of access was identified which results in people going to the ED or urgent care centers. In these settings language barriers are problematic. In the resettlement and hospital clinics language issues are handled through volunteers and language-access services. Another barrier is cultural and religious norms. Lack of understanding of the hierarchy systems within cultures, for example needing to "get permission" from the ranking male for a female to be treated; not understanding when and how to access the health care system; not feeling comfortable with the doctors; were mentioned as barriers to care.

Income, Employment, and Education

Living in poverty or in a   low-income household is one of the leading factors associated with vulnerability, as those   who are in these income brackets face economic barriers to care and tend to have stress in   their individual or family lives that limit access to care. In the six-county CNY region, the low-income population (i.e. those living below 200% of the federal poverty level) comprised 31.6% of the total population using a 5-year estimate from 2008-2012.

As is true throughout the nation, low educational attainment, poverty and low-income population rates tend to be highest in urban and rural areas and lowest in suburban areas. The highest numbers and   highest density of those living in poverty or in low-income households are located in the inner-city areas of Syracuse and Utica. In many of these inner city neighborhoods, more   than 70% of the population lives in low-income households. However, a high percentage of the region's rural population also lives in poverty. Throughout the region, the county averages for people living below 200% FPL range from 28.9% in Madison to 36.3% in Oswego. It is notable that the more urban counties experience the highest rates of low-income residents. Looking at rates of poverty again Syracuse and Utica stand out at 33.6% and 30.1% respectively, compared to the region rate of 14.8%. See Figure 3 for a map of the percent of residents living under 138% of the Federal Poverty Level (FPL).

Figure 3. Percent of Residents Living Under 138% FPL Map

Unemployment is highest in the two larger cities of Syracuse and Utica, although it is also notable that Oswego and Lewis, rural counties, have high rates as well. Five of the six counties exceed the Upstate rate for population with less than a high school education. Syracuse and Utica both exceed the NY State rate. As manufacturing has left the area over the past decade the service industry has become the dominant employment sector. This transformation

means an increase in part time and low wage work coupled with a decrease in employer-based insurance.

These socio-economic indicators factor importantly in overcoming barriers to accessing health care. Unemployment relates to multiple factors that impact health status and access to health care including disposable income available for health care, access to employer-based health insurance, and car ownership among others. Numerous key informants cited lack of transportation as a significant factor in accessing health care. Limited health literacy, both not being aware of what services are available as well as not understanding how to utilize them were also identified as contributors to unnecessary ED visits and higher in-patient rates. These problems are exacerbated for immigrant and LEP populations as they face the added burden of language and cultural barriers.

Table 2: Income, Unemployment and Education Status by County and the CNYCC Service Area

	Median Household Income	**% <100% of FPL**	**% <138% of FPL**	**% <200% of FPL**	**% Unemployed**	**% < Than high school diploma**
Cayuga	$50,950	12.2	18.5	30.9	8.2	14.4
Lewis	$45,187	13.5	20.0	34.7	9.6	13.2
Madison	$52,187	10.8	17.3	28.9	6.0	9.8
Oneida	$49,148	15.6	22.5	34.0	7.7	13.6
Onondaga	$53,593	14.3	20.4	29.6	7.2	10.6
Oswego	$47,288	16.4	23.8	36.3	10.0	13.3
Syracuse	$31,459	33.6	n/a	n/a	11.4	19.6
Utica	$31,408	30.1	n/a	n/a	12.7	21.0
CNYCC Region	$51,254	14.4	20.9	31.6	7.6	11.9
Upstate NY	$54,125	11.2	16.6	25.7	7.7	11.1
NY State	$57,638	14.9	21.5	31.6	8.7	15.1
Data Source: US Bureau of Census, American Community Survey, 5-year averages, 2008-2012 n/a = data point not available						

Insurance Status, Medicaid and Dual Eligibility

Overall the CNY region has a lower percent of people who are uninsured compared to both Upstate NY and NY State. This is a result of the aggressive approach to expending Medicaid that New York has taken as well as a reflection of the pervasive poverty in the region. Within the region there is significant variation ranging from a high of 10.8% in Cayuga and Lewis Counties to a low of 7.7% in Oneida County. Two of the six counties have rates that exceed the Upstate rate. Meanwhile, the percent of people who are Medicaid recipients is higher for the CNY region compared to Upstate NY in five counties. The load that this puts on the health care system is reflected in the health utilization data below. Many of the

key informants commented that the Medicaid population experiences greater difficulties in accessing care because of the lack of health care resources available to them. The community health centers throughout the region are functioning at capacity, as are the other safety net providers.

Table 3: Insurance and Medicaid Status by County and the CNYCC Service Area

County	% Uninsured	% Medicaid	#Medicaid	#Children	#Adult	#Dual Eligible	Dual Eligibles as % of Medicaid recipients
Cayuga	10.8	18.0	17,109	6,060	11,049	3,005	17.6%
Lewis	10.8	17.3	5,574	1,967	3,607	1,091	19.6%
Madison	8.5	14.3	15,291	5,296	9,995	2,713	17.7%
Oneida	7.7	21.9	66,647	23,534	43,113	11,986	18.0%
Onondaga	8.7	17.0	106,388	39,078	67,310	16,271	15.3%
Oswego	8.3	22.5	32,625	11,753	20,872	4,520	13.9%
CNYCC Region	8.7	18.6	243,634	87,688	155,946	35,586	14.6%
Upstate NY	9.1	14.9	n/a	n/a	n/a	n/a	n/a
NY State	11.3	20.9	5,835,794	1,979,039	3,856,755	853,866	14.6%
Data Sources: New York Department of Health, Medicaid Enrollees and Expenditures by County 2012 % Uninsured - US Bureau of Census, American Community Survey, 5-year averages, 2008-2012 n/a = data point not available							

Children represent approximately one-third of the Medicaid recipients throughout the region with little variation across the counties. This is consistent with the statewide experience. However, the percent of Medicaid recipients who are dually eligible exceeds the state percent in all of the counties in CNY, with the highest percent in Lewis (19.6%).

The dually eligible population is split between seniors on Medicare who have long term care support through Medicaid and persons with developmental and other disabilities. As discussed below the latter group experiences significant difficulties in accessing care due to inadequate capacity and the lack of community-based transportation services. In 2013, 2.9% (29,116 residents) of the region's population received Supplemental Security Income due to being blind or disabled, which mirrored the state percentage. Onondaga had the largest number of residents who were blind or disabled (13,710) but Oneida County had the highest proportion (3.5%) as a percentage of total population.[3]

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[3] http://www.ssa.gov/policy/docs/statcomps/ssi_sc/

Other at Risk Populations

Persons Experiencing Homelessness

Key informants report that homelessness is a serious issue in many of the counties. Aside from the urban areas there are few housing options available for very low-income people. Many of the counties lack any transitional housing or homeless shelters. Persons who are homeless utilize the EDs for shelter, food, showers and clean clothes – particularly as the temperatures drop. In the broad rural tracts of the region's counties people have very little opportunity to find affordable housing. In the more urbanized areas persons experiencing homelessness are often those discharged from in-patient hospital and behavioral health care facilities. The increasing epidemic of heroin and opiates addiction is exacerbating the problem.

Persons without Personal Transportation

In listening sessions and focus groups with consumers, transportation was noted as a significant barrier to care. The only sources of public transportation are found in the larger more urbanized areas, those same places where the majority of resources are located. Many of the counties in the region have large rural areas with no transportation resources. Even those with cars often have to travel hours to get to health care, and even longer for behavioral and oral health care services. People often hold off on going for care until conditions worsen and end up in EDs or in-patient care with complex problems. People on Medicaid without cars experience difficulty in accessing care because of the paucity of options available to them. While most of the urbanized areas have some type of Medicaid transportation service (vans, private taxis) the wait is often extensive and the length of time frame pick-up to drop-off can be hours. Some of the programs require 3-day prior notification of appointments and there are limits on how far they will transport people.

Health Status and Service Utilization

At the core of the DSRIP CNA process is an understanding of the leading causes of death and illness, the leading causes of inappropriate utilization, and the extent that the population participates in the risky behaviors that are often the root cause of illness and death. This information is critical to assessing health status and risk factors, clarifying health-related disparities, and understanding the nature of inappropriate utilization. The assessment captured a wide range of quantitative data primarily from State sources but also from certain Federal and local sources as well.

Leading causes of death and premature death

Cardiovascular disease (heart disease), cancer, respiratory disease, and cerebrovascular disease (stroke) are the four leading causes of death in the United States, New York, and Central New York, regardless of age and race/ethnicity. Combined these diseases account for the vast majority of all deaths across all geographies. Unintentional injuries, pneumonia, and diabetes are also ranked highly in all geographies. If one takes race/ethnicity into consideration, the distribution of premature deaths is slightly different. Heart disease and cancer are still the leading causes of death for Black, non-Hispanic populations and Hispanics. However, in the Black, non-Hispanic population, deaths from diabetes are the third largest

killer followed by deaths due to stroke and pneumonia. Among Hispanics, unintentional injuries are the third leading cause of death followed by pneumonia and diabetes. For Black, non-Hispanic and Hispanic populations respiratory disease is not in the top five leading causes of death. In short, Black, non-Hispanic and Hispanic populations are more likely to die of diabetes and pneumonia than White, non-Hispanic populations.

With respect to DSRIP, the more relevant variable is premature death[4], given that the initiative is targeting Medicaid insured and uninsured populations that generally do not include most older adults. Assessing premature death, rather than overall mortality, supports the underlying intention of DSRIP, re-focusing attention on the morbidity and mortality that can be prevented. This should ultimately contribute to reducing inappropriate hospital utilization.

The leading causes of premature death are similar to those of mortality overall but there are important differences. The first and second leading causes of premature death in New York State, Upstate New York, and Central New York are cancer and heart disease. Unintentional injuries, respiratory disease, and diabetes are ranked 3rd, 4th, and 5th respectively and each have a considerable impact on the premature death rate overall. On a county basis, there is some variation across the region. Cancer is the leading cause of premature death followed by heart disease in all counties. With respect to the 3rd, 4th, and 5th leading causes of death across the counties there is even more variation but unintentional injuries, respiratory disease, diabetes, and suicide are the leading causes. It should also be noted that except in a few isolated cases the rates of all these conditions across all of the counties that are part of the CNYCC service area are higher than the upstate New York rate overall. This means that children and young adults are more likely to die prematurely in the Central New York region than children and young adults in the Upstate New York region overall.

Table 4. Leading Causes of Premature Death, by County

	Cause 1	**Cause 2**	**Cause 3**	**Cause 4**	**Cause 5**
Cayuga	Cancer	Heart Disease	Unintentional Injury	Chronic Lower Respiratory Disease	Diabetes
Lewis	Cancer	Heart Disease	Unintentional Injury	Suicide	Chronic Lower Respiratory Disease
Madison	Cancer	Heart Disease	Unintentional Injury	Chronic Lower Respiratory Disease	Suicide
Oneida	Cancer	Heart Disease	Chronic Lower Respiratory Disease	Unintentional Injury	Stroke
Onondaga	Cancer	Heart Disease	Unintentional Injury	Chronic Lower Respiratory Disease	Stroke
Oswego	Cancer	Heart Disease	Unintentional Injury	Chronic Lower Respiratory Disease	Suicide
CNYCC Service Area	Cancer	Heart Disease	Unintentional Injury	Chronic Lower Respiratory Disease	Stroke

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[4] Premature deaths are deaths are deaths that occur before a person reaches an expected age, for instance, age 75, many of these deaths are considered to be preventable

Upstate NY	Heart Disease	Unintentional Injury	Chronic Lower Respiratory Disease	Diabetes	Cancer
Data Source: NYS Department of Health, Leading Causes of Premature Death (Death before age 75), 2010-2012					

Table 4 above provides the county-specific data for the counties that are part of the CNYCC service area, along with CNYCC regional and Upstate comparison data.

This data highlights the dramatic impact that chronic disease (e.g., heart disease, respiratory disease, and diabetes) have on the population. Perhaps even more importantly, given that these conditions are largely preventable, the data underscores the importance of education related to behavioral risk factors (e.g., tobacco use, lack of physical exercise, risky drinking/alcohol abuse, poor nutrition, and obesity/overweightness), primary care engagement, and evidence-based chronic disease management (e.g., diabetes, asthma, and depression). , which are widely considered to be preventable or manageable conditions by focusing on reducing behavioral risk factors (tobacco use, lack of physical exercise, risky drinking/alcohol abuse, poor nutrition, and obesity/overweightness) and appropriate chronic disease care management. It also highlights the tremendous impact of cancer and other complex chronic conditions, in light of the high rates of where premature death and the associated rates of inappropriate utilization that can be lessened with early detection, evidence-based treatment and palliative care.

Leading causes of illness

To determine the leading causes of illness, the CNA reviewed data on disease prevalence, primarily drawn from the Center for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) and New York State's Expanded BRFSS, as well as well as hospital utilization data provide through New York State's Statewide Planning and Research Cooperative System (SPARCS) dataset. Once again, this data highlighted the tremendous impact of chronic medical conditions but also drew into clear relief the overwhelming impact that behavioral health (mental health and substance abuse) conditions have on the population, particularly the Medicaid population.

Table 5. Disease Prevalence (Expanded BRFSS, 2009)

County	% of Adults with Diabetes	% of Adults with Asthma	% of Adults with Heart Disease	% of Adults with High Blood Pressure	% of Adults with Heavy Drinking in Past Month	% of Adults Poor Mental Health in Past Month
Cayuga	9.5	12.7	7.6	28.0	7.6	14.8
Lewis	10.4	8.9	8.8	27.9	5.3	8.9
Madison	7.4	13.8	9.1	26.9	6.7	8.8
Oneida	8.8	11.0	5.7	27.6	11.3	13.0
Onondaga	7.6	11.8	7.0	26.1	7.5	12.0
Oswego	9.9	12.1	8.3	28.4	7.6	12.7
NY State	9.0	9.7	7.6	25.7	5.0	10.2
Notes and data sources: Diabetes: 2009, BRFSS County-Specific Prevention Agenda Reports Asthma: 2009, age-adjusted rate, Expanded BRFSS July 2008 - June 2009 Hypertension: 2009, age-adjusted rate, Expanded BRFSS July 2008 - June 2009 Heart Disease: 2009, age-adjusted rate, Expanded BRFSS July 2008 - June 2009 Adults with Heavy Drinking in Past Month: 2009, age-adjusted rate, County-Specific Report - Expanded BRFSS July 2008 - June 2009						

A review of data drawn from New York State's Expanded BRFSS, shows that the rates of the leading chronic medical conditions are all generally higher throughout the region. This is particularly true in Oswego, which had higher rates for these medical conditions than the State across all four leading measures. Cayuga, Lewis, and Madison Counties had higher rates for three of the four leading chronic medical conditions than the State. The State's Expanded BRFSS data also shows the impact that behavioral health conditions such as poor mental health and alcohol abuse have on the population. The county rates for these conditions are also considerably higher than the State and Upstate averages. In these cases, the rates are particularly high in Cayuga, Oneida, Onondaga, and Oswego.

With respect to hospital utilization, the assessment analyzed data drawn from the New York State DOH's Medicaid Beneficiary Chronic Health Conditions, Inpatient and Emergency Room Utilization data set, which reviews hospital inpatient and emergency department utilization specifically for the low income, Medicaid insured population. This dataset was provided by DOH to guide DSRIP planning and analyzes the chronic and episodic conditions that are thought to be most significant drivers of hospital use. This methodology categorizes patients into specific critical risk groups (CRGs) and is thought to reduce bias related to how providers code patient conditions by diagnosis. A review of hospitalization data from this dataset strongly corroborates findings from the analysis of Expanded BRFSS data, reinforcing the dramatic impact of chronic medical and behavioral health conditions.

According to the Medicaid Beneficiary Chronic Health Conditions, Inpatient and Emergency Room Utilization data set, in the CNYCC service area overall the two underlying conditions that were at the root of most inpatient hospital admissions for those insured by Medicaid were hypertension and depression. In 2012, 30,413 Medicaid beneficiaries in CNYCC's service area were categorized in the depression CRG and 30,885 beneficiaries were categorized in the hypertension CRG. Of those categorized with depression, 9,367 had been admitted to the hospital at least once and these beneficiaries accounted for a total of 18,650 admissions. Of those categorized in the hypertension CRG, 8,883 had been admitted to the hospital at least once and accounted for 15,827 admissions. The remaining leading causes of admission were a mix of chronic medical and behavioral conditions. The following is a list of the top 20 CRG conditions that accounted for the most hospital inpatient admissions for the Medicaid beneficiaries in CNYCC's service area, ranked in order of total admissions.

A review of the data on leading CRG conditions by hospital admissions brings into clear relief the dramatic impact of chronic medical and behavioral health conditions. Particularly striking is the impact that behavioral health (mental health and substance abuse) has on the Medicaid insured population. While chronic medical conditions certainly take their toll (e.g., hypertension, diabetes, asthma, COPD, etc.) a majority of Medicaid beneficiaries with a hospital admission are categorized in behavioral health related CRGs (e.g., depression, drug abuse, chronic stress/anxiety, chronic alcohol abuse, schizophrenia, and other chronic mental health diagnoses, etc.). Specifically, a review of 2012 data for the Medicaid beneficiaries in the CNYCC service area that were categorized in the top 20 chronic conditions, shows that behavioral health issues are more widely diagnosed than chronic medical conditions. In 2012,

behavioral health conditions accounted for 88,967 of all diagnoses. Of these beneficiaries that were diagnosed with behavioral health conditions, 20,459 had at least one inpatient admission and in total these beneficiaries accounted for 63,834 admissions. There were nearly identical numbers for those with chronic medical conditions. In 2012, chronic medical conditions accounted for 83,329 of all diagnoses in various chronic medical health related CRGs. Of these beneficiaries, 30,799 had at least one inpatient admission and in total these beneficiaries accounted for 57,458 admissions. Similar data for each county in the CNYCC can be viewed in Appendix A, Selected Combined Data Tables.

Table 6: Leading Causes of Hospital Admissions for Medicaid Beneficiaries in 2012
(across all counties in the CNYCC service area)

Rank	Condition	Beneficiaries in Service Area with Condition	Unique Beneficiaries in Area Admitted with Condition	Total Admissions in Area with Condition
1	Depression	30,413	9,367	18,650
2	Hypertension	30,885	8,883	15,827
3	Drug Abuse	11,943	6,476	14,999
4	Diabetes	**15,732**	**5,399**	10,045
5	Asthma	**14,517**	**3,627**	6,860
6	Chronic Stress and Anxiety Diagnoses	**12,282**	**2,957**	5,979
7	Schizophrenia	**9,435**	**2,616**	5,450
8	Chronic Alcohol Abuse	**4,683**	**2,479**	5,447
9	COPD and Major Other Chronic Pulmonary Diagnoses	**5,629**	**2,851**	5,296
10	Chronic Mental Health Diagnoses	**5,509**	**2,020**	5,070
11	Cardiomyopathy, Congestive Heart Failure, Other Cardiovascular Diagnoses	**3,722**	**2,390**	4,713
12	Atrial Fibrillation, Cardiac Dysrhythmia, and Conduction Disorders	3,528	2,171	4,492
13	Bi-Polar Disorder	4,056	1,619	3,770
14	Chronic Bronchitis and other Chronic Pulmonary Diagnoses	3,443	1,741	3,659
15	Coronary Atherosclerosis	3,379	2,171	3,437
16	Post Traumatic Stress Disorder	2,102	722	1,753
17	Angina and Ischemic Heart Disease	1,555	828	1,680
18	History of Myocardial Infarction	939	738	1,449
19	Conduct, Impulse Control, and Other Disruptive Behavior Disorders	2,307	554	1,392
20	Attention Deficit / Hyperactivity Disorder	6,237	649	1,324

Data Source: https://health.data.ny.gov/api/views/m2wt-pje4/files/W8jjVDb7hRW8ThuXcnMEd0tn0NCVQPhlFziBWsqhew8?download=true&filename=NYSDOH_MedicaidPopulation_overview.pdf

A review of hospital emergency department data led to similar conclusions. Once again, in the CNYCC service area overall, depression and hypertension were the underlying conditions that were at the root of most emergency department visits for those insured by Medicaid. In 2012, 14,867 unique Medicaid beneficiaries in the CNYCC service area were seen in a hospital emergency department with conditions that were categorized in the depression CRG. These beneficiaries accounted for a total of 51,432 emergency department visits. Once again, hypertension was the second leading factor. In this case 11,974 Medicaid beneficiaries were categorized in the hypertension CRG and these beneficiaries accounted for a total of 36,279 emergency department visits. Once again, the remaining leading causes of emergency department utilization were a mix of chronic medical and behavioral conditions but there were substantially more beneficiaries in behavioral health-related CRGs than in chronic medical CRGs.

Table 7: Leading Causes of Emergency Room Visits for Medicaid Beneficiaries in 2012
(across all counties in the CNYCC service area)

Rank	Condition	Beneficiaries in Service Area with Condition	Unique Beneficiaries in Area with ER Visit with Condition	Total ER Visits in Area with Condition
1	Depression	30,413	14,867	51,432
2	Hypertension	30,885	11,974	36,279
3	Drug Abuse	11,943	7,461	33,557
4	Asthma	14,517	7,350	23,522
5	Chronic Stress and Anxiety Diagnoses	12,282	5,745	21,365
6	Diabetes	15,732	6,301	20,240
7	Schizophrenia	9,435	4,676	16,676
8	Chronic Mental Health Diagnoses	5,509	2,762	12,481
9	Chronic Alcohol Abuse	4,683	2,766	11,181
10	Bi-Polar Disorder	4,056	2,392	10,659
11	COPD and Major Other Chronic Pulmonary Diagnoses	5,629	2,398	9,012
12	Atrial Fibrillation, Cardiac Dysrhythmia, and Conduction Disorders	3,528	1,652	7,371
13	Chronic Bronchitis and other Chronic Pulmonary Diagnoses	3,443	1,788	6,960
14	Attention Deficit / Hyperactivity Disorder	6,237	2,261	5,522
15	Post Traumatic Stress Disorder	2,102	1,269	5,459
16	Cardiomyopathy, Congestive Heart Failure and Other Cardiovascular Major Diagnoses	3,722	1,522	5,408
17	Coronary Atherosclerosis	3,746	1,451	5,043
18	Conduct, Impulse Control, and Other Disruptive Behavior Disorders	2,307	1,137	3,681
19	Angina and Ischemic Heart Disease	1,555	735	2,856
20	History of Myocardial Infarction	939	478	2,361
Data Source: https://health.data.ny.gov/api/views/m2wt-pje4/files/W8jjVDb7hRW8ThuXcnMEd0tn0NCVQPhIFziBWsqhew8?download=true&filename=NYSDOH_MedicaidPopulation_overview.pdf				

Once again, the remaining leading causes of emergency department utilization were a mix of chronic medical and behavioral conditions but there were substantially more beneficiaries in behavioral health-related CRGs than in chronic medical CRGs.

If one looks at the Medicaid beneficiaries in the CNYCC service area that were categorized in the top 20 chronic conditions, the analysis shows that there were 45,336 beneficiaries categorized in a behavioral health-related CRG that had at least one emergency department visit and in total these beneficiaries accounted for 172,013 visits. There were substantially fewer numbers of beneficiaries seen in hospital emergency departments with chronic medical conditions. Specifically, there were 35,649 beneficiaries categorized in chronic medical condition CRGs that had at least one emergency department visit and these beneficiaries accounted for a total of 119,052 visits.

Chronic Health Conditions

As mentioned above, cardiovascular disease (heart disease), cancer, respiratory disease, and stroke are the four leading causes of death in the United States, New York State, and Central New York region. In addition, diabetes is ranked in the top 10 across all three of these geographic areas. Mental health issues, discussed in more detail below, are chronic conditions for many and are often coupled with other medical conditions. All of these conditions, individually and collectively, have a major impact on people living in the region. Arguably they represent the most critical health issues for the region. All of these chronic conditions share the health risk factors cited above (tobacco use, lack of physical exercise, poor nutrition, obesity/overweightness, and risky drinking /alcohol abuse) as leading factors.

Once again, there are major health disparities across all of these conditions among racial/ethnic minority groups. Rates of illness and death vary by condition, but overall non-Hispanic, White populations are less likely to have chronic health conditions than their racial/ethnic counterparts. Those in more rural areas with more limited ambulatory care networks and more significant barriers to care are also at-risk. This puts a disproportionate burden on rural communities and communities with high proportions of racial/ethnic minority population segments, which leaves few areas in the region entirely untouched but particularly impacts the Cities of Syracuse and Utica as well as the counties of Lewis and Oneida overall. (Refer to Table 5 for prevalence of chronic conditions)

Behavioral risk factors such as obesity, smoking, drinking, and physical inactivity

There is a growing appreciation for the effects that certain health risk factors, such as obesity, lack of physical exercise, poor nutrition, tobacco use, and risky drinking/alcohol abuse have on health status and the burden of chronic disease. Over the past two decades, obesity rates in the United States have doubled for adults and tripled for children. These trends have spanned all segments of the population, regardless of age, sex, race, ethnicity, education, income, or geographic region. There are certainly segments that have struggled more than others but no segment has been unaffected. According to data from the NYS DOH's Expanded BRFSS, nearly 60% of Upstate New York's adults (18+) are either obese or overweight. While comprehensive data is not readily available, national data would suggest that specific demographic, socio-economic and geographic population segments living in the area have rates that are even higher.

Lack of physical fitness and poor nutrition are the leading factors associated with obesity and the leading risk factors associated with chronic diseases, such as heart disease, hypertension, diabetes, cancer, depression, and anxiety. Good nutrition helps prevent disease, and is essential for healthy growth and development of children and adolescents. Overall fitness and the extent to which people are physically active reduce the risk for many chronic diseases, are linked to good emotional health, and help to prevent disease. Once again, according to NYS DOH's Expanded BRFSS, only one in four adults (18+) (26%) ate the recommended five servings of fruits and vegetables per day, and roughly the same percentage (25%) reported getting no physical activity in the past 30 days.

Tobacco use is the single most preventable cause of death and disease in the United States, New York State, and the Central New York region. Each year, approximately 443,000 Americans in the United States die from tobacco-related illnesses. For every person who dies from tobacco use, 20 more people suffer with at least one serious tobacco-related illness, such as chronic airway obstruction, heart disease, stroke, or cancer.[5] According to New York's Expanded BRFSS data, approximately 20% of Upstate New York's residents are current tobacco smokers.

Risky drinking or alcohol abuse is also strongly correlated with chronic medical and mental health issues. Alcohol abuse raises the risk of developing chronic illnesses and increases the severity level once the illnesses emerge. In Upstate New York approximately 19.8% or 1 out of every 5 adults reported binge drinking on a regular basis, as defined by having more than 5 drinks for men and more than 4 drinks for women at any one occasion. This rate is slightly higher than the New York State rate overall, which was estimated at 18.1%.

When looking across all of these health risk factors (obesity, lack of physical exercise, poor nutrition, and tobacco use), the quantitative data compiled for this assessment confirms the trends seen nationally; African Americans/Blacks and Hispanics/Latinos are more at-risk and fair worse than their non-Hispanic, White counterparts. Given the demographic distribution of the population by race/ethnicity, this means that the populations living in Syracuse and Utica are particularly at-risk with respect to these health risk factors. Qualitative information from the assessment interviews and focus groups corroborated these findings and nearly all discussion participants cited obesity, poor nutrition, lack of physical exercise, and alcohol abuse as leading health issues.

A review of county specific data shows that the rates for these health risk factors are comparable across the counties that are part of the CNYCC. However, most often the individual county rates are slightly higher than the Upstate New York rates.

County data along with the Upstate New York comparison data for these measures are included below in Table 8.

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[5] http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=41#five

Table 8: Population Health Indicators and Major Health Risk Factors

Major Health Risk Factors	Cayuga	Lewis	Madison	Oneida	Onondaga	Oswego	Upstate New York
Maternal and Infant Health**							
Births with late or no prenatal care (%)	3.1	5.8	3.6	4.4	3.5	4.0	3.9
Exclusive breastfeeding (%)	60.8	64.8	69.0	48.9	55.4	54.7	48.1
Cesarean section delivery (%)	31.8	33.7	32.5	37.3	32.2	32.3	35.8
Infant mortality (per 1,000 live births)	6.2	5.9	4.3	4.8	5.5	5.9	5.6
Preterm births (%)	9.6	10	10.9	12.2	10.7	9.6	11.0
Low birth weight births (%)	7.3	5.1	6.0	8.1	8.1	7.1	7.8
Tobacco, Alcohol, and Substance Use							
Adults who are current smokers (%)*	22.9	19.3	25.4	25.1	20.0	24.7	
Adults with binge drinking within the past month (Age-adjusted, %)*	23.3	22.7	19.9	21.3	18.7	22.5	19.8
Alcohol related motor vehicle injuries and deaths (per 100,000)**	46.4	40.6	35.4	42.3	37.3	42.5	45.3
Drug-related hospitalizations (Age-adjusted, per 10,000)**	11.8	11.6	11.3	14.1	21.2	14.4	21.3
Mental Health							
Percent of adults with poor mental health for 14 or more days in past month*	14.8	8.9	8.8	13.0	12.0	12.7	10.9
Obesity and Related Indicators							
Percent of children and adolescents (students) who are overweight or obese (%)***	38.0	37.8	37.5	36.5	32.1	41.4	
Adults who are obese (%)*	27.6	27.8	26.2	25.7	21.1	32.0	24.3
Adults who are overweight or obese (%)*	63.6	66.5	59.3	56.5	55.5	67.9	NA
Adults with diabetes (%)*	9.5	10.4	7.4	8.8	7.6	9.9	8.5
Adults consuming 5 fruits or vegetables per day (Age-adjusted %)*	27.0	20.2	22.6	26.0	33.7	27.1	27.7
Adults with no leisure-time physical activity (Age-adjusted, %)*	22.9	24.1	22.9	24.6	20.3	23.0	21.1
Safety							
Age-adjusted rate of motor-vehicle mortalities per 100,000**	11.4	8.9	8.9	8.2	7.0	14.4	8.2

Data sources: *BRFSS 2009, **CHAI 2011, *** CHAI 2012

Note: Other variables are available in complete data set.

Behavioral health issues (mental illness and substance abuse)

Mental illness and substance abuse have a profound impact on the health of people living throughout the United States. Data from the Centers for Disease Control and Prevention suggests that approximately one in four (25%) adults in the United States has a mental health disorder and an estimated 22 million Americans struggle with drug or alcohol problems. Depression, anxiety, and alcohol abuse are directly associated with chronic disease, and a high proportion of those living with these issues also have a chronic medical condition. As mentioned above, 19.8% of adults in the Upstate New York region reported binge drinking on a regular basis. This rate is slightly higher than the New York State rate overall, which was estimated at 18.1%. With respect to mental illness, approximately 11% of the population reported being in poor mental health 15 or more days in the past month. On a county basis for the counties that are part of the CNYCC service area the prevalence rates for adults with mental illness and substance abuse issues are comparable to the Upstate New York rate across all counties but a number of the counties have higher rates. All informants interviewed cited an increasing epidemic of heroin and opiates addiction throughout the CNY region. This puts a huge burden on the already strained substance abuse services system and contributes to unnecessary ED visits and in-patient hospitalizations. As discussed below in the social determinants section, homelessness and lack of a continuum of supportive housing compounds the problem as many of the people who are addicted end up on the streets, in the ED for shelter and food, admitted for short-term treatment and then back on the streets. CNYCC partners cited a lack of detox facilities throughout the region. County data along with the Upstate comparison data for these measures are included in Table 8.

Maternal and child health outcomes

Maternal and child issues are of critical importance to the overall health and well-being of healthy, vibrant community. Infant mortality, childhood immunization, rates of teen pregnancy, rates of low birth weight, and rates of early, appropriate prenatal care for pregnant women are among the most critical indicators of maternal and child health.

The indicators with respect to the leading maternal and child health issues (e.g., infant mortality, prenatal care, adolescent births, and low birth weight) are generally better off throughout the CNYCC service area with the exception of Oneida and Cayuga Counties. Data also shows the disparities that exist for African Americans/Blacks and Hispanics/Latinos. The infant death rate for these populations is nearly twice the rate of non-Hispanic, Whites. According to the State perinatal Data System, in 2013, the unintended pregnancy rate was 52.2% for Blacks, and 51.5% for Hispanic groups and 46.9% in the overall Medicaid population (compared to NYS average of 35.2%). For the Medicaid population, smoking during pregnancy (27%), illicit drug use during pregnancy (10%) also exceeded NYS average. The Newborn drug-related discharge rate per 10,000 newborn discharges is higher than the NYS (excluding NYC) average in four (Cayuga, Onondaga, Oswego, Oneida) out of the six PPS region counties, according to the 2010-2012 SPARCS data. The Salient Database includes 809 emergency department visits for preterm labor from March 2013 to February 2014.

This data however does not reflect the difficulties that many of the residents face in accessing care. Prenatal care services are located mainly in the population centers. Several "outpost" clinics in the far rural areas have closed due to finances and there are few private providers in these areas. The State PCAP (Prenatal Care Assistance Program) provides support to fill the gaps in Medicaid coverage; however, some of the county prenatal clinics that were a part of the program have closed. These clinics are particularly important for teens who are pregnant.

HIV and other sexually transmitted infection indicators

Increases in life expectancy during the 20th and 21st centuries are largely due to reductions in infectious disease mortality, as a result of immunization. However, infectious diseases remain a major cause of illness, disability, and even death. Sexually transmitted diseases and pneumonia are among the infectious diseases that have the greatest impact on the population. The assessment captured data on a number of sexually transmitted diseases chlamydia, gonorrhea, syphilis, and HIV/AIDS as well as Hepatitis B and C, and pneumonia/influenza.

HIV/AIDS and other sexually transmitted diseases are a major community health issue for large numbers of residents. This is particularly true in Syracuse and Utica, which have the highest rates. With respect to HIV/AIDS the rates are consistently lower throughout the region, even in Syracuse and Onondaga County. In Onondaga County there are relatively high numbers of people living with HIV/AIDS but the prevalence and incidence rates are lower.

Great strides have been made with respect to HIV/AIDS, and for most it is considered to be more of a chronic condition that can be managed with medications than a terminal condition. Rates of illness, death, and HIV transmission have declined dramatically over the past decade. However, HIV/AIDS still has a major impact on certain segments of the population including intravenous drug users and the lesbian, gay, bisexual and transgender (LGBT) community.

Chlamydia, gonorrhea, and syphilis are the most common sexually transmitted diseases although the rates across the region are generally lower. The exception to this is Onondaga whose rates are nearly twice the Upstate New York average. It is important to note trends and variation across the counties in CNY. Pneumonia is also one of the leading causes of death, particularly for frail older adults, and one of the leading causes of hospital readmission overall, although not for the Medicaid population.

Access to health care and preventive services

The extent to which a person has insurance that helps to pay for medical services as well as access to a full continuum of high quality, timely, accessible health care services has shown to be critical to overall health and well-being. Access to a usual source of primary care is particularly important as it greatly impacts one's ability to receive regular preventive, routine, and urgent care, as well as chronic disease management services for those in need. Nationally, low income, racial ethnic minority populations are less likely to have a usual source of primary care, less likely to have a routine check-up, and less likely to be screened for illnesses, such as breast cancer, prostate cancer, or colon cancer. Data also suggests that low income, racial/ethnic minority populations are more likely to use hospital emergency

department and inpatient services for care that could be avoided or prevented altogether with better more accessible primary care services.

Central New York's healthcare system and the health and community resources that are available to Medicaid insured and uninsured residents will be discussed in greater depth below. However, overall the system is somewhat fragmented and there are significant shortages and barriers to care that limit access for large portions of the region. This is particularly true outside of Syracuse and Central New York's other smaller population centers. The region's health care system is anchored in Syracuse, which provides access to world-class services. Despite this resource, data collected for this assessment shows that large segments of the population in the region, particularly low income and racial/ethnic minority populations, face significant barriers to care and struggle to access services due to lack of insurance, cost, transportation, cultural/linguistic barriers, and shortages of providers willing to serve Medicaid insured or low income, uninsured patients.

In general, data from New York's Expanded BRFSS shows that residents in the CNYCC's service are just as likely, if not more likely than the New York State and Upstate New York populations overall to receive preventive services such as pap tests, mammograms, or colonoscopies. These data also suggest that the population is nearly as likely to report that they have a regular primary care provider. However, other data would suggest that many are not necessarily accessing care on regular, periodic basis or using a high quality, primary care medical home (PCMH) that can fully coordinate the services they receive as that usual source of care.

Table 9. Access to Health Care and Service Utilization

County	Adults with health insurance (%)	Adults with regular health care providers (%)	Adults with dental visits in past year (%)	Women aged 40 and older who had mammograms in the past 2 years (%)	Women who had pap tests in the past 3 years (%)	Adults aged 50 and older who ever had sigmoidoscopies or colonoscopies (%)	Adults age 65 and older who had flu shots in the past year (%)	Adults age 65 and older who ever had pneumonia vaccinations (%)
Cayuga	89.7	88.9	71.7	78.7	83.0	71.3	76.7	70.1
Lewis	83.4	83.1	67.8	77.7	78.9	50.1	75.3	70.0
Madison	86.1	89.2	69.0	84.9	82.1	71.3	73.9	77.7
Oneida	90.1	86.1	71.9	80.7	77.4	68.2	69.3	65.3
Onondaga	91.0	85.9	73.9	87.5	89.4	73.2	82.4	83.0
Oswego	86.2	82.0	66.4	79.1	82.0	65.3	67.4	69.8
NY State	89.9	87.1	72.7	81.9	82.6	68.4	76.0	71.2
Data source: BRFSS County-Specific Prevention Agenda Highlights 2009								
Note: Other variables are available in complete data set.								

The percentage of the population that had a pap test in the past three years ranges from 89.4% in Onondaga County to only 77% in Oneida, with everyone else falling somewhere in between. The percentage of adults 50+ who have had sigmoidoscopy or colonoscopy varies across the region. Once again, residents of Onondaga have the highest rates but those in more rural areas do not fare as well. With respect to colon cancer screening, 73.2% of the Onondaga population had a colonoscopy or sigmoidoscopy in the appropriate interval. Lewis, Oneida, and Oswego had the lowest percentages.

Rates of ambulatory care sensitive conditions and the leading causes of preventable hospitalizations

Some of the most striking findings from the assessment are related to rates of inappropriate hospital inpatient and emergency department

Figure 4. Overall PQI Composite Score Map

utilization, which are dramatically higher across most counties in the CNY region, particularly for adults. To assess inappropriate hospital inpatient and emergency department utilization, the New York DOH provided data to DSRIP CNYCCs on an extensive series of Prevention Quality Indicators (PQIs)[6], Pediatric Quality Indicators (PDIs)[7], and Potentially Preventable Visits (PPVs).[8] These allow one to identify when a patient is being admitted to the hospital inpatient setting or the hospital emergency department setting for a condition that likely could have been prevented or avoided with more timely, higher quality primary care services. With respect to PQIs there are 14 specific conditions (e.g., diabetes, hypertension, asthma, heart failure, etc.) that each have indicators that allows one to identify the extent to which these conditions are being well managed for adults in the primary care setting. There are also three composite PQI measures (i.e., acute, chronic, and diabetes) that group multiple PQIs together in ways that allow one to assess the overall strength of the primary care system and its ability to manage chronic and acute illness. Similarly, there are series of roughly 20 PDIs, along with a series of composite measures that serve the same function for children. Finally, with respect to inappropriate emergency department utilization the DOH provided PPV data, which is an aggregated analysis of a series of conditions that could be reduced or eliminated with adequate primary care services, patient monitoring and follow up. See map above for geographic variation in performance on the PQI composite indicator.

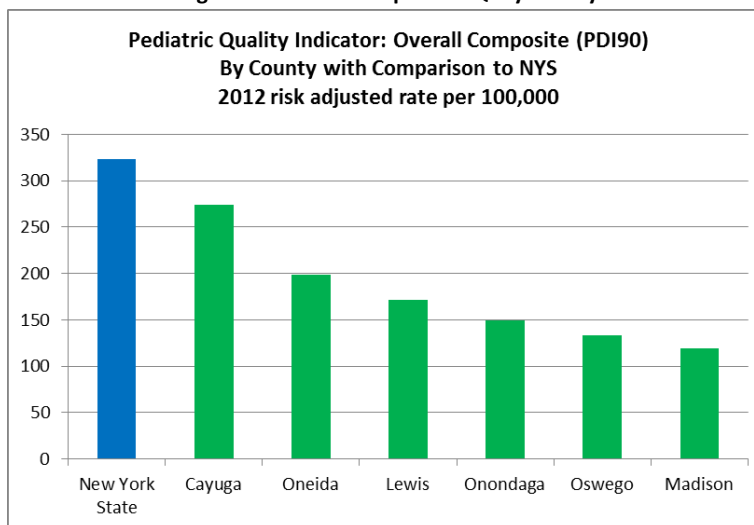[6] http://www.qualityindicators.ahrq.gov/modules/pqi_overview.aspx
[7] http://www.qualityindicators.ahrq.gov/Modules/pdi_resources.aspx
[8] http://www.healthdata.gov/data/dataset/all-payer-potentially-preventable-emergency-visit-ppv-rates-patient-zip-code-sparcs

A review of the region's PQI data shows four of the six counties have higher rates of PQI conditions than the New York State average. Further the rates are disproportionately higher in the more rural areas, although there are relatively high rates in pockets throughout the region.

Interestingly, a review of the region's PDI data does not lead to the same conclusions. With respect to the PDIs, the rates at the county-level are lower than the New York State average in all six counties. This would suggest that primary care providers do a better a better job at managing children than family practice physicians, general practitioners, and internists do at managing adults. This is not a finding that was corroborated through our key informant interviews. Further investigation is required to tease out why this data is so different.

Figure 5. Overall Composite PQI by County

Pediatric Quality Indicator: Overall Composite (PDI90)
By County with Comparison to NYS
2012 risk adjusted rate per 100,000

Finally, a review of the region's PPV and other emergency department utilization data shows a dramatic overutilization of the emergency department particular in the more rural areas. The map below left highlights areas in red with the highest quartile of potentially preventable hospital emergency department visits. The map below right highlights in yellow, areas where more than 30% of Medicaid members have had an emergency room visit in the County.

Figure 6. Overall Composite Pediatric Quality Indicator by County
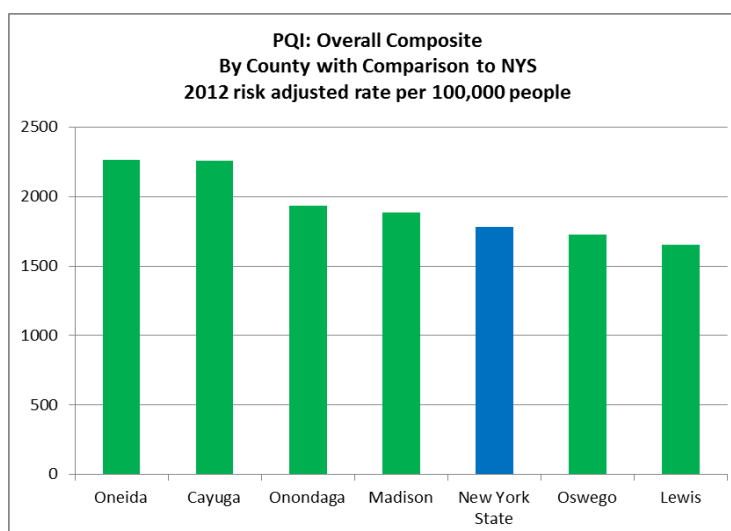

PQI: Overall Composite
By County with Comparison to NYS
2012 risk adjusted rate per 100,000 people

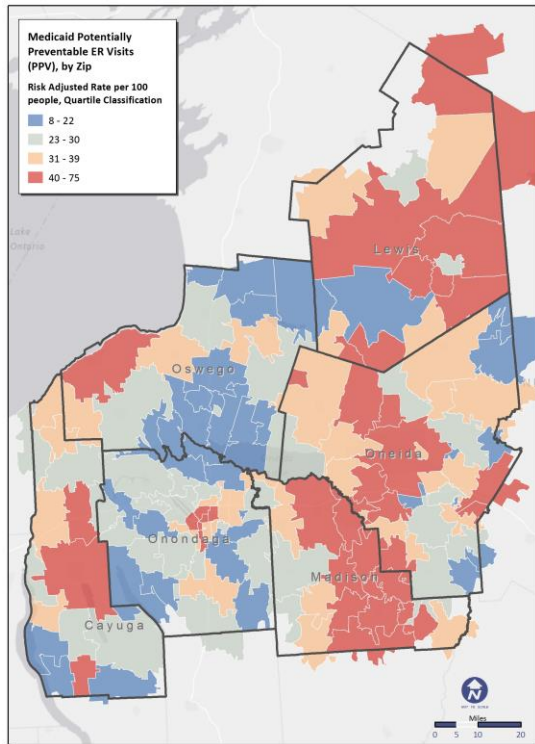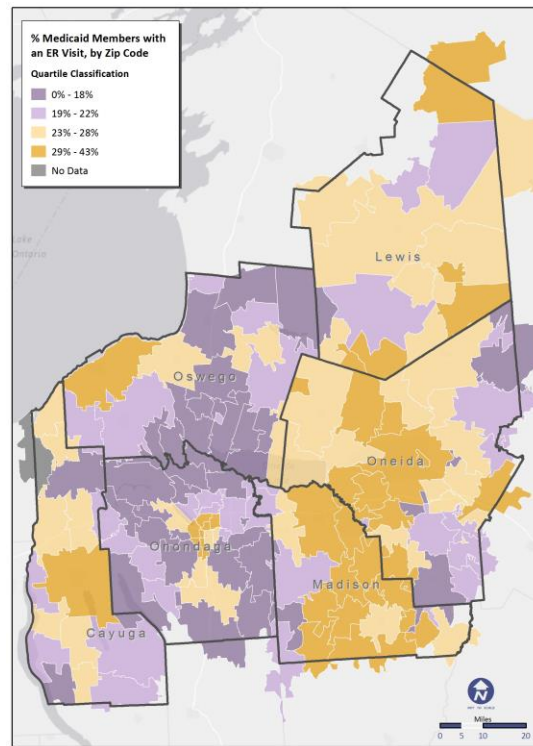**Figure 7. Potentially Preventable ER Visits Map**

Figure 8. Percent of Medicaid Members with ER Visit Map

B. Identification of Main Health and Health Service Challenges

An understanding of community need and health status in the CNYCC Service Area begins with knowledge of the population's characteristics as well as the underlying social, economic, and environmental challenges and assets that impact health. This information is critical to: 1) understanding disease burden, health disparities and health inequities; 2) identifying target populations and health-related priorities; and 3) targeting strategic responses. This assessment captured a wide range of quantitative and qualitative data related to age, gender, sexual orientation, race/ethnicity, income, poverty, family composition, education, violence, crime, unemployment, access to food and recreational facilities, and other determinants of health. These data provide valuable information that allows characterization of the population as well as provides insight into the leading determinants of health and health inequities.

Although DSRIP's ultimate desired outcome is to reduce readmissions by 25% for the Medicaid and uninsured populations, there is the recognition that health utilization and health status are embedded in a broad environmental context. The Centers for Disease Control and Prevention's (CDC) *Health Impact Pyramid*, shown below illustrates this concept. Although clinical interventions and counseling and education do have an impact on health status, socioeconomic factors, such as housing, poverty, and education, and environmental factors have the greater impact on health status. This section notes the interrelatedness across behavioral, socioeconomic, and environmental risk factors and describes some of these larger determinants of health for the CNYCC region. In that behavioral risk factors (such as smoking, drinking, and physical activity) and socioeconomic factors (such as poverty levels, educational attainment, and employment status) have been discussed in previous sections of this report, this section provides more detail related to environmental risk factors.

Figure 9. Health Impact Pyramid Diagram
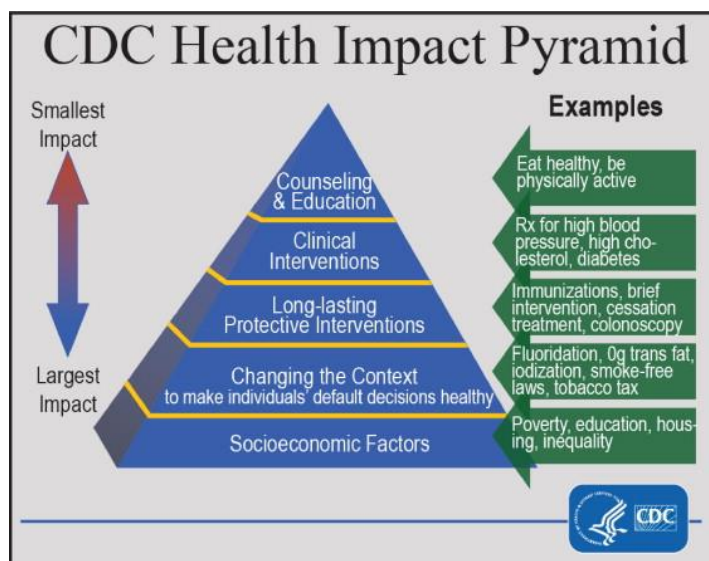
Interrelatedness of Behavioral, Socioeconomic, and Environmental Risk Factors

Behavioral, socioeconomic, and environmental risk factors are intertwined, each affecting the other and all influencing access and utilization of health services as well as overall health status. Behavioral risk factors refer to an individual's choices to act in a particular manner. Research conducted using New York State vital statistics showed that nearly half (47%) of all 2012 deaths were attributed to 8 modifiable behaviors: smoking, poor diet and physical activity, alcohol consumption, microbial agents, toxic agents, motor vehicle crashes, incidents involving firearms, and unsafe sexual behavior[9]. Of these 8, smoking, poor diet, and physical activity constitute 73% of deaths attributed to modifiable behaviors. Additionally, as noted in this same source, these same behaviors significantly contribute to emergency department and inpatient use, primarily manifested in the high rates of chronic disease as described previously.

Bringing this to the level of the CNYCC, compared to Upstate NY, all six counties have disproportionally higher percentages of adults who are current smokers (18.9% in Upstate NY compared to a range of 19.3% in Lewis to 25.4% in Madison). The CNYCC service area population also did not fare well on metrics related to diet and exercise. With the exception of Onondaga County, all other counties showed greater rates of adults who are obese (from 25.7% in Oneida to 32% in Oswego) compared to Upstate NY (24.3%). Five of six counties fared worse than the Upstate NY average for the percentage of adults consuming 5 fruits or vegetables a day and all six counties fared worse than the Upstate NY average for the percentage of adults with no leisure-time physical activity. An additional 7 percent of modifiable deaths are attributed to alcohol consumption, and five of the CNYCC counties have heavy drinking rates higher than the Upstate NY average rate (refer to Table 8 above).

These behavioral risk factors are wrapped up in socioeconomic and environmental factors that are often beyond an individual's ability to control. In terms of socioeconomic factors, it is well established that lower income and less educated populations (both attributes of Medicaid-insured population overall and CNYCC population specifically) and rural populations (a large demographic of the CNYCC) have higher smoking rates, poorer diets and exercise habits, and poorer overall health. Vulnerable populations including the elderly, minorities, refugees, people with developmental disabilities, veterans, and homeless people are at socioeconomic disadvantage. The vast majority of the county's minority populations live in Syracuse, and the State's Prevention Agenda dashboard shows large inequities in health status, including the premature death rate, for minority populations compared to White populations. Syracuse is also home to a population of approximately 6,000 refugees from Southeast Asia and the Middle East and Utica is home to a refugee resettlement program. Additionally, there are pockets of migrant populations, both transitory and permanent, throughout the CNYCC. Although there are no statistics related to health care access and utilization for these populations, consideration must

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[9] Office of Public Health, New York State Department of Health. DSRIP Population Health Projects: Introduction to Population Health and Community Needs Assessment. June 1014. Webinar slides. Estimates were extrapolated using the results published in "Actual Causes of Death in the United States, 2000" JAMA, March 2004, 291 (10) and NYS 2012 Vital Statistics data.

be provided in terms of culture and language sensitivities and overall challenges this population may have accessing care. Key informants who provide support and care to the refugee population note that cultural understanding of health care, socio-cultural family structures and even the concept of time and appointment schedules impacts accessing health care.

Multiple key informants contacted during the needs assessment process noted this interaction between socioeconomic factors and individual behaviors. Some key informants referred to "lack of health literacy," which had multiple implied meanings. For example, it referred to the lack of knowledge related to the consequences of individual behaviors (such as exercise, healthy diet, and preventive care) on overall health status. It also referred to the lack of knowledge about resources available to assist. Other key informants referred to the "culture" or "norms" in their particular area, which did not necessarily promote healthy lifestyles. This lack of health literacy or culture/norms also influenced the way in which individuals accessed health services. Most often the examples provided were using the emergency department for routine health care, accessing health services only when sick (rather than for prevention), lack of understanding about health insurance (what services are covered and what are not; pre-approvals, co-pays), and not establishing a primary care provider to help guide and coordinate health care.

Environmental factors add another layer of complexity. Is it that poorer, less educated populations have less healthy behaviors or is it that they live in areas that are less conducive to health? Do residents not understand that EDs should only be used for emergencies, or is it that there are a lack of primary care providers within a reasonable distance or that the earliest primary care appointment is two months hence? Availability and accessibility of health care providers, healthy food, parks and recreational areas, transportation, and housing all influence an individual's well-being, their ability to make healthy and appropriate choices, and ultimately their overall health status. Below is a description of some key environmental factors influencing health in the CNYCC area.

Environmental Risk Factors

Provider shortages

There is both anecdotal and quantitative data to indicate that provider shortages are a major concern in the CNY region, most notably psychiatrists, dental providers, and primary care providers. In rural areas, multiple key informants also noted access to medical specialists as an issue. The rural areas also experience greater challenges in recruiting providers. Table 10 is drawn from the Area Health Resource Files (AHRF) maintained by the Health Resources and Services Administration (HRSA). The AHRF is a compilation of key sources listing providers, including constituency organizations such as the American Hospital Association and American Medical Association, as well as governmental sources such as the Centers for Medicare and Medicaid Services and the Bureau of Labor Statistics. As noted in the table, all counties in the CNYCC have shortages of primary care providers and psychiatrists, and all counties except Onondaga have a shortage of dentists and OB-GYNs.

An important note is that this table is an overestimate of the capacity. While the assessment was able to gain a very strong understanding of the primary care safety net landscape driven largely by data on the region's FQHCs and hospital-based primary care practices provided through a primary care safety net assessment conducted by the Health Foundation of Western and Central New York. The DSRIP assessment was not able to fully understand the capacity provided by private, independent primary care providers and the extent to which they accept Medicaid-insured patients. Anecdotally, there were a handful of private practices that serve a small population of Medicaid-insured patients, but the general sense is that primary care providers serving the Medicaid population are "stretched thin." One FQHC noted a two-month wait to make an appointment. For behavioral health and dental care it is even longer. Multiple key informants noted that there are very few, if any, dentists in particular counties that serve Medicaid-insured populations. One mother with a child needing a root canal was told that the closest access was over 120 miles away. Psychiatrists are relatively few in number; and the relatively few are further reduced in number when those serving Medicaid-insured is part of the criteria. Additionally people with Medicaid related stories of having eye exams covered but not glasses.

Table 10: AHRF Number of Providers by County

County	Primary Care		OB/GYN		General Surgeons		Psychiatrists		Dentists	
	#	Rate*	#	Rate	#	Rate	#	Rate	#	Rate
Cayuga	23	28.9	2	5.1	3	3.8	1	1.3	30	37.5
Lewis	16	58.2	3	22.3	2	7.3	0	0	5	18.5
Madison	42	58	7	19.0	4	5.5	5	6.9	23	31.3
Oneida	175	74.9	20	17.1	26	11.1	28	12.0	127	54.1
Onondaga	439	94	71	29.4	62	13.3	71	15.2	338	72.4
Oswego	43	35.3	5	8.2	5	4.1	1	0.8	28	22.9
NY State	16,171	109.58	2,645	26.2	1,922	9.8	3,586	18.3	14,035	72.4
USA	233,862	82.6	34,047	21.4	27,301	8.7	29,521	9.4	183,286	59.4
*Rate per 100,000 population										
Data source: AHRF 2012										

The shortage information is further substantiated through the large number of Health Professional Shortage Area and Medically Underserved Areas/Populations designated in the CNYCC. In Oswego, the entire Medicaid-eligible population is designated as a primary care HPSA. All Medicaid eligible populations in Syracuse and Utica are designated as shortage areas for primary care. Large areas of the other counties are also HPSA designated as shown in the map in Figure 10.

Similar areas are noted as mental health shortage areas. In Lewis, and Madison, the entire counties (Medicaid eligible or not) have mental health shortage designations, as do the Medicaid-eligible populations in Oneida County, Oswego County and the City of Syracuse. Additionally two correctional facilities are designated as mental health shortage areas: Auburn Correctional Facility (Cayuga County) and Mid-State Correctional Facility (Oneida County).

Figure 10. HPSA Map
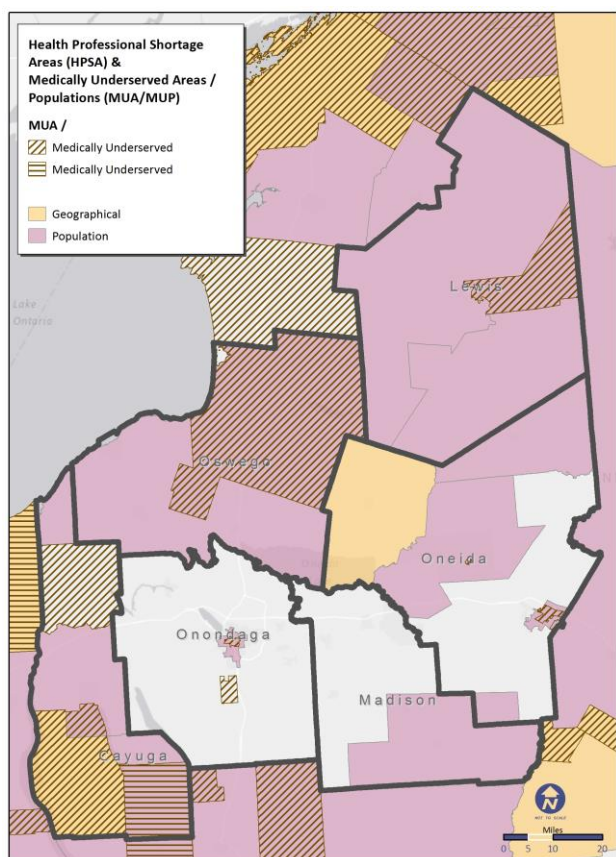
There are fewer designations for shortages of dental providers[10]. The Medicaid eligible populations in Syracuse and all of Oswego County are so designated as is all of Lewis County. The other dental shortage designations, however, are more targeted to specific service areas within the counties of Cayuga, Madison, Onondaga, and Oswego. This is contrary to the information received through the key informant interviews and the survey that was fielded. For a table of all HPSA shortage areas, see Table 11 in Appendix A.

In addition to general provider shortages, there is strained capacity among FQHCs to meet the demand for services. In a survey of CNYCC partners, there were seven respondent FQHCs. Among these FQHCs, three were under and three were at capacity to provide outpatient primary care services to adults; the same distribution was reported for expected capacity to serve adults in the next year. With regards to pediatric patients, six respondent FQHCs reported being at capacity to serve children, while none reported being over or under capacity. However, looking ahead, three FQHCs thought they would be under capacity to serve children in the next year.

Furthermore, social barriers contribute to limited access to the providers that do exist. In focus groups and listening sessions with consumers, consumers indicated that there were fewer barriers to accessing needed behavioral health but negative experiences with primary care. Consumers talked about being made to feel "strange" and unwanted in primary care offices. There is a sense of two separate health care worlds – one that is primary care oriented and the other that is behavioral health and that there is little perceived coordination between the two. Persons who experience mental illness often feel unaccepted and misunderstood in the PCP environment.

Transportation

Transportation barriers are a pervasive issue across all counties in CNY. Lack of public transportation, limited transportation services, barriers caused by the road system, and lack of income and financial resources to purchase vehicles were causes often cited by informants. Additionally, cold, sometimes harsh winters make driving long distances difficult or waiting outside for public transportation

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[10] HPSA designation has to be pursued so the fact that an area/population does not have one is not necessarily because it does not qualify but could be because no one has initiated the designation process.

uncomfortable. Medicaid taxi vouchers are being used but are often noted as insufficient and often require hours of waiting. Additionally the Medicaid transportation services require up to 3 days notice of an appointment. This is particularly problematic for people leading complex lives, those who have mental illness and adolescents. A few counties have other transportation services available including County Agencies for the Aged who offer seniors rides to appointments within the county and service organizations that focus on persons with mental illness or individuals with developmental disabilities. Rather than serving the needs of those accessing the services, residents need to fit their needs into the structure of the transportation services. Lack of adequate and available transportation contributes to patients' inabilities to access preventive and routine health services, to follow through on discharge plans, go grocery shopping for healthy foods, and obtain medications, among other challenges.

Housing

An increasing body of evidence has associated housing quality with poor overall health status and illness due to infectious diseases, chronic illnesses, injuries, poor nutrition, and even mental disorders. These health issues are inherent to low income residents but there are also clear links between poor housing conditions and poor health status. At its extreme those without housing, either living on the street or in some transient housing situation, have dramatically higher rates of illness and shorter life expectancy.[11] Shelter is a basic human need and lack of affordable and safe housing across the CNYCC region impacts significantly the well-being of individuals and families. Unstable housing negatively affects health care utilization, especially routine and preventive care, which may become less of a priority if other basic need issues are a concern, such as housing. Low-income housing programs in the CNY area have extensive wait times, often measured in years. In several of the more rural counties there are no homeless shelters, supportive or transient housing. Several informants commented on the vicious cycle of people living on the streets presenting to emergency departments for shelter, food, a shower and clean clothes. These folks are often admitted for physical and/or mental illness and then released back out onto the streets where it starts all over again.

In addition to the broader housing concern, several key informants raised the issue of supportive housing, most notably for persons with mental health, substance abuse, and physical disabilities. Inpatient settings, including skilled nursing facilities, noted the difficulties around discharge when housing is an issue for a particular patient. Instances were cited where patients were kept longer than needed in these settings because discharge to home was not an option. Without adequate housing, patients are less able to follow through on discharge plans and obtain the support they need, resulting in another emergency room visit or readmission.

Healthy and safe environment

The New York State 2013-2017 Prevention Agenda outlines four primary areas that define a healthy and safe environment, including: outdoor air quality, water quality, built environment (housing, educational settings, employment settings, public buildings, transportation, zoning) and injuries, violence, and

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[11] http://www.nationalhomeless.org/factsheets/health.html

occupational health. These primary areas of prevention for a healthy and safe environment work in concert with one another and have significant impacts on the health status of individuals and the overall community.

The Central New York region is comprised of a diverse array of social and built environments, which include urban, suburban, and rural communities. Within this region, individual behavior and the built environment influence access to both medical and non-medical resources. The counties constituting the CNY region are predominantly rural, but there is a range, requiring the DSRIP project planning process to address both urban and rural contexts. Oneida and Onondaga, with the population centers of Utica and Syracuse respectively, have significant urban and rural populations. The remaining counties are predominantly rural. The combined regional shortages of housing and transportation, especially in rural areas, lead to barriers in accessing healthcare, maintaining medical appointments, engaging in physical activity, and preparing healthy meal items. Challenges in geography and zoning, especially in rural areas, make it difficult for individuals to engage in regular physical activity as well as access public recreation facilities and parks.

Barrier free access deficiencies

Improved community design standards help make streets safe for all users including pedestrians, bicyclists, and those that rely on public transportation. These standards promote environments that encourage physical activity and engage community members in healthy behaviors. Across the Central New York region, counties have begun to adopt complete street policies that include increased options for transportation, more livable communities, improved safety, renewed economies, and increased opportunities for physical activity. Most notably, the City of Syracuse has incorporated these design standards into its infrastructure with the establishment of the Connective Corridor. This development links the Syracuse University community with downtown Syracuse through a new roadway that provides safe and sustainable access for bicyclists, pedestrians, and those who utilize public transportation. These new standards engage and connect community members with opportunities for physical activity and social interaction. In more rural communities across the Central New York region, barriers often exist that prevent individuals from walking and biking to the areas that they live, work, and play. Limited access to transportation and the lack of roadway sidewalks impact an individual's ability to make healthy decisions, especially when weather conditions are severe and travel becomes increasingly difficult. By removing these barriers and ensuring that new developments include sidewalks and bike lanes, the health status of rural communities can begin to improve, particularly for residents that are disproportionately low-income.

Access to affordable food

Issues around access to affordable and healthy food options contribute to health problems across Central New York. Within isolated and rural parts of the region, food insecurity continues to disproportionately impact low-income populations. Lack of transportation in rural areas exacerbates these issues as geography makes it difficult for individual's to access grocery stores without the use of a vehicle. Barriers around transportation and the built environment pose challenges to an individual's ability to make healthy decisions regarding their body and diet. The manner in which food is processed

and made available to individuals has a tremendous impact on the health of those consuming it. Many of the chronic diseases attributed to food insecurity are preventable, yet continue to harm individuals in the Central New York region, especially low-income individuals. Limited access to healthy food captures the percent of the population who are low-income and do not live close to a grocery store.

Table 11 represents the number of grocery stores per 100,000 population. Each of the counties in the CNYCC has far fewer grocery stores than the state average, probably due to the rural geography of the area. This certainly limits options for residents in terms of where to shop, selection of foods available, and ability to do cost comparisons.

Table 11: Grocery Store Access

County	Total Population	Number of Establishments	Establishments, Rate per 100,000 Population
Cayuga	79,996	16	20.00*
Lewis	27,149	2	7.36*
Madison	72,382	14	19.34*
Oneida	233,585	55	23.54*
Onondaga	466,852	125	26.77*
Oswego	122,220	12	9.81*
New York State	19,378,102	10,037	51.80
*Rate lower than state Data source: US census Bureau, County Business Patterns: 2012. Additional data analysis by CARES			

Table 12 drills down further on grocery store access, examining specifically access to grocery stores for low-income populations. Low access is defined as greater than one mile from a supermarket or grocery store in urban areas or greater than ten miles from a supermarket or grocery store in rural areas. This indicator is relevant because it provides a measure of healthy food access and environmental influences on dietary behavior, specifically related to low-income populations (an example of the interrelatedness between socioeconomic and environmental factors). Lewis, Madison, Oneida, and Onondaga counties all are higher than the state average for percentage of population with low-income and low access to a supermarket or large grocery store.

Table 12: Percentage of Population with Low-Income and Low Access to a Supermarket or a Large Grocery Store

County	Total Population	Population with Low-Income and Low Access	Percentage with Low-Income and Low Access
Cayuga	80,026	1,422	1.80
Lewis	27,087	1,531	5.70*
Madison	73,442	3,548	4.80*
Oneida	234,878	13,166	5.60*
Onondaga	467,026	25,602	5.50*
Oswego	122,109	3,067	2.50
New York State	19,378,102	481,911	2.50
*Rate higher than state			
Data source: 2010 US Department of Agriculture Food Environment Atlas Data as of November, 2012			

Recreational facilities and park access

Access to recreational facilities and parks encourages physical activity. Table 13 represents the number of recreation and fitness facilities per 100,000 population. With the exception of Onondaga County, all others have a lower establishment to population ratio than the state as a whole.

Table 13: Recreation and Fitness Facility Access

County	Total Population	Number of Establishments	Establishments, Rate per 100,000 Population
Cayuga	79,996	4	5.00*
Lewis	27,149	2	7.36*
Madison	72,382	5	6.90*
Oneida	233,585	19	8.13*
Onondaga	466,852	59	12.63
Oswego	122,220	11	9.00*
New York State	19,378,102	2,142	11.05
*Rate lower than state			
Data source: US census Bureau, County Business Patterns: 2012. Additional data analysis by CARES			

The population living within a half mile of a park is noted in Table 14. All CNY counties listed below are lower than the state average for park access.

Table 14. Park Access

Report Area	Total Population	Total Population Within ½ Mile of a Park	Percent Population Within ½ Mile of a Park
Cayuga	80,026	22,777	28.00*
Lewis	27,087	1,599	6.00*
Madison	73,442	21,421	29.00*
Oneida	234,878	1,541,891	36.00*
Onondaga	467,026	83,633	49.00*
Oswego	122,109	226,793	7.00*
New York State	19,378,102	9,989,440	52.00
*Rate lower than state Data source: Centers for Disease Control and Prevention. Healthy Community Design Initiative and Geospatial Research Analysis and Services Program. National percentage of population that resides within half a mile of a park. Accessed from Environmental Public Health Tracking Network, 2010. Source geography: County.			

C. Community Assets and Resources

In order for the CNYCC to: 1) identify community need and service gaps; 2) select the most appropriate, value-added projects, and; 3) develop sound, well-focused action plans for the projects selected, it must have a thorough understanding of the resources and assets that exist in the Central New York region. The following is a description of the resources and assets that exist across the six counties that make up the CNYCC's service area. This description is segmented into six components: Hospital and specialty care services; primary care services; behavioral health services; oral health services; post-acute services (e.g., skilled nursing facilities, nursing homes, and other long-term care facilities) and; community health/social services. This summary description is supported by a series of County Resource and Asset Listings that specifically identify the core service providers and assets that exist in each County. This summary is also supported by the individual county assessments that were completed as part of the CNYCC's needs assessment. This supporting documentation is appended to this report.

Per the DSRIP needs assessment guidance, this section will describe the resources available for each of the service components and consider their scope of service, distribution, and capacity. This description touches on the broad range of services that are available for the population at-large in each category but is primarily focused on the system of care for low income, Medicaid insured and uninsured residents of the region. This information will inform the CNYCC's understanding of availability, affordability, quality, and accessibility of services as a way of identifying access barriers, shortages, care coordination, and service gaps.

Ultimately, this information will ensure that the project plans are carefully targeted based on community and regional need. This information will also ensure that the project plans involve and

leverage all of the available health and community resources throughout the region. Finally, the resource assessment will allow the CNYCC to know what resources and capacities exist in the service area and, along with the other components of the community needs assessment, allow the CNYCC to meet the DSRIP goal of 25% reduction in avoidable hospital use.

This information was informed by a broad range of quantitative and qualitative data sources, including; 1) the CHNA's key informant interviews and focus groups, 2) resource data drawn from the New York State Department of Health, 3) Data drawn from the Bureau of Primary Health Care's UDS Mapper Database, and the 3) the PPS Partner Survey identified by the core members of the CNYCC. Table 15 below includes a listing of the leading health and community providers by county that were identified through our key informant interviews and CNYCC partner lists, confirmed and augmented by a review of the more complete and systematic information distributed by NYS DOH. This is not an exhaustive list, rather it is meant to highlight those organizations that the CNYCC should focus on in developing their project plans. A more comprehensive listing of all of the region's resources, organized by county, can be found in Appendix B. Below is a description of each service component. The descriptions begin with an overview of the resources available across the region, followed by a discussion of capacity, accessibility, patient population served, and quality.

Table 15. Key County Providers

County	Hospital	Primary Care Safety Net	Behavioral Health	Dental	Post-acute	Community Health Providers
Cayuga	Auburn Community Hospital	East Hill Family Medical, Inc. Family Health Network, Inc. Port Byron Community Health (Finger Lakes Community Health Center) Children's Health Specialists Hillside Children's Center Auburn Community Hospital – Primary Care Practices	Unity House of Cayuga County Cayuga County Department of Mental Hygiene Cayuga Centers Cayuga County Community Mental Health Confidential Help for Alcohol and Drugs (CHAD), Inc. Cayuga County Mental Health Center East Hill Family Medical Port Byron Community Health Hillside Children's Center Cayuga Counseling Services Family Health Network, Inc.	Cayuga County DDS East Hill Family Medical Port Byron Community Health Family Health Network, Inc.	Finger Lakes Center for Living Hospice and Palliative Care, Inc. (Cayuga Medical Center)	Cayuga County Office of Aging Hillside Children's Center Auburn Housing Authority UCPA of Cayuga County, Inc. Cayuga/Seneca Community Action Agency Cayuga Chamber of Commerce Auburn Nursing Home Cayuga County Health Department Cayuga Counseling Services
Lewis	Lewis County General Hospital	Lewis County General Hospital – Primary Care Practice Sites North Country Family Health Center	North Country Family Health Center	North Country Family Health Center		Anise Child & Family Lewis County Services Lewis County Public Health
Madison	Community Memorial Hospital Oneida Health Care	Planned Parenthood Mohawk Hudson Liberty Resources Mary Rose Clinic Madison County Memorial Hospital, Primary Care Practices Oneida Healthcare Center	Hutchings Psychological Center Madison County Mental Health		VNA Home Care	Madison County Department of Health Anise Child & Family Loretto
Oneida	Faxton St. Luke's; Rome Memorial Hospital St. Elizabeth's Medical Center	RPCN- Utica Community Health Center Faxton St. Luke's Rome Memorial Hospital St. Elizabeth Medical Center Oneida Healthcare Center	The Neighborhood Center Mohawk Valley Psychiatric Center	RPCN- Utica Community Health Center	St. Luke's Home, Mohawk Valley Home Care	Mohawk Valley Resource Center for Refugees, Inc. Upstate Cerebral Palsy
Onondaga	Crouse Hospital St. Joseph's Hospital Upstate University Hospital	Syracuse Community Health Center Crouse Hospital – Primary Care Practices St. Joseph's Hospital – Primary Care Practices Christian Health Services Ramha Clinic AMAUS Clinic Poverello Clinic Upstate University Hospital – Primary Care Practices Community General Hospital – Primary Care Practices	Hillside Children's Center Liberty Resources Onondaga County Department of Mental Hygiene Prevention Network Syracuse Community Health Center	Syracuse Community Health Center	Franciscan Health Support Services, LLC Hospice of Central New York James Square Health and Rehabilitation Center Loretto Health & Rehabilitation Center Onondaga County Department of Adult and Long Term Care Services St. Camillus Residential Health Care Facility VNA Homecare	ARC of Onondaga Arise, Inc. Aurora of Central New York Enable Liberty Resources Onondaga County Health Department REACH CNY, Inc. The Salvation Army, Syracuse Area Services
Oswego	Oswego Health	Northern Oswego County Health Services, Inc. (NOCHSI) Oswego Hospital – Primary Care Practices	Farnham, Inc. Hillside Children's Center Oswego County Department of Mental Hygiene Oswego Hospital	Northern Oswego County Health Services (NOCHSI) Seneca Hill Manor, Inc.	Morningstar Cares Hospice of Central New York Oswego County Health Department St. Luke's Health Services Seneca Hill Manor, Inc. VNA Homecare	Aurora of Central New York Arise, Inc. ARC of Oswego Catholic Charities of Oswego County Oswego County Health Department Oswego County Opportunities, Inc.
Data source: 2014 Survey of Health Care and Community Resources; Key Informant Interviews						

Description of Health Care Resources

Hospital services

Summary Description of Available Resources and Resource Capacity

There are 13 hospitals in the six county CNYCC region that provide a broad range of hospital inpatient, emergency, and ambulatory care services.[12] This includes six community hospitals, four regional medical centers, one designated psychiatric hospital, and one Veterans Administration (VA) hospital. There are an estimated 2,827 beds across these 13 hospitals, including 688 beds at community hospitals, 2,002 beds at regional medical center hospitals, 187 psychiatric beds (including 32 at the psychiatric hospital), and 106 beds at the VA hospital. The list of hospitals by County in the region is included in Appendix B.

Table 16: Hospital Beds / 1,000 Residents for Hospitals in CNY Care Collaborative CNYCC Service Area by County 2014 (Excluding psychiatric beds)

County	Number of Beds	Population	Average Beds per 1,000 residents
Cayuga	85	79,996	1.1
Lewis	31	27,062	1.1
Madison	126	72,977	1.7
Oneida	640	234,336	2.7
Onondaga	1,592	466,179	3.4
Oswego	136	122,055	1.1
CNYCC Region	2,610	1,002,605	2.6
New York State	50,143	19,398,125	2.6

Note: Numbers include beds in facilities designated as 'Hospitals' or 'Primary Care Hospital -Critical Access Hospitals', but exclude psychiatric beds.

Data source: Calculated using beds data Health Facility Certification Information file from Health Data NY - https://health.data.ny.gov/Health/Health-Facility-Certification-Information/2g9y-7kqm, accessed 10/31/2014.

The overall capacity with respect to beds per 1,000 residents varies across the counties in the CNYCC's service area but on a regional basis is comparable to the New York State average. Per Table 16 above, the average number of beds per 1,000 residents by county ranges from a high of 3.4 beds per 1,000 residents in Onondaga to 1.1 beds per 1,000 residents in Cayuga, Lewis, and Oswego. Oneida also has a high number of beds per population compared to the other counties in the region. The fact that the beds per 1,000 figure is highest in Onondaga is a clear reflection of the fact that Syracuse is a medical

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[12] Hospital information, including bed capacity, available at: http://profiles.health.ny.gov/

service hub and has been historically perceived as source of care for the region. This same interpretation holds for Oneida which is to a lesser degree a care hub. The average number of beds per 1,000 residents for the CNYCC service area overall is 2.6 beds per 1,000, which is consistent with the New York State rate.

This data combined with our data from the key informant suggests that regionally there is more than adequate capacity of hospital services regionally. In fact, the data suggests an overcapacity. The beds per 1,000 resident rates are comparable to the state and the occupancy rates, while comparable to the State average, are low with four of the six counties have occupancy rates that are at least 25% lower than that the state average.

With respect to hospital occupancy rates, the data suggests a similar interpretation. Per Table 17 below, there is considerable variation in occupancy rates by county but regionally the CNYCC service area average occupancy rate is slightly lower than the State average. The occupancy rates by county range from a high of 76.9% in Cayuga County to as low as 40.3% in Madison. The average occupancy rate for the six county PPS service area is 67.3% compared to a New York State average of 68.5%.

Table 17: Hospital Occupancy Rates for Hospitals in CNY Care Collaborative CNYCC Service Area by County 2012 (Including psychiatric beds)

County	Number of Beds	Total Inpatient Days (SPARCS)	Hospital Occupancy Rate
Cayuga	99	27,772	76.9
Lewis	31	5,510	48.7
Madison	126	18,525	40.3
Oneida	701	166,523	65.1
Onondaga	1,672	441,158	72.3
Oswego	164	26,780	44.7
CNYCC Region	2,793	686,268	67.3
New York State	56,191	14,042,431	68.5

*Total inpatient days data for 2012 were obtained from SPARCS Health Data Query System - https://apps.health.ny.gov/pubdoh/sparcsqry/, accessed on 11/3/2014. Number of beds data were obtained from Health Data NY - https://health.data.ny.gov/Health/Health-Facility-Certification-Information/2g9y-7kqm, accessed 10/31/2014. Hospital occupancy rates were calculated using this formula: (Total number of inpatient days/(Number of beds x 365 days))*100.

Quality, Care Coordination, and Care Transitions

Based on quantitative data compiled from NYS DOH and qualitative information from key informant interviews, the measured and perceived quality across the hospitals throughout the region is mixed.

Table 18 below shows selected quality metrics for the hospitals that operate within the region drawn from the Quality Improvement Organization (QIO) Clinical Warehouse. The data is compiled from hospitals that voluntarily submit data to the QIO Clinical Warehouse, which is a national data repository for private healthcare data. The QIO validates the information, provides feedback to the hospitals, and makes data available to the public through the Centers for Medicare & Medicaid Services (CMS) and the New York State Department of Health[13]. A wide range of quality data is presented including recommended care, mortality rates, customer satisfaction, emergency department timeliness, and Readmission Rates. The following is a review of selected indicators as well as a composite measures that assesses the overall timeliness and effectiveness of care.

The figures across all the hospital the composite measure were very high. The average across the hospitals in the region was 96%. On an indicator by indicator basis there was some variation, particularly across some of the measures. There was particular variation with respect to emergency department wait times, which ranged from as high as 84 minutes to as low as 19 minutes. There was also considerable variation with respect to patient satisfaction, which ranged from a high of 82% to a low of 53%. The range of variation with respect to % of patients readmitted within 30 days for selected conditions was consistent across the hospitals.

From our key informant interviews, most of those who were interviewed perceived the quality of emergency department and inpatient services to be high with respect to the quality of the clinical care and patient satisfaction. The one area of improvement that was mentioned consistently was the need for improving care coordination and the transition of care after discharge from the hospital. Interviewees consistently cited that there was often limited follow-up between the hospital, the post-acute settings, and primary care/behavioral health providers. Interviewees identified need for better flow of information between providers, as well as care managers to bridge care after discharge as methods to improve care coordination.

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[13] http://profiles.health.ny.gov/hospital/pages/technotes

Table 18: Selected Hospital Quality Data Metrics Drawn from the Quality Improvement Organization (QIO) Clinical Warehouse as Reported by the NYS Department of Health – 2012

Hospital	Emergency Department Wait Time (in minutes)	Patient Satisfaction	Readmissions Within 30 Days	Heart Attack Patients Readmitted within 30 Days	Heart Failure Patients Readmitted within 30 Days	Pneumonia Patients Readmitted within 30 Days	Timely and effective care (composite measure)
Auburn Community	60 min.	53%	19%	19%	21%	17%	95.3%
Community Memorial	31 min.	82%	19%	n/a	22%	17%	99.5%
Crouse	19 min.	63%	22%	18%	26%	19%	97.8%
Faxton-St Luke's Healthcare	56 min.	62%	22%	18%	24%	20%	96.9%
Lewis County General	35 min.	70%	18%	n/a	21%	16%	86.3%
Oneida Healthcare	35 min.	69%	21%	n/a	24%	18%	96.3%
Oswego	27 min.	60%	22%	19%	26%	19%	95.0%
Rome Memorial	45 min.	64%	21%	19%	23%	20%	95.3%
St. Elizabeth Medical Center	38 min.	70%	22%	20%	24%	19%	97.1%
St. Josephs	84 min.	73%	21%	20%	25%	20%	98.5%
Syracuse VA	n/a	n/a	23%	21%	25%	23%	98.3%
University Hospital SUNY Health Science Center	44 min.	63%	21%	17%	24%	20%	95.6%

Emergency department wait time: Average time patients spent in the emergency department before they were seen by a healthcare professional. Lower is better.

Patient Satisfaction: This measure is used to assess adult inpatients' perception of their hospital. Patients rate their hospital on a scale from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible. Higher is better.

Readmissions Within 30 Days: A composite average of the 30-day readmission rates for heart attack, heart failure, and pneumonia. Lower is better.

Heart Attack Patients Readmitted within 30 Days: This measure shows the all-cause 30-day readmission rate for patients discharged from a previous hospital stay for heart attack. Lower is better.

Heart Failure Patients Readmitted to Hospital within 30 Days: This measure shows the all-cause 30-day readmission rate for patients discharged from a previous hospital stay for heart failure. Lower is better.

Pneumonia Patients Readmitted within 30 Days: This measure shows the all-cause 30-day readmission rate for patients discharged from a previous hospital stay for pneumonia. Lower is better.

Timely and effective care (Composite measure): This measure is a weighted average of all of the process-of-care, or "core" measures, reported on CMS Hospital Compare. Higher is better.

*There was no data available for Upstate University Hospital at Community General

Outpatient primary care services

Summary Description of Available Resources and Resource Capacity

Central New York's primary care system, and particularly the portion of the system that serves low income, Medicaid insured, and uninsured residents in the region, is a diverse collection of primary care clinics or practice sites that fall into one of three categories. The first category is a group of publically and/or privately subsidized, full-service primary care clinics that are formally committed, either by mission or mandate, to serve low-income uninsured or insured patients. Federally qualified health centers (FQHCs), New York State, Article 28 clinics, clinics run by faith-based organizations, and free clinics (such as those that operate in Syracuse) are the primary entities in this category.

The second category is a group of hospital-owned or affiliated primary care clinics or practices that are typically part of larger, integrated delivery systems. These practices are most often located directly on or adjacent to hospital campuses, but many are scattered throughout the hospital service areas as well. With the implementation of ACA, these hospital-based practice sites are becoming a more integral part of hospital's service delivery and business strategies. They serve a broad range of predominantly insured patients across the socio-economic spectrum, including a significant portion of low-income, Medicaid-insured patients.

The third category is private, solo, or group primary care practices that operate independently in the community and, like the hospital-based practices, tend to serve insured patients, including those who are insured by Medicaid. Practice sites in this category are more likely to be pediatric clinics, given the relatively favorable nature of coverage and Medicaid reimbursement for children in New York State. Often these practices cap the number of Medicaid patients they serve. These practice sites individually do not typically make a large impact but as there are a large number of providers in this category collectively they can have a major impact.

The first and second categories of providers are relatively easily identified and are included in our list of core primary care providers by county in Appendix B. The third category, however, is much more difficult to identify and is largely not represented in our listing of resources by county. Some of these private, independent providers were identified through our key informant interviews or through other sources but largely they are obscured from our analysis. It is important to note, however, while they may not be included in our list, they do play an important role and it is this category of providers where there is the biggest potential for growth in the service system for low income Medicaid insured residents.

In the Central New York region, there is considerable variation on a county-to-county basis as to which of these provider category types is dominant. Appendix B provides a listing of the core primary care providers in each county.

Region-wide, there are 5 federally qualified health center (FQHC) grantees, which operate approximately 18 full service practice sites, and 5 free clinics operating in Onondaga County. There are also approximately 23 other hospital-based clinic organizations distributed throughout the CNYCC

service area, including some that are Article 28 designated, that operate approximately 35 full service practice sites. These practice sites provide the bulk of services to the low income Medicaid insured population and virtually all of the uninsured population. The list of FQHCs, Article 28 clinics, and other hospital-based clinic locations are included in Appendix B.

Given the difficulty in identifying the primary care system that is responsible for serving the low income Medicaid insured and uninsured population, it is difficult to assess capacity and the extent to which there are gaps in coverage for the underlying low income population that it is designed to serve. The Health Foundation of Western and Central New York (HFWCNY) commissioned John Snow, Inc. in 2013-2014 to assess the capacity and strength of the Central New York region's primary care safety net.[14] This study applied a robust methodology that compiled data from the core elements of the primary care safety net to determine the safety net's capacity, then overlaid this capacity over the size and characteristics of the underlying low income population. The ultimate conclusion of this assessment was that there is a robust, well-distributed network of FQHC and hospital-based safety net practices operating throughout the central New York Region. However, despite this distribution, there are still tremendous shortages and gaps in primary care safety net capacity throughout out the region that are hindering access, leading to delayed acute care and preventive services, and causing inappropriate utilization of hospital services.

Figure 11: Rates of Primary Care Safety Net Penetration into Low Income Population by County - 2013.
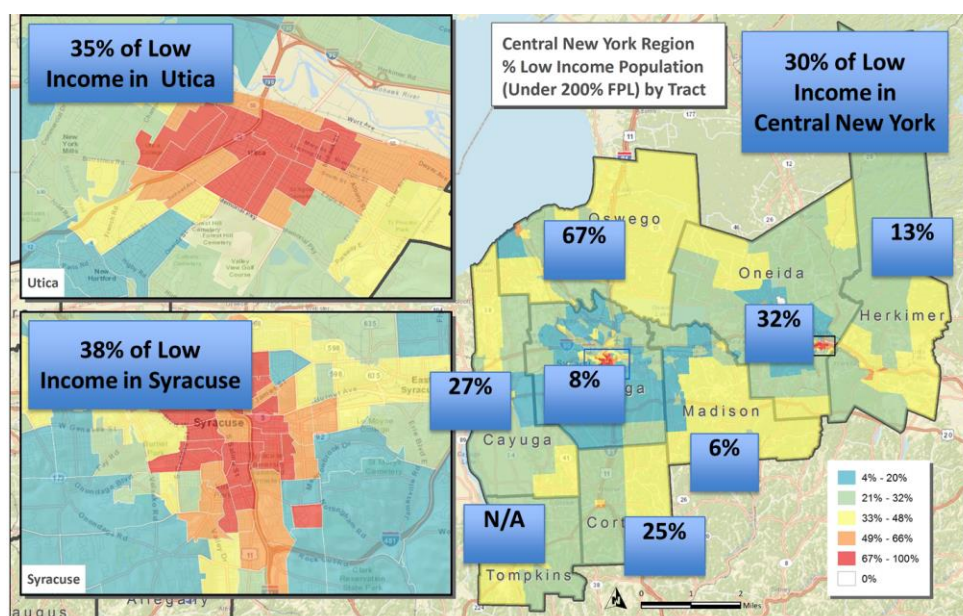

Figure 11 above, indicates how well the core primary care safety net providers in the region penetrate into the eight counties that were part of the Health Foundation of Western and Central New York's

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[14] http://www.hfwcny.org/Tools/BroadCaster/Upload/Project416/Docs/CNY_FINAL_Report_HFWCNY_2_26_2014_ __Final.pdf

primary care safety net assessment. It should be noted that all 6 of the counties that are part of the CNYCC service were included in the safety net assessment. Specifically, the low income penetration rate indicates the percentage of the low income population[15] in a region that is served by the set of core primary care safety net providers. In this case, the core safety net is defined as the primary care practices that are included in categories one and two, discussed above.

Figure 11 shows that the core elements of the primary care safety net only serve approximately 30% of the low income population in the region. Large proportions of the remaining population either: 1) do not receive regular primary care services; 2) are served by small, independent private practices that typically do not provide comprehensive PCMH-based care; or 3) receive intermittent care in usually in an untimely manner by hospital emergency departments. Oswego County has the highest overall penetration into the low income population, followed by Oneida and Cayuga Counties. The City of Syracuse has relatively high penetration rate on its own but Onondaga County's penetration overall is quite low. Because it is difficult to identify all of the primary care providers that serve the Medicaid population it is hard to fully understand gaps in capacity. However, based on this data, the qualitative information gathered from key informant interviews, and the PQI, PDI, and PPV data gathered from the health status assessment, it is clear that there are dramatic gaps in primary care access throughout the region, particularly for those who live in rural areas.

Table 19: Number of primary care physicians and FTE providers per 100,000 population by county.

County	# Primary Care Physicians	FTE Providers per 100,00 Population
Cayuga	23	28.9
Lewis	16	58.2
Madison	42	58
Oneida	175	74.9
Onondaga	439	94
Oswego	43	35.3
New York State	16,171	109.58
United States	233,892	82.6
Data source: Health Resources Services Administration, Area health Resources Files (AHRF), 2012		

As was discussed in a prior section, the Health Resources Services Administration disseminates data related to primary care capacity in a county-basis through the Area Health Resources Files (AHRF). AHRF is a family of health data resource that is drawn from an extensive county-level database assembled annually from over 50 sources. One of the sets of measures that are part of this resource is a

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[15] Low income is defined as those living in households earning less than 200% of the federal poverty level (FPL)

compilation of ambulatory care capacity measures that reports on the number of physicians per 100,000 populations by physician-type, including primary care. Reviewing this data shows that in each of the six counties that are part of the CNY Care Collaborative, the number of full-time-equivalent primary care providers per 100,000 populations is lower than the New York State overall figure. Table 19 above shows the rates for each county. In some cases this rate is as much as one fourth of the State rate.

Finally, it is important to note here that one of the most consistent comments from the CNA's key informant interviews were the shortages of primary care resources in their areas and the barriers to access that were experienced by the low income Medicaid insured and uninsured residents. The lack of primary care providers is further evidenced by the large number of Health Professional Shortage Area (HPSA) designations, of which there are many in the CNYCC' service area. Various areas of Cayuga, Cortland, Madison, Oneida (especially Utica), and Onondaga (especially Syracuse) are designated primary care HPSAs.[16]

Following is a discussion of the common themes with respect to the primary care system and its structure and capacity.

Considerable growth in Federally Qualified Health Center (FQHC) Capacity. Typically, safety-net systems are bolstered by a set of core primary care providers that are formally or informally mandated to serve low-income Medicaid-insured, underinsured, or uninsured populations. These organizations are often heavily subsidized through grants and enhanced provider payments so that they can tailor their operations to low-income populations, provide a range of enabling and supportive services, and provide uncompensated care to the uninsured. Throughout the United States, FQHCs are often at the heart of these safety-nets and this is certainly true in the central New York region.

In 2007, there were five FQHCs in the region that served 63,795 patients. In 2007, these FQHCs served approximately 19% of all low-income residents in the region. In 2007, the majority of the region's FQHC

Figure 12: Growth of FQHCs Capacity in Central New York

Impact and Growth of FQHCs in the Region 2007-2012
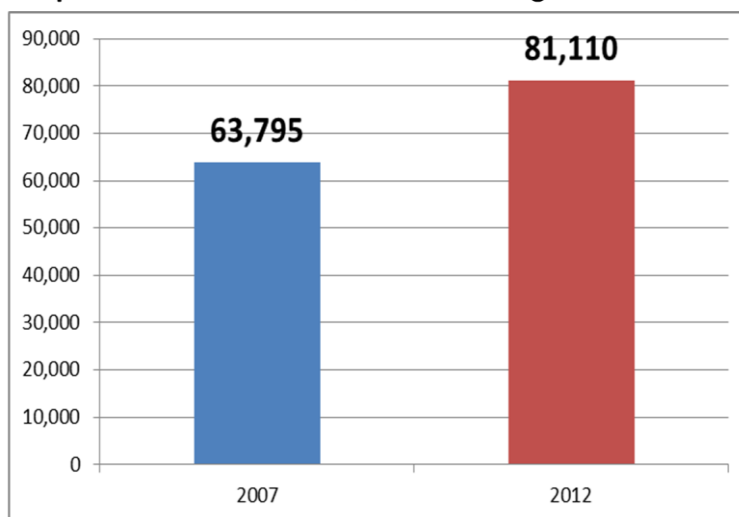
Source: Uniform Data System Data from the Health Resources Services Administration, Bureau of Primary Health Care. 2013 Data.

capacity served residents of Syracuse. Specifically, approximately 56% of all the region's FQHC patients were served by Syracuse Community Health Center.

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[16] Designated HPSAs can be found at: http://hpsafind.hrsa.gov/HPSASearch.aspx

Since 2007, two new FQHC grantees were funded, bringing the total number of FQHC grantees in the region to seven. In addition to the new sites, there was some growth among the existing FQHCs. All told, the region's FQHCs served a total of 81,110 patients in 2012, representing a 27% increase since 2007. Moreover, these FQHC sites served 23% of the low-income population living in households earning < 200% of the federal poverty level, which represents a 17% increase in low-income penetration since 2007.

Substantial and growing impact of private, hospital-based, or independent community-based primary care practices. Private, hospital-based and independent, community-based primary care practices have always played a role in safety-net systems in the United States, particularly in rural areas with low population density. In rural areas, it is not efficient to establish safety-net clinics like FQHCs because the volume of patients is not high enough due to low population densities. It tends to be more efficient to support rural community hospitals to fill this role, which is what the federal government has done through the Critical Access Hospital network. In Central New York, these hospital-based providers play an even larger role than is typical, in both rural and urban areas. With the rollout of ACA, it is likely that these providers will increase their involvement in primary care safety-nets as they take strategic steps to serve those who are newly insured through ACA and take advantage of emerging service delivery and payment reforms.

A review of the data that JSI collected from the leading primary care safety-net providers on behalf of the Health Foundation of Western and Central New York, shows that there are approximately 33 hospital-based or independent, private primary care practice organizations that provide a substantial amount of services to low-income residents in the region. Based on our survey, these providers served an estimated 158,426 patients in 2012. This represents 50% of the total patients served by all of the core practices identified by the assessment. The hospital-based practices located in Onondaga County (8) and Oneida County (17) collectively served approximately 43% (139,340) of the total number of patients surveyed by JSI.

Active and growing group of free clinics. Free clinics in Central New York, with locations in Onondaga and Madison, have become an important part of the primary care safety-net. Each operates independently, and most are faith-based in origin and funding source. These clinics are staffed by volunteers who provide care to people without insurance. They provide comprehensive services and referrals to specialty services such as oral and behavioral health, to the most-vulnerable populations. All of the clinics noted that they struggle to link with providers who accept Medicaid-insured patients after a patient is enrolled in Medicaid. Only Christian Health Services bills for Medicaid, but most offer insurance-enrollment assistance.

Substantial unmet need in low-income population. There has been considerable growth in primary care capacity in Central New York over the past 5 years. This is largely due to the growth of FQHC practices as well as the hospital-affiliated practices in Syracuse, Oswego County, and Utica. The quantitative and qualitative data captured during this assessment shows that every county in the region has a solid core of providers and stakeholders that are increasing the safety-net capacity and promoting primary care engagement among those most at-risk.

What is also clear, however, is that despite the substantial efforts of a group of core safety-net providers, there is still substantial unmet need among the low-income population and very limited capacity in many of Central New York's communities. This is especially true with respect to those who are uninsured. A portion of this unmet need is associated with the lack of primary care capacity and/or inefficiencies in primary care operations. However, a large portion is also associated with a lack of primary care engagement and a lack of consumer awareness about the importance of regular primary care, chronic disease management, and prevention. What practice sites are finding is that the expansion of capacity does guarantee that people will take advantage of it, even if the penetration rate is relatively low.

Establishing a figure that reliably estimates unmet primary care need is extremely challenging. This assessment was able to determine the number of patients served by the core of the region's safety-net. But what the assessment could not estimate is the number of low-income patients who are served by private, independent, or hospital-based primary care practice sites. Individually they serve only a small number of Medicaid-insured and uninsured patients but collectively may have a considerable impact. The assessment is also unable to estimate the number of low-income individuals who do not and will not access care regardless of whether there is capacity.

Based on data compiled by JSI for the HFWCNY primary care assessment, 18 core provider organizations in Central New York comprise the core of the region's safety-net. These provider organizations operate 59 practice sites and serve and estimated 314,668 patients, of whom 114,245 are uninsured or Medicaid-insured patients.
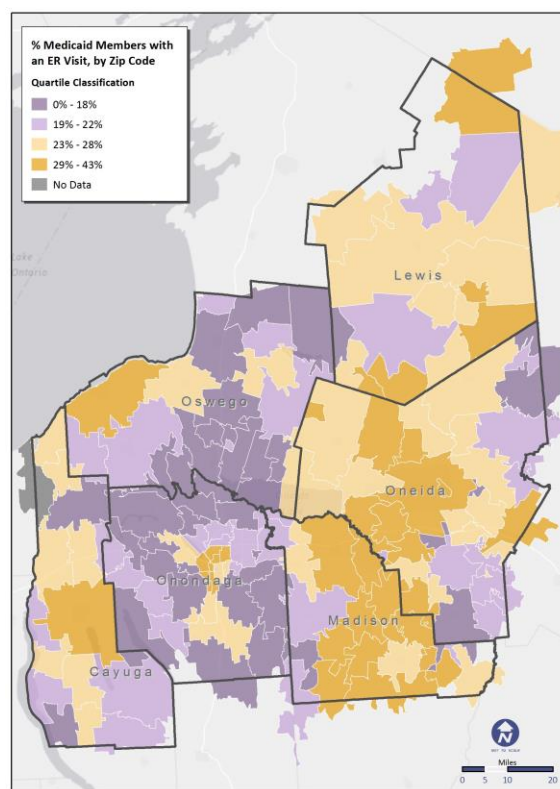
JSI's assessment of demand showed that there are 360,806 low-income residents living below 200% FPL, which means that the leading safety-net providers in the region serve approximately 31% of the total low-income, Medicaid-insured population in the region. This calculation is based on the fact that the core safety-net providers surveyed serve 114,245 Medicaid-insured or uninsured patients.[17] The corollary to this figure is that 69% of the population is either not engaged in regular primary care, receives primary care at a hospital emergency department, or receives care from a provider outside the JSI's list of core providers. Surely a portion of the remaining 69% of the population is able to secure high-quality, timely primary care from practice sites that are

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[17] This figure does not include the older adult, low-income, Medicare-insured population, who likely makes up a significant portion of these providers patient populations.

outside the list of leading providers. However, it is also clear that a large portion is receiving untimely episodic primary care from care providers who are not part of the safety-net and are not providing PCMH-driven care.

Over-utilization of hospital emergency departments (EDs). As alluded to above in the review of hospital emergency department data, there are large proportions of the population that rely on the emergency department for their primary care, either because they: 1) have no other source of primary care and as a result are forced to use the ED; 2) use the ED as their first choice of care rather than regular, comprehensive primary care; or 3) have difficulty accessing primary care during normal business hours and must resort to the ED's 24-hour availability.

A review of the consumer survey data that was included as part of the CNA showed that 39% of adults and 44% of children surveyed went to a hospital emergency department at least once in the past 12 months, and 14% of adults and 17% of children went to the emergency department two or more times during this period. Further analysis shows that only approximately 56% adults and only 34% of children surveyed were seen in the ED for a medical emergency. The remaining visits were because those surveyed did not have a primary care provider, could not been seen by their regular primary care provider due lack of capacity or after-hours care, or were instructed by their provider to go to the ED (9% of adults).

Data cited above in the health status section on Potentially Preventable Visits (ED), and rates of hospital ED use reinforces this. In rural areas in the northern portion of Central New York in counties such as Lewis, as well as eastern counties such as Oneida, upwards of 30-40% of residents have had a at least one visit to a hospital emergency department in the past 12 months.

It should also be noted that the CNA's key informant interviews indicated substantial barriers to care related to no after-hours or weekend care, limited public transportation, long wait-times, lack of timely scheduling in primary care practice sites, practice sites that do not take Medicaid insurance, and administrative barriers to Medicaid enrollment. As a result, a large number of the families in the region have learned over time to rely on the region's hospital EDs as their usual source of care and do not, in any real sense, have a "medical home."[18]

Lack of consumer engagement. Another important factor related to unmet need and insufficient primary care access is the lack of primary care engagement. A certain portion of unmet need is more closely associated with a lack of consumer awareness about the importance of regular primary care, chronic disease management, and preventive services than it is about a lack of actual primary care capacity. This was a common theme in JSI interviews and site visits. Practice sites often said that while there is absolutely unmet need and a lack of primary care capacity in nearly all of their communities, they often struggle to engage their patients and their target populations in appropriate primary care

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[18] This report is using the Commonwealth Fund's definition of medical home defined as: a regular doctor or source of care, easy access to the provider by telephone, easy access to health advice on evenings and weekends or whenever the provider is closed, and visits with the provider that occur conveniently for patients, are on time and are efficient

services. Many providers are keenly aware that even if they increase capacity or develop new sites, there will be a lag in service until they promote primary care engagement effectively.

In this regard, there needs to be a greater focus on prevention, health promotion, community health education, emergency room diversion, and greater efforts to identify and engage those who are not accessing primary care. This is particularly important for people with chronic disease and/or other health related conditions (mental health, substance abuse, hospital discharge, etc.) as well as certain demographic (children, frail elders, single-parent mothers, etc.) and socio-economic (low-income, public housing residents, WIC recipients, etc.) segments of the population. In addition to exploring how to increase primary care capacity, safety-net organizations need to focus on outreach, primary care engagement, and the implementation of population-based efforts that are data driven and promote appropriate utilization. Practice sites need to be savvier in using their own electronic health records, other managed care data, or hospital partner data to identify and reach out to those who are not engaged in care. Once they get a patient in the door, they have to offer patients convenient hours, ensure quality customer service on the phone and in person, and build strong relationships so patients choose them as their preferred provider for both preventive and acute needs.

Summary Description of Primary Care Internal Operational Strengths and Weaknesses

The CNA through its key informant interviews and other data sources gathered a significant amount of information regarding the operational capacity of the region's primary care safety net. The following is a summary of the strengths and weaknesses from the information collected.

Table 20: Primary Care Internal Operations: Strengths and Weaknesses

	Strengths	Weaknesses
Outreach, Eligibility/ Enrollment, and Primary Care Engagement	• FQHCs and other core safety-net providers are conducting extensive outreach, insurance eligibility screening, and insurance enrollment efforts. • In some cases, these efforts are being accomplished with outreach workers who are going to underserved communities and/or working with other community partners.	• Need for greater outreach, insurance eligibility screening, and enrollment efforts particularly among non-FQHC providers. • Lack of primary care engagement, particularly for people with chronic illness or with risk-factors. • Lack of emergency department diversion programs that promote engagement in more appropriate primary care.
Patient-Centered Medical Home	• Most of the core primary care FQHC and hospital-based safety-net practices have embraced PCMH principles to a large extent, such as: o Implementation of EHR o Tracking of quality indicators o Implementation of quality systems o Case and care management services o External referral systems	• Need to invest resources to bridge gap between theory and practice and promote the full implementation and practice of PCMH principles, such as: o Population-based panel management of preventive services and chronic disease o Provider communication o Information transfer between specialists
Utilization of Interdisciplinary Teams	• Many core safety net provides have developed specialty care and mental health integration models that co-locate providers in the primary care setting or that expedite referrals to other local providers. • Some level of case and care management services is provided at most safety-net practice sites. • Appointment reminder calls and specialty care referral scheduling systems exist in most core safety net providers.	• Team-based approaches to providing primary care that involve physicians as well as nurse practitioners, physician assistants, and other mid-level providers have shown to be very effective and efficient, yet there is limited evidence of these models being applied in the region.
Health Information Technology (HIT) and Quality Improvement	• Most safety-net practices are using robust electronic medical record systems. • Most are tracking quality indicators and many have applied quality improvement protocols.	• Most practice sites lack the time, resources, and understanding to train providers to fully use their medical record systems to identify those at-risk, manage follow-up, communicate with other providers, and coordinate care.
Administrative Operations and Procedures		• One of the most significant barriers to safety-net growth is primary care provider recruitment, especially in rural areas. • Many practices struggle with coding, billing, and other financial procedures.

Patient-Centered Medical Home accreditation and quality

Patient-Centered Medical Home Accreditation

Patient-Centered Medical Home (PCMH) transformation requires attention to a range of factors that dramatically impact the quality, efficiency, safety, and effectiveness of care. Specifically, PCMH requires attention to clinical protocols, patient/provider workflows, scheduling systems, staffing approaches, how care teams are structured, among many other factors. PCMH also mandates that practice sites develop a robust quality improvement infrastructure that is used to guide quality and performance improvement. As such, the extent to which a system commits to and is able to transform its primary care practice network by accrediting practice sites as PCMH practices is an important indicator of quality. There is certainly room for improvement and growth but there are a large number of practice sites in the CNYCC' service area that have achieved PCMH accreditation. In fact, in the 6 counties that make up the CNY Care Collaboratives service area there are 215 PCMH providers (Table 21). Information on Level 3 PCMHs specifically was not available.

Table 21. Number of NCQA-Certified PCMH Providers by County

County	# PCMHC Providers, September 2012
Cayuga	7
Lewis	20
Madison	4
Oneida	16
Onondaga	151
Oswego	17
Total	215
Source: "The Evolution of Patient-Centered Medical Homes in New York State: Current Status and Trends as of September 2012." United Hospital Fund. 2012. page 38. http://www.chhs.ca.gov/PRI/Burke-PCMH%20in%20NYS%20-%20Status%20and%20Trajectory%20-%202012.pdf	

Healthcare Effectiveness Data and Information Set. Another important measure of quality is the Healthcare Effectiveness Data and Information Set (HEDIS). HEDIS is a tool used by more than 90 percent of America's health plans to measure performance on important dimensions of care and service. While HEDIS is not strictly a tool to measure quality of primary care services, most of the measures are either directly or indirectly related to the level of quality of services in the primary care setting. Altogether, HEDIS consists of 81 measures across 5 domains of care. Because so many plans collect HEDIS data, and because the measures are so specifically defined, HEDIS makes it possible to compare the performance of health plans and service delivery performance on an "apples-to-apples" basis.

According to HEDIS data drawn from the revised DSRIP Clinical Process of Quality Measures Chartbooks, 42% (30 out of 70) of the indicators across all 16 HEDIS metrics and across all six of the CNYCC counties were worse off compared to the upstate rates (see Table 22). This calculation excludes the data points

where the data is unreportable due to the number of recipients included in the metric being less than 30.

Table 22: HEDIS Measures from DSRIP Clinical Process of Quality Measures Chartbooks

	Cayuga	Lewis	Madison	Oneida	Onondaga	Oswego	Upstate New York	New York State
A. Behavioral Health								
Adherence to Antipsychotic Medications for People Living with Schizophrenia	76	U	U	60*	50*	62*	**65**	63
Antidepressant Medication Management - Effective Treatment for Acute Phase	57	U	U	46*	45*	49*	**51**	49
Diabetes Monitoring for People with Diabetes and Schizophrenia	U	U	U	75	65*	U	**66**	68
Diabetes Screening for People with Schizophrenia/BPD Who are Using Antipsychotic Med.	78	U	U	74*	84	80	**77**	79
Follow-up after hospitalization for Mental Illness within 30 days	70	58*	68	51*	48*	72	**59**	55
Follow-up care for Children Prescribed ADHD Medications - Initiation Phase	57	U	55	57	53	59	**51**	57
Initiation of Alcohol and Other Drug Dependence Treatment	83	77*	75*	77*	72*	84	**78**	78
C. Diabetes Mellitus								
Comprehensive Diabetes Care HbA1c Testing	78	85	74*	81	76	78	**76**	80
E. HIV/AIDS								
Cervical Cancer Screening	66	59*	64	73	66	66	**63**	67
Chlamydia Screening Among Young Women	54*	38*	57*	65	68	28*	**58**	66
Comprehensive Care for People Living with HIV or AIDS - Engagement in Care	U	NA	U	91	93	U	**90**	89
Comprehensive Care for People Living with HIV or AIDS - Syphilis Screening	U	NA	U	69	56*	U	**59**	69
Comprehensive Care for People Living with HIV or AIDS - Viral Load Monitoring	U	NA	U	60	70	U	**64**	66
F. Perinatal Care								
Well-Child Visits in the First 15 Months of Life	88	83*	87	92	89	83*	**87**	85
Breast Cancer Screening Among Women	50*	49*	54*	64	61	55	**55**	63
Colorectal Cancer Screening	36*	39*	43	45	39*	40*	**41**	49
(*) Worse than upstate value (U) Unreportable due to number of recipients in these data being <30 (NA) Data not available Data Source: Revised DSRIP Clinical Process of Quality Measures Chartbooks								

Uniform Data System Clinical Measures of FQHCs

Another measure of quality is how well the region's FQHCs perform with respect to their standard set of clinical measures that are reported on their annual FQHC Uniform Data System (UDS) report. All FQHCs are required to track and report approximately 15 clinical measures drawn from the Centers for

Medicare and Medicaid Services (CMS) list of Meaningful Use measures. These measures track measures related to maternal and child health, preventive services, and chronic disease management. Overall, the FQHCs in Central New York fared better than the State averages. Table 23 provides specific detail on how well the FQHCs fared against New York State averages across a selection of relevant clinical measures that are part of the FQHCs UDS Report.

Table 23: Federal Qualified Health Center (FQHC), Uniform Data System (UDS), Selected Clinical Measure Rates for each of the FQHCs in the CNY Service Area – 2013

Categories	Syracuse CHC	Northern Oswego Community Health Services	East Hill Family Medical, Inc.	Finger Lakes Migrant Health Project	Family Health Network of CNY	Rochester Primary Care Network	North Country Family Health Center	United Cerebral Palsy Association	All NY Health Centers	All National Health Centers
Dental Services Provided	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Hypertension	25.0%	21.0%	24.8%	9.7%	23.1%	21.2%	29.6%	31.3%	19.5%	23.6%
Diabetes	9.1%	22.0%	13.4%	5.6%	10.0%	10.2%	16.0%	16.9%	10.0%	12.6%
Asthma	9.7%	9.0%	3.9%	2.5%	5.0%	6.6%	12.7%	6.9%	8.3%	5.9%
HIV	0.3%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	1.3%	0.6%
Prenatal Patients	1042	n/a	7	n/a	155	1560	n/a	n/a	38,935	494,869
Prenatal patients who delivered	526	n/a	1	n/a	93	994	n/a	n/a	21,065	263,927
Access to Prenatal Care (First Prenatal Visit in 1st Trimester)	80.3%	n/a	14.3%	n/a	93.5%	70.3%	n/a	n/a	77%	72%
Low Birth Weight	7.3%	n/a	n/a	n/a	4.3%	8.8%	n/a	n/a	6.7%	7.3%
Cervical Cancer Screening	71.4%	30.0%	78.6%	33.7%	47.4%	61.5%	78.6%	51.3%	61.8%	57.8%
Adolescent Weight Screening and Follow Up	87.1%	49.7%	34.3%	53.0%	63.9%	82.6%	52.9%	3.0%	55.7%	51.8%
Adult Weight Screening and Follow Up	31.4%	24.6%	91.4%	43.5%	33.2%	44.5%	50.0%	31.7%	53.3%	53.3%
Tobacco Use Screening	100.0%	94.0%	92.9%	70.9%	89.0%	95.3%	100.0%	97.9%	90.4%	91.5%
Tobacco Cessation Counseling for Tobacco Users	100.0%	30.6%	62.9%	81.3%	88.4%	57.7%	91.8%	61.9%	68.6%	63.7%
Colorectal Cancer Screening	57.1%	25.7%	40.0%	24.5%	40.7%	13.7%	40.0%	32.0%	35.6%	32.6%
Childhood Immunization	91.4%	47.1%	84.3%	72.0%	43.2%	84.0%	87.1%	63.6%	76.2%	76.4%

Behavioral health services

Summary Description of Available Resources and Resource Capacity

According to the New York Office of Mental Health[19] there are 280 providers of mental and behavioral health services in the CNYCC service area. This includes 13 inpatient mental health programs, 35 outpatient mental health programs, 9 emergency mental health programs, 59 residential mental health programs, and 164 supportive mental health programs. Support programs include care coordination, vocation, forensics, general support, self-help, and education services. Appendix B includes tables with inpatient, outpatient, emergency, and residential mental health programs. These resources were compiled through data provided by the CNA's key informants, from lists provided by the CNYCC's major partners, and through resources provided by the New York State DOH website.[20]

The breadth of expertise that exists across the region seems considerable even in the more rural areas of the region. Forty-four of the 173 organizations that responded to the CNA's PPS Partner Survey stated that they provided behavioral health services. Across these forty-four organizations, 56% reported expertise with homeless populations, 66% with women, infants, and children, 52% with children with special health care needs, 9% with migrant/seasonal farm workers, 30% with refugees, and 66% with uninsured populations. These organizations also serve large proportions of Medicaid insured patients/consumers. In fact, most of the organizations surveyed (30 out of 44) reported having a patient/consumer population that was made up of at least 50% Medicaid beneficiaries. For 14 facilities, Medicaid beneficiaries constituted 75% of the patient population.

Table 24. Number of FTE Psychiatrists per 100,000 Population

County	Psychiatrists	
	#	Rate
Cayuga	1	1.3
Lewis	0	0
Madison	5	6.9
Oneida	28	12.0
Onondaga	71	15.2
Oswego	1	0.8
NY State	3,586	18.3
USA	29,521	9.4
*Rate per 100,000 population Data source: AHRF 2012		

These organizations were well distributed throughout the region but quantitative and qualitative findings from the CNA strongly indicate that there are major shortages and capacity gaps with respect to

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[19] Mental health programs in the state are available at: http://bi.omh.ny.gov/bridges/directory?region=&prog_selection=

[20] Mental health programs in the state are available at: http://bi.omh.ny.gov/bridges/directory?region=&prog_selection=

behavioral health care services, particularly for those with substance abuse issues and those with severe mental illness. It is fair to say that the leading finding from our key informant interviews was the dramatic impact of behavioral health issues on Central New York's population and the burden that this has on its health, social service, and public health providers. Morbidity and mortality rates are high, services are limited, and the lack of community supports including case management, housing, and transportation present major barriers to care.

The Health Resources Services Administration Health Resources files also compile data on the number of psychiatrists per 100,000 population, which strongly corroborates the perceptions of our key informants. A review of this data shows that in each of the six counties the number of full-time-equivalent psychiatrists per 100,000 population is dramatically lower than the New York State overall figure. Table 24 shows the rates for each county. In some cases this rate is a small fraction of the overall New York State rate.

Care coordination is somewhat common across behavioral health providers. Twenty eight of the 44 organizations surveyed reported that they have care coordination or case management services. However, key informant interviews highlighted the fact that care is extremely fragmented for those with behavioral health issues. This is largely due to the fact that the service systems for medical and behavioral health are distinct and very silo-ed. It is extremely difficult to navigate the administrative, billing, and funding landscape when it comes to operating and coordinating care, particularly for those with co-morbid medical and behavioral health issues.

Dental services

Summary Description of Available Resources and Resource Capacity

According to the New York State Department of Health list of Article 28 Dental Health Facilities, there are 14 organizations that provide dental services at 18 distinct sites across the CNYCC Service area. These 16 organizations include: Bassett Health Care Dental Department; Community Memorial Hospital; East Hill; Faxton-St Luke's Healthcare; Finger Lakes Migrant Health; Loretto Geriatric Center; Pulaski Health Center Dental; Sitrin Dental Clinic; Sitrin Medical Rehab Center; St Joseph's Hospital Health Center; Syracuse Community Health Center Inc.; UCP of Utica Area; and University Hospital SUNY Health Science.

Many key informants identified a shortage of dental care as a challenge in the community. This lack of primary care providers is evidenced by Health Professional Shortage Area (HPSA) designations, of which there are many in the CNYCC service area. Designated dental HPSAs in the region include the entire county of Lewis, and individuals eligible for Medicaid in Oswego County, the tribal population of the Oneida Nation in Madison County, and the City of Syracuse in Onondaga.[21]

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[21] Designated HPSAs can be found at: http://hpsafind.hrsa.gov/HPSASearch.aspx

Table 25. Number of FTE Dentists per 100,000 Population -2012

County	Dentists	
	#	Rate
Cayuga	30	37.5
Lewis	5	18.5
Madison	23	31.3
Oneida	127	54.1
Onondaga	338	72.4
Oswego	28	22.9
NY State	14,035	72.4
USA	183,286	59.4
*Rate per 100,000 population		
Data source: AHRF 2012		

Once again, according to the Health Resources Services Administration, Health Resources Files, only Onondaga County has a dental provider to population rate that is higher than the State average. In most counties the rate is less than or equal to one-half of the State average. Table 25 shows the rates for each county.

Twenty-two of the 173 organizations that responded to the CNA's survey reported providing dental services. Dental providers were among the least represented among survey respondents. This fact supported a common theme among key informant interviews, that there is a significant shortage of dental providers, especially providers that take Medicaid, in the region.

Post-acute and long-term care services

Summary Description of Available Resources and Resource Capacity

Nursing Homes. According to data available from the New York State DOH, there are 45 nursing homes in the CNYCC service area.[22] A listing of these nursing home facilities by County is included in Appendix B. All of the 45 nursing homes that have 2012 data available from the Nursing Home Quality Initiative[23] are certified by both Medicare and Medicaid. Across these sites, there are 7,279 beds (approximately 160 beds per site) and an average self-reported occupancy rate of 94%. The lowest occupancy reported was 71% of beds. [24]

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[22] A directory of nursing homes, by county, is available at: http://nursinghomes.nyhealth.gov/searches/region

[23] Nursing Home Quality Initiative Data is available at: https://health.data.ny.gov/Health/Nursing-Home-Quality-Initiative-Beginning-2012/aruj-fgbm

[24] Nursing Home Quality Initiative Data is available at: https://health.data.ny.gov/Health/Nursing-Home-Quality-Initiative-Beginning-2012/aruj-fgbm

According to the NYS DOH, there will be a need for 6,435 residential health care facility (RHCF) beds in 2016.[25] Currently, there are 7,279 beds across the CNYCC service area, which means that there is a surplus of 844 nursing home beds. Overall, this is not dramatic surplus but the reality is that the beds are not well distributed, which means that some communities experience a large surplus, while others experience a shortage. The more urbanized areas in Oneida County (Utica) and Onondaga County (Syracuse) face large surpluses of beds compared to 2016 need, while Lewis, Madison, and Oswego have significant unmet need. As the "baby boomers" age over the next 10-15 years the proportion of older adults will increase and the gaps in long-term care that are experienced in some of the more rural areas will increase and become more problematic.

Health Homes. The Affordable Care Act created an optional Medicaid State Plan benefit for states to create Health Homes. Health Homes are designed to coordinate care for Medicaid beneficiaries with two or more chronic conditions, or one chronic condition and a risk of another condition, or one serious and persistent mental health condition. There are three designated Health Homes in the CNYCC region: Central New York Health Home Network (CNYHHN), Inc., Onondaga Case Management Services Inc., and St. Joseph's Hospital Health Center. These three Health Homes networks cover all counties in the CNYCC service area, except for St. Lawrence County.[26]

Medicaid Health Homes in CNYCC region	Health Home Service Area (Among CNYCC Counties)
CNYHHN (Central New York Health Home Network)	Cayuga, Lewis, Madison, Oneida
Onondaga Case Management Services Inc.	Cayuga, Madison, Onondaga, Oswego
St. Joseph's Hospital Health Center	Cayuga, Lewis, Madison, Onondaga, Oswego

Assisted Living Facilities. In addition to the list of Nursing Homes, the New York State Department of Health also keeps a directory of licensed assisted living programs. There are 12 such programs in the CNYCC service area. These programs include: North Brook Heights Home for Adults; Adirondack Manor HFA D.B.A. Willow Park HFA; Cedarbrook Village, Incorporated; Loretto Utica Center Enriched Housing Program; Presbyterian Residential Community; The Terrace at Woodland; Buckley Landing Enriched Housing Site #6; Loretto EHP #1 Bernardine Apartments; Loretto Village Apts. Enriched Housing Site #5; Manlius Home for Adults; Park Terrace at Radisson; and Sedgwick Heights.

Quality of Care

In terms of quality in the nursing home setting, the average number of deficiencies, according to the last three certification years and last three years of complaint surveys, is 36 with a range of deficiencies

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[25] Estimates of Residential Health Care Facility Need and Capacity is available at:
https://www.health.ny.gov/facilities/nursing/rhcf_bed_need_by_county.htm
[26] Information on Medicaid Health Homes can be found at:
https://www.health.ny.gov/health_care/medicaid/program/medicaid_health_homes/

between 10 and 139. [27] On average, 58% of staff at the nursing homes had a flu vaccine, but this ranged dramatically from 14% to 96% of staff. Among the 43 sites with composite quality scores from 2012, the average score was 53 points out of 100. Six sites were in the top quintile (score of over 90.6 points), while 12, 10, 10, and 5 sites were in the second, third, fourth, and last quintiles respectively. Quintile performance is based on all nursing homes in the state.

Public health and community based resources/services

Summary Description of Available Resources and Resource Capacity

The region's county and municipal public health departments have been active participants in this assessment and are committed to be active as part of the region's DSRIP projects. The public health departments serve many functions from surveillance to assessment and planning to service delivery to screening, health education, and health promotion.

The public health departments are also often the conveners of community health organizations and many of the community health organizations detailed in this assessment already participate in regional community health coalitions. These coalitions are established mechanisms that share information and resources, set priorities, and work to coordinate activities across the spectrum of stakeholders to achieve common goals. In this way, the coalitions of existing organizations are an established resource that can be leveraged to implement DSRIP project goals. There are 8 coalitions in the CNYCC region. This includes Comprehensive Adolescent Pregnancy Prevention Projects, which operates in three separate counties, and Tobacco Free coalitions in Oswego and Onondaga. A list of these existing coalitions, including the service area and contact agency, is provided in Appendix B.

A key goal of the DSRIP program is to identify community-based resources and ensure linkages between health care-focused and community resources. Community resources were identified in the survey. A total of 44 organizations reported that they provide community-based, non-medical services. These organizations have expertise serving homeless (57%); women, infants and children (57%); children with special health care needs (41%); migrants/seasonal farm workers (16%); refugees (20%); the uninsured (68%); and other populations (59%).

Compared to health care organizations, respondent non-medical organizations serve a more urban population, with an average of 43% of clients living in rural areas. On average, non-medical service organizations have a population that is 15% non-White, 4% Hispanic, 27% less than 18 years of age and 57% adult between 18 and 64 years.

The 44 PPS Survey respondent organizations that reported providing non-medical services include organizations that provide food bank services (6), housing (14), refugee assistance (2), transportation (7), advocacy (16), peer support (17), and community health education (15). The organizations include one YMCA, and six health departments not offering medical services. The organizations represent 158

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[27] Nursing Home Quality Initiative Data is available at: https://health.data.ny.gov/Health/Nursing-Home-Quality-Initiative-Beginning-2012/aruj-fgbm

distinct sites that serve an estimated 280,218 patients annually. However, not all of these sites are located in the six counties in the PPS service area; some service sites are located in the original set of eleven counties.

Transportation Service Providers. Across the 44 organizations that provide non-medical services, 37 reported barriers to serving their consumers. Of those 37, 24 (65%) identified transportation as a major barrier to serving low-income consumers. While transportation services are available - seven out of 173 respondent organizations reported providing transportation in the PPS partner survey, including three organizations that provide food bank services, five that offer housing, one YMCA, two health departments, and four advocacy organizations (not mutually exclusive) – it is evident by the agreement across respondents that the current availability of transportation is insufficient. The lack of bus transportation options and limited transportation to rural areas in particular were specifically noted as transportation gaps.

Food Banks. There were 186 organizations identified that provided food bank, community gardens, or farmers market services, including Rescue Mission in Utica, Rescue Mission in Syracuse, Cayuga/Seneca Community Action Agency, Catholic Charities of Onondaga, and Catholic Charities of Oswego. These organizations and many others like them provide key services in urban and rural centers with concentrated poverty. Many of these organizations provide support general to the overall population others have expertise providing services to specific populations such as those with chronic conditions, those of a certain demographic backgrounds, and the homeless, as well as to the uninsured, women, infants, and children, children with special health care needs, individuals with mental health needs, migrants, elderly, and refugees. While these organizations indicated that they offer care coordination services (primarily focused on connecting homeless individuals to housing, jobs, treatment etc.) . Many of the organizations indicated that transportation was a major barrier for their clients that prevent them from being able to provide services to consumers. Many of these organizations also offer transportation services.

In addition to the organizations that completed the PPS Partner Survey, the Food Bank of Central New York is located in Syracuse. Food Bank of Central New York is a non-profit that partners with 252 emergency food programs in Cayuga, Lewis, Madison, Oneida, Onondaga, and Oswego. The Food Bank's initiatives include Food ens, a food buying club designed to help consumers stretch their food dollars, and investments in local farmers, container gardens for low-income individuals, and connecting families to Farmers' Markets to improve access to fresh fruits and vegetables.

Housing. Thirteen organizations that responded to the survey indicated that they provide housing services: Kids Oneida, Rescue Mission in Utica and Syracuse, Cayuga/Seneca Community Action Agency, Herkimer ARC, Syracuse Brick House, d/b/a Syracuse Behavioral Healthcare, Loretto, Oswego County Department of Social Services Division of Mental Hygiene, Catholic Charities of Onondaga County, Catholic Charities of Herkimer County, Central New York Services, Inc., Liberty Resources, Inc., United Helpers / Northern Lights, Catholic Charities Of Oswego. These housing organizations are generally located in urban areas with concentrated poverty and homelessness: Utica, Syracuse, Auburn, Oswego,

Ogdensburg, Rome, Oneida, and Fulton. Their reported service areas also include Cayuga, Madison, Oneida, Onondaga, and Oswego counties.

Thirteen of fourteen organizations have expertise providing services to homeless individuals, and there is also expertise providing services to the uninsured (9), women, infants, and children (9), children with special health care needs (5), individuals with mental health needs (6), refugees (2), migrants (1), and the elderly (1). Six housing providers offer advocacy and six offer peer support, while five offer transportation services. Nine organizations also identified lack of transportation as a primary barrier to providing services. In addition to transportation, the lack of available beds/long waiting lists was a significant barrier to providing services to consumers in need. In addition to the partners that completed the PPS Partner Survey, a number of other housing resources exist, including Housing Authorities in Oneida, Rome, Syracuse, and Utica.

YMCA. There are 14 YMCAs in the CNY PPS region, covering all but Lewis County. None of the YMCAs in the PPS service area completed the PPS Partner Survey (there was one YMCA respondent from outside the service area). Services and programs offered by the YMCAs are available publically on their websites. Some of the services offered by YMCAs in the region include: domestic and sexual violence crisis services, emergency transitional housing for domestic violence victims, housing and support for runaway and homeless girls, violence prevention education (YWCA Mohawk Valley), flu shots (Auburn), child care (Auburn, YMCA of the Greater Tri-Valley), academic support, SAT/ACT preparation classes, tutoring, leadership development, health screenings, diabetes prevention services (Greater Syracuse), and women empowerment activities (YWCA of Syracuse and Onondaga), among many other services.

Summary of Resources Available Across the Region

Table 26 provides a summary of the resources available at the regional level, based on publically available data.

Table 26. Summary of Regionally Available Resources

Type of service	Known resources available in the region	Known gaps in resources
Hospitals	13 hospitals including (2,827 beds total) 6 community hospitals (688 beds) 4 regional medical centers (2002 beds) 4 hospitals with 187 psychiatric beds 1 Veterans Admin. hospital with 106 beds	
Outpatient primary care	8 Federally Qualified Health Center organizations 215 NCQA-certified PCMHs 96 hospital-based/extension clinics 37 Diagnostic and treatment centers	HPSA designations: Low income Individuals eligible for Medicaid in various areas of Cayuga, Madison, Oneida (Utica), and Onondaga (Syracuse)
Behavioral health	280 Mental/behavioral health programs including 13 inpatient 35 outpatient 9 emergency 59 residential 164 supportive (e.g., care coordination, vocation, self-help, and education)	HPSA designations: - Entire counties of Lewis, Madison, and Oswego - Individuals eligible for Medicaid in Oneida - Tribal population Oneida Nation in Madison County
Dental	14 Article 28 dental organizations (18 sites)	HPSA designations: - Entire county of Lewis - Low income pops. in Oswego County - Tribal population Oneida Nation in Madison County - Syracuse city in Onondaga
Long-term care	45 Nursing Homes 12 Licensed assisted living programs	Residential health care facility need in 2016: 6,435. There is a surplus of 844 beds compared to expected need of 7,279 beds. But distribution is uneven and there are shortages in more rural areas. Gaps expected by 2020 as "Baby Boomers" age.
Non-medical services	8 community coalitions 6 CAAs 5 ARCs 14 YMCAs	

IV. SUMMARY AND PRIORITIZATION OF CNA FINDINGS

The following table provides a summary of all CNA findings drawn from the quantitative and qualitative data discussed above. Furthermore, the findings have been prioritized with respect to those that have the greatest impact on inappropraite hospital utilization, health status, and overall well-being.

Table 27. Summary and prioritization of CNA findings			
Community Need ID Number	**Community Need**	**Brief Description**	**Primary Data Sources**
1	Widespread poverty across the CNYCC region	Five of six included counties have poverty rates (% less than 100% FPL) greater than the Upstate NY average. All six have higher proportion of population <200% FPL than Upstate NY.	• US Bureau of Census, American Community Survey, 5-year averages, 2008-2012 • 2013 Central New York Consumer Access Survey • Key informant interviews, community meetings, and focus groups
2	Widespread poor lifestyle behaviors that contribute to chronic disease	Between a 32% and 41% of children are overweight or obese. Among adults, obesity rates are higher than the Upstate NY average in five of six counties. Inadequate consumption of fruits and vegetables and sedentary behavior is more prevalent in five of six counties than the Upstate NY average.	• Expanded BRFSS July 2008 - June 2009; BRFSS County-Specific Prevention Agenda Reports • Key informant interviews, community meetings, and focus groups
3	Need for health education and awareness activities for all segment of the low income target population	High rates of obesity, tobacco use, poor nutrition, limited physical activity, risky drinking, and other risk factors lead to chronic illness and are evidence of the need for health education and awareness campaigns across sectors	• Expanded BRFSS July 2008 - June 2009; BRFSS County-Specific Prevention Agenda Reports • Key informant interviews, community meetings, and focus groups
4	Health literacy, language and cultural barriers are a major barrier for some foreign born and recent immigrants	Health literacy is a major barrier for large proportions of the population, particularly for low income foreign born and recent immigrants/refugees. This issues impact individuals and families ability to access services and navigate the system as well as patient's ability to communicate with their providers.	• Key informant interviews, community meetings, and focus groups
5	Lack of transportation	Public transportation only exists in urban areas, where the majority of resources are. Rural counties lack transportation options. Public transportation that does exist in urban areas is limited. Lack of transportation makes is difficult to access preventive and routine health services, to follow through on discharge, obtain medications, among other challenges.	• 2013 Central New York Consumer Access Survey • Key informant interviews, listening sessions, focus groups with consumers

Table 27. Summary and prioritization of CNA findings

Community Need ID Number	Community Need	Brief Description	Primary Data Sources
6	Lack of consumer engagement	Primary care sites struggle to engage consumers, even in areas with unmet need	• 2013 Primary Care Safety Net Assessment funded by the Health Foundation of Western and Central New York • 2013 Central New York Consumer Access Survey • Key informant interviews, community meetings, and focus groups
7	Significant primary care provider shortages	There are a large number of primary care Health Professional Shortage Area and Medically Underserved Areas (HPSA/MUAs) designated in the CNYCC, including entire counties. Key informants reiterated this finding of shortages of PCPs. Additionally, for primary care providers that do exist there is a substantial strain on resources – a fact that was noted by FQHC survey respondents to the CNYCC Partner Organizational Survey. All six counties have a much lower rate of FTE primary care providers per 100,000 compared to the state.	• 2013 Primary Care Safety Net Assessment funded by the Health Foundation of Western and Central New York • HPSA/MUA designations from HRSA, Key informant interviews, PPS Partner Survey, Health Resources Services Administration, Area health Resources Files (AHRF), 2012
		There are 8 FQHCs in the region, operating a robust, well-distributed network of sites. However, penetration into the low-income areas remains low in Cayuga and Madison. There were 215 PCMH organizations in the CNYCC region, with approximately 70% of those being in Onondaga County.	• UDS Mapper • 2013 Primary Care Safety Net Assessment funded by the Health Foundation of Western and Central New York • "The Evolution of Patient-Centered Medical Homes in New York State: Current Status and Trends as of September 2012." United Hospital Fund. 2012.
8	Mental health provider shortages	There are a large number of primary care and mental health HPSA/MUAs designated in the CNYCC, including entire counties. Key informants also highlighted the lack of behavioral and mental providers. All six counties had a lower rate of psychiatrists per 100,000 compared to the state.	• HPSA/MUA /Populations designations from HRSA, Key informant interviews; AHRF 2012

Table 27. Summary and prioritization of CNA findings

Community Need ID Number	Community Need	Brief Description	Primary Data Sources
9	Lack of care management capacity	High rates of chronic medical and behavioral conditions, limited engagement in primary care, high rates of inappropriate utilizations, and high rates of behavior risk factors are evidence of the need for expanded and strengthened care management issues	• Expanded BRFSS July 2008 - June 2009 • PPR, PQI and PPV Data from NYS DOH • Key informant interviews, community meetings, and focus groups • Medicaid Beneficiary Chronic Health Conditions, Inpatient and Emergency Room Utilization (Accessed from Health Data NY) • 2013 Primary Care Safety Net Assessment funded by the Health Foundation of Western and Central New York
10	Poor care transitions, lack of coordination, and fragmentation of services	Informants consistently noted that there is a lack of communication between providers, resulting in poor transitions of care after patients have been discharged from the hospital.	• PPR, PQI and PPV Data from NYS DOH • Key informant interviews, community meetings, and focus groups
11	Chronic diseases are leading causes of premature death	In all included counties, cancer and heart disease are the first and second leading causes of death, respectively. Unintentional injury, chronic lower respiratory disease, diabetes, suicide, and stroke are also in the top five, although there is variation across counties.	• NYS Department of Health, Leading Causes of Premature Death (Death before age 75), 2010-2012 • Key informant interviews, community meetings, and focus groups
12	Poor mental health across the region leading to high utilization of hospital and ED services	All six counties had a higher proportion of adults with heavy drinking in the past month than the state. Four counties had a higher proportion of adults with poor mental health reported in the prior month. Oswego is a hot spot for mental health issues.	• Expanded BRFSS July 2008 - June 2009; BRFSS County-Specific Prevention Agenda Reports • 2013 Central New York Consumer Access Survey • Key informant interviews, community meetings, and focus groups
		4 of 6 counties had higher PQI rates than the State average and 6 of 6 counties had higher PPV rates	• PPR, PQI and PPV Data from NYS DOH
		The leading cause of hospitalization (18,650 admissions) and ED use (51,432 visits) in the CNYCC service area is depression. Drug abuse and chronic stress/anxiety is the third and sixth leading cause of hospitalization, and the third and fifth leading cause of ED use, respectively.	• Medicaid Beneficiary Chronic Health Conditions, Inpatient and Emergency Room Utilization (Accessed from Health Data NY)

Table 27. Summary and prioritization of CNA findings

Community Need ID Number	Community Need	Brief Description	Primary Data Sources
13	High rates of chronic disease leading to high utilization of hospital and ED services	All six counties had a higher proportion of adults with high blood pressure than the state average. Five of six counties had higher rates of asthma.	• Expanded BRFSS July 2008 - June 2009 • PPR, PQI and PPV Data from NYS DOH • 2013 Central New York Consumer Access Survey • Key informant interviews, community meetings, and focus groups
		The second leading cause of hospitalization (15,827 admissions) and ED use (36,279 visits) in the CNYCC service area is hypertension. Diabetes and Asthma are the fourth and fifth leading cause of hospitalization, and the sixth and fourth leading cause for ED use, respectively.	• Medicaid Beneficiary Chronic Health Conditions, Inpatient and Emergency Room Utilization (Accessed from Health Data NY)
14	Dental provider shortages	Compared to primary care and mental health HPSA/MUAs, there are fewer designated dental shortage areas, although this is contrary to the key informant interviews which highlighted dental shortages. Only Onondaga had a rate of dental providers per 100,000 anywhere close to the state average; the other five counties had significantly lower rates of dentists.	• HPSA/MUA designations from HRSA, Key informant interviews; AHRF 2012 • Key informant interviews, community meetings, and focus groups
15	Lack of affordable housing	Homelessness is an issue, especially in urban hubs like Syracuse and Utica. Persons who are homeless use the EDs for shelter, food, showers, and clean clothes. The lack of housing as an issue is exacerbated by increasing heroin and opiate use. Lack of housing makes it challenging to follow through on discharge plans, resulting in a cycle of readmissions to EDs.	• Key informant interviews, community meetings, and focus groups
16	Lack of post-acute care capacity overtime	Currently post-acute, nursing home capacity is right sized with a very slight shortage but capacity is not well distributed and as inappropriate hospital utilization declines there will be a need for additional capacity as patients transfer to less acute settings	• Health Facility Certification Information (Accessed from Health Data NY)
17	Rural nature of service area and low population densities creates major barriers due to transportation and service delivery	Rural nature of service area and low population densities creates major barriers due to transportation and service delivery	• US Bureau of Census, American Community Survey, 5-year averages, 2008-2012
		In general, the resources identified across categories (hospital, primary care, behavioral health, dental, post-acute, and community-based) were located in the more urban areas, leaving rural areas with limited access to the available resources.	• PPS Partner Survey
18	Syracuse and	Syracuse and Utica hubs have large	• US Bureau of Census, American

Table 27. Summary and prioritization of CNA findings

Community Need ID Number	Community Need	Brief Description	Primary Data Sources
	Utica cities have large at-risk populations	immigrant, refugee and minority populations. There is less education, higher unemployment in these areas. Poverty is also concentrated in these areas – % in poverty is at least double the CNYCC regional average.	Community Survey, 5-year averages, 2008-2012
19	Lack of access to opportunities for physical activity	Five of six (all but Onondaga) counties have a lower rate of recreation and fitness facility establishments per 100,000 than the state average. Further, all six counties have a lower percent of the population that lives within one-half mile from a park.	• US census Bureau, County Business Patterns: 2012. Additional data analysis by CARES • Key informant interviews, community meetings, and focus groups • CDC Healthy Community Design Initiative and Geospatial Research Analysis and Services Program. Accessed from Environmental Public Health Tracking Network, 2010.
20	Lack of access to healthy food	All six counties have fewer grocery stores per 100,000 than the state, probably due to the rural geography of the region. Further, four of six counties have a higher proportion of the population that are low-income and have low access (live more than one mile from) to a large grocery store.	• US Census Bureau, County Business Patterns: 2012. Additional data analysis by CARES • 2010 US Dept. of Agriculture Food Environment Atlas Data as of November, 2012
21	Selected hot spots with need for improved maternal and child health	Although CNYCC service area is generally better off than the Upstate average with respect to maternal and infant health outcomes, there are selected areas of need. With the exception of infant mortality, Oneida performs relatively worse than other included counties on all indicators including lack of prenatal care, percent of women breastfeeding, C-section, and proportion of births that are preterm and low birth weight	• CHAI 2011 • BRFSS 2009
22	Regionally high rates of potentially preventable hospitalizations and ED use	Four of six counties had higher overall composite Prevention Quality Indicator (PQI) rates than the New York State average. Rural areas have high rates of potentially preventable ER visits and a high proportion of Medicaid beneficiaries with an ED visit.	• All Payer Potentially Preventable Emergency Visit (PPV) Rates by Patient Zip Code (SPARCS) (Accessed from Health Data NY)
23	Healthcare resources that can be leveraged exist across the region	Critical partners – those that have already self-identified as a PPS partner – have been identified in six categories: hospital, primary care safety net, behavioral health, dental, post-acute, and community-based. Additionally, other potential partners have been identified to fill in gaps to maximize the effectiveness of services provided.	• 2014 Survey of Health Care and Community Resources • Key informant interviews, community meetings, and focus groups • See source list of resources.

Table 27. Summary and prioritization of CNA findings

Community Need ID Number	Community Need	Brief Description	Primary Data Sources
24	Large Medicaid and dual eligible populations	Five of six counties have Medicaid rates higher than upstate average; more than 1 in 5 residents in Oswego and Onondaga are Medicaid beneficiaries. Further, in five of six counties dual eligible make up a greater proportion of Medicaid beneficiaries than the NY state average.	• New York Department of Health, Medicaid Enrollees and Expenditures by County 2012
25	Aging population	Four of six counties with higher than state % population 65+. Industries closing, leaving older, poorer population behind.	• US Bureau of Census, American Community Survey, 5-year averages, 2008-2012
26	Hospitals have adequate capacity	There are 12 hospitals in the region. Across the CNYCC region, the average number of beds per 1,000 residents is equal to that of the state. Similarly, the occupancy rate of beds is comparable between the CNYCC region and the state. Hospitals vary in quality measures including wait time and patient satisfaction, but have comparable rates of readmissions within 30 days.	• Health Facility Certification Information (Accessed from Health Data NY) • Hospital Profiles (http://profiles.health.ny.gov/hospital/pages/technotes)
27	Selected hot spots with need for improved services for sexually transmitted infections	Although CNYCC service area is generally better off than the Upstate average with respect to sexually transmitted infections (Inc. HIV/AIDS), Onondaga and Oneida Counties have relatively high rates of HIV/AIDS, chlamydia, gonorrhea, and syphilis.	• CHAI 2011 • BRFSS 2009

V. RECOMMENDED PROGRAMMATIC STRATEGIES

Strategy 1: Strengthen and expand ambulatory care operations, including primary care, behavioral health, and oral health care services

Ambulatory care services, including primary care, behavioral health, and oral health care services, must be strengthened and capacity expanded if the overall health system is to improve the communities' overall health status, increase overall quality of services, and reduce costs, including inappropriate hospital utilization. The Community Needs Assessment findings identified very high rates of Prevention Quality Indicators (PQIs) (hospital inpatient utilization), Potentially Preventable Visits (PPVs) (hospital emergency department utilization), and proportions of Medicaid beneficiaries using hospital emergency departments in the past 12 months when compared to Upstate New York and New York State averages. These rates were particularly high and pervasive in the more rural areas in the northern portion of the CNYCC service as well as in the eastern portion. Key informant interviews also consistently highlighted shortages in primary medical, behavioral health, and oral health care services as one of the leading health care challenges, particularly in more rural areas, as well as the need for strengthening operations

with respect to PCMH, care coordination, services integration, and the use of evidence-based practice. Finally, there were very high levels of morbidity and mortality, particularly with respect to chronic medical and behavioral health conditions, which is suggestive of the need for more intense chronic disease management activities. For many of the recommendations provided here, refer to Table 20 on page 54, Primary Care Internal Operations Strengths and Weaknesses for more information.

a. Strengthen ambulatory care operations with an eye towards the Triple Aim

Initially, ambulatory care strengthening efforts should focus on enhancing internal clinical and administrative operations and systems. Specifically, these efforts should be geared to achieving the Triple Aim of: 1) improving quality of care and the overall health of the population; 2) enhancing the patient experience; and 3) creating efficient, cost-effective operations. The range of possible operational advancements in this regard is broad in nature and includes activities to enhance internal operations and external provider partnerships. The goal of these efforts is to create patient-centered, coordinated, integrated, service delivery approaches that focus on quality, safety, and access.
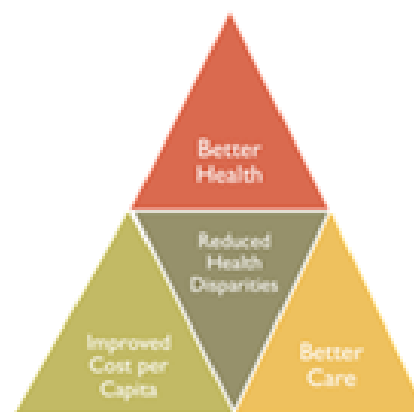
Figure 14: Triple Aim

b. Expand primary care capacity

Despite the recent growth in primary care capacity, specifically the growth in FQHC and hospital-based provider capacity, targeted efforts still need to be made to build primary care capacity to fill geographic gaps, meet the needs of specific demographic/socio-economic population segments, and address specific health status issues. It is particularly important to expand primary care safety net capacity to ensure that those who are Medicaid insured or uninsured have access to care. This should be accomplished through a multi-pronged strategy that focuses first on maximizing existing primary care capacity then on adding additional providers or practice sites, as appropriate.

Existing practice sites should first explore whether an unmet need can be addressed by decreasing patient no-shows, improving provider and patient scheduling, refining patient flow, developing primary care pods, creating interdisciplinary teams, or other ways that increase productivity and maximize existing capacity.[28] The Community Health Care Association of New York State (CHCANYS) developed a statewide plan in 2013 that details how community health centers should expand capacity. This document contains valuable information for primary care practices everywhere.

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[28] The Community Health Care Association of New York State (CHCANYS), with support from the New York State Health Foundation, has developed a statewide plan for community health centers to increase their ability to serve more patients. Based on extensive quantitative and qualitative analyses, the plan identifies geographic areas that have the greatest need and potential for sustainable growth, estimates potential increases in capacity within the existing system, and highlights strategies for creating more capacity.

Additional primary care capacity should be attained, as needed, by filling provider vacancies, promoting broader participation in the State's Medicaid program among private practitioners, adding providers at existing clinic practices, and when feasible developing new primary care practices. Inevitably, expansion efforts will occur through the actions of individual practice sites. However, these actions should be considered in collaboration with the full health care system. Ideally, efforts will be based on a community or market-level plan in the context of developing a strong, collaborative, integrated delivery system that coordinates the full spectrum of required public health, health care, and social services for all who need them.

Communities must ensure that there is a thriving safety-net practice or group of practices that are geographically focused on serving all-comers and that are committed to and capable of serving all residents regardless of their ability to pay. These core providers are an important asset and must be supported by the community at-large. However, in order to develop a system of care that is able to provide access to all in need, most communities in Central New York will need to apply a multi-pronged approach that not only focuses on the expanding FQHCs and other safety net practices but also supports the development of a broad range of providers. In many markets, the core safety-net providers are left to serve a disproportionate number of the uninsured, which often makes it challenging for them to survive. Providers must develop systems and partnerships to share this burden. Specific efforts must be made to support the free clinics in Onondaga County because they are critical to the county's safety-net.

c. Expand behavioral health care capacity

The National Institute of Mental Health (NIMH) stated in a 2008 report that an estimated 26.2 percent of Americans ages eighteen and older—about one in four adults—suffer from a diagnosable mental disorder in a given year, which translates into 57.7 million people.[29] Data from the CNY CNA fully corroborates these findings and details the substantial impact that behavioral health issues have on health status and inappropriate hospital utilization in the CNYCC service area. As discussed above, steps need to be taken to strengthen operational capacity (e.g., no-show rates, application of evidenced-based practice, screening/assessment, patient flow, etc.) across all ambulatory care settings, including behavioral health care settings. In addition, one of the most consistent themes across the provider/consumer interviews and focus groups and the quantitative data was the need to expand access to mental health and substance abuse services across the region. Virtually no community was left untouched in this regard.

As with primary care, it is particularly important to ensure that behavioral health service capacity is available for those who are Medicaid insured or uninsured. This should be accomplished through a multi-pronged strategy that focuses first on maximizing existing capacity then on adding additional providers or practice sites, as appropriate. Additional capacity should be attained by filling provider vacancies, promoting broader participation in the State's Medicaid program among private practitioners, promoting telemedicine and other consultation models, promoting behavioral

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[29] http://www.milbank.org/uploads/documents/10430EvolvingCare/EvolvingCare.pdf

health/primary care integration, adding providers at existing clinic practices, and when appropriate and feasible developing new behavioral health ambulatory care practices.

Specific steps should be taken to integrate mental health and substance abuse screening, referral, and treatment services within the primary care setting. This type of primary care integration is particularly effective for those with mild to moderate conditions. It is equally important that steps be taken to expand access to primary care medical services within outpatient behavioral health settings, particularly for those with moderate to serious conditions. A range of models or integration strategies have proven in the literature to be effective including: 1) co-location of primary care and behavioral services with either the primary care setting as the locus or the behavioral health care setting as the locus; 2) enhanced referral relationships that promote provider/patient communication and ensure that patient care is well coordinated, even if care is not co-located, 3) primary care provider training models that promote greater primary care provider involvement in counseling and medication management, and 4) telemedicine initiatives that address shortages in psychiatric services.

Efforts to expand service capacity need to go hand-in-hand with efforts to promote screening and assessment so that the CNYCC capacity can match demand and need for services. The following are a range of strategies drawn from the assessment's findings that will address unmet need, fill gaps in capacity, improve health status, and ultimately reduce inappropriate utilization.

d. Expand oral health care capacity

Another consistent theme from the assessment's provider/consumer interviews and focus groups, the consumer survey, and the quantitative data was the need to expand oral health service capacity. While there is ample capacity in many communities for those who are commercially insured there is extremely limited capacity for oral health services for those who are Medicaid insured or uninsured. As with behavioral health care services, efforts need to be made to expand access and capacity in this area as well. Once again, a multi-pronged strategy is appropriate that focuses on filling vacancies in dental providers, integrating oral health services within existing safety net clinic operations, promoting broader participation in the State's Medicaid program among private practitioners, and developing new dental safety net practices when appropriate and feasible.

e. Promote primary care engagement in a patient-centered medical home

Communities and primary care practice sites need to collaborate in an effort to reach out to the community at-large to promote healthy behaviors, provide health education, and promote primary care engagement. As mentioned, a portion of the unmet need in communities throughout the region is due to limited primary care capacity and/or lack of after-hours care. However, according to information from JSI's interviews and site visits, a significant portion of the unmet need is associated with a lack of consumer engagement in care and a lack of appreciation for regular primary care services. Promoting appropriate engagement in primary care is particularly important for people with health risk factors and/or chronic health conditions. For people with chronic conditions or specific risk factors, it is important that the education be augmented with counseling on disease management, behavior change, and self-management.

There are numerous evidence-based outreach and engagement programs that target the community at-large as well as those with chronic illness or certain risk factors. See evidence provided in recommendation Section 1a.

f. Support initiatives that promote primary care provider recruitment and retention

Recruitment and retention would benefit from a regional approach drawing on the expertise of state and national agencies and organizations that are closely involved in provider training and development (e.g. CHCANYS, Area Health Education Centers (AHEC), NYS Primary Care Office, Association of Clinicians for the Underserved, and National Health Service Corps). Recruiting and retaining clinical staff is an essential prerequisite to stabilizing and enhancing the primary care system. Most hospitals, health care systems, and group practice settings in the region struggle to recruit physicians and fill gaps in their clinical staffing. This issue is not unique to central New York; it is an issue that providers in largely rural areas face throughout the nation. Additionally, providers could share resources and/or develop a tool kit to guide the recruitment and retention process and help practices be more prepared and involved in this process. Finally, regional stakeholders could develop a resource center that would work collectively on behalf of the region's practices to support the recruitment process, as occurred in Minnesota through a RWJF grant.

Strategy 2: Develop care management and care coordination initiatives focused on those with chronic illness and/or those who are high utilizers of services

Care coordination as well as evidence-based care management and palliative care activities focused on those with emerging or already complex chronic conditions as well as those who are otherwise high utilizers of services are critical to improving overall health status, reducing costs, and addressing DSRIP goals. Findings above highlight the high rates of chronic conditions and the fact that hospital emergency department and inpatient utilization is dominated by patients with chronic medical and behavioral health conditions. According to the literature and information collected from our community needs assessment, the most significant contributors to poor health status and high costs, including inappropriate utilization are: lack of evidenced-based care, poor communication among health and social service providers, lack of early detection and screening, failure to address behavioral health issues, fragmentation of care/lack of coordination, and ineffective transitional services from hospital and post-acute settings. A multi-pronged strategy that: 1) addresses the range of care management and care coordination issues across the ambulatory, hospital, and post-acute settings, 2) involves a broad range of other community-based agencies, and 3) works over time to address the underlying social and environmental determinants of poor health that are barriers to improving health status and reducing costs.

a. Develop care management and care coordination initiatives in ambulatory care settings, particularly in primary care and behavioral health service settings

Care coordination, care management, and palliative care programs in the ambulatory care settings, including primary care practice settings, involve the identification of high-utilizers, proactive management of patient care, and sharing of information between the patient and all the providers

involved. Ultimately the goal is to encourage self-management and promote more coordinated, efficient, patient-centered care. Many care management and care coordination programs focus on identifying and managing the care of high-cost, frequent utilizers (e.g., diabetics, asthmatics, those with depression and substance abuse issues) that too often end up in hospital emergency departments or inpatient settings. Care management and care coordination activities include creating care plans, supporting patient's self-management goals, linking patients to community resources, monitoring follow-up, and helping with care transitions. These programs can be and are often imbedded within PCMH programs.

b. Develop emergency department initiatives targeted at super utilizers.

One of the core findings of the CNA is the fact that large proportions of the population use the hospital emergency department as their regular source of primary or lack an understanding of the importance of regular primary care and preventive services. Care management and care coordination initiatives in the emergency department setting are often designed to identify high utilizers who are uninsured, not linked to primary care services at all, and/or are infrequent utilizers of primary care services. Such programs are particularly effective if they implemented in conjunction with case management based out of the primary care setting. In this way, the ED is used to triage super-utilizers to the case management program and community-based primary care settings.

c. Improve care-transitions/discharge planning for all patients.

Across the region, poor discharge planning was identified as a barrier to preventing avoidable readmissions. In addition, high rates of PPRs, PQIs and PPVs are also indicative of the need to focus on transitions. Activities that support smooth transitions include conducting a whole-person assessment, arranging for and promoting timely follow-up visits and services, providing evidence-based palliative care, communicating with receiving providers, better managing medications, using a checklist to ensure delivery of all services, and engaging the patient and family/caregivers in developing a care plan. The data also highlights the importance of screening for behavioral health issues and making sure that behavioral health specialists are involved in the discharge process. Improved data sharing capacity will also result in improved care transitions.

Strategy 3: Promote population-based approaches to community health and primary care engagement in a patient-centered medical home

The findings also highlight the importance of developing broad collaborative activities involving health care providers (including primary care), state/local public health officials, social service organizations, educators, business leaders, and philanthropic organizations that are focused on improving population-based health outcomes and engaging individuals and families in appropriate primary care. There is growing appreciation in the health care field of the need for communities to address health care disparities, improve its overall health status, and reduce health care costs, including inappropriate hospital utilization. To do so, communities need to develop a shared agenda and implement targeted,

integrated efforts that build on existing programs and assets. There also needs to be evaluative metrics and a community-based infrastructure that guides and monitors these activities. [30]

a. Promote population-based approaches to community health

Figure 15, developed by the University of Wisconsin's Population Health Institute, illustrates the importance of taking action at the community-level to improve health status, reduce mortality, and reduce inappropriate utilization. Increasingly, the literature shows that clinical care has a limited impact on improving health outcomes and keeping people healthy. As a result, new service delivery and payment reform efforts, like DSRIP, are being designed to entice providers to keep patients well and improve health outcomes rather than provide specific clinical care or treatment services. Certainly, a well-integrated system of care is essential to keeping communities healthy. However, the greatest impact comes from addressing the physical environment and social/economic factors as well as changing risky health-related behaviors.

Figure 15: Social Determinants of Health and Primary Care

Communities that have showed the most promising results are taking a two-fold approach. First, they are working to ensure that residents have access to a well-integrated system of care that:

- Gives residents access to appropriate primary care, behavioral health, and oral health services.

- Integrates a broad range of specialty care, inpatient, long-term care, and home-based services that individuals and families need throughout the life-cycle.

- Promotes care coordination, care management, and patient/family self-management, particularly for children, frail elders, and people with complex or chronic conditions.

- Delivers services across the full spectrum in a patient-centered manner.

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[30] Hanleybrown, F., Kania, J., Kramer, M. Channeling Change: Making Collective Impact Work. Stanford Social Innovation Review. 2012

Second, communities and integrated delivery systems that include primary care are working to improve physical environments, address social/economic factors, and implement targeted community health programs that:

- Educate residents and raise awareness about key health issues.

- Identify people at risk, particular those who have chronic disease or the leading chronic disease risk factors.

- Provide evidence-based support for behavior change and disease management.

- Link all community residents, especially those most at risk, to regular, appropriate primary care services in a patient-centered medical home.

b. Develop programs and evidence-based interventions geared to addressing HIV/AIDS and other sexually transmitted infections as well as maternal and child health outcomes

Figure 16: Approaches to Community Health
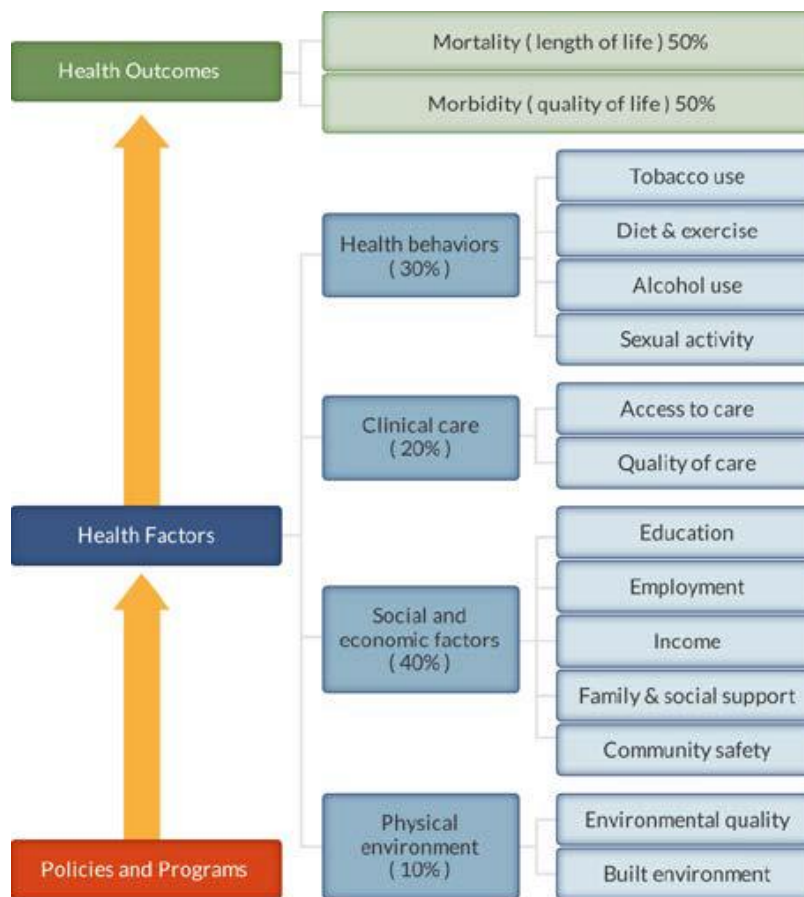
County Health Rankings model ©2012 UWPHI

As discussed above, the prevalence of chronic medical and behavioral health conditions, along with the health and behavioral risk factors that are associated with these conditions, are disproportionately higher in the CNY Care Collaborative's service areas when compared to Upstate New York and New York State averages. A broad strategy of health education and health promotion combined with efforts to promote appropriate engagement in preventive and primary care services is recommended. A review of the data reveals that maternal and child health indicators related to pre-term birth, infant mortality and appropriate prenatal care need special attention as the rates in many of the region's counties are substantially worse than the Upstate end New York rates. Likewise, the rates of HIV/AIDS and other sexually transmitted infections, particularly in Syracuse and Utica are much higher than rates in Upstate New York and New York State overall. There are dedicated organizations to provide HIV/AIDS services and support people living with HIV/AIDS. AIDS Community Resources is one key resource, providing case management, care management, risk reduction/education, linguistic support, transportation,

psychosocial support services, supportive housing, and treatment education in several counties in the PPS service area. Other medical and non-medical service providers are included in the list of county resources available in Appendix B.

c. Support the development of registries and other HIT tools to identify and promote primary care engagement, care coordination and chronic disease management

Safety-net practices in the region would benefit from support that would allow them to share information between practice sites and explore how to use their EHRs to ensure that patients are fully engaged in their care, receive tailored follow-up, and the most appropriate case/care management services. Based on a recent issue brief published by the Center for Health Care Strategies (CHCS)[31], approximately 60 percent of physicians work in practices with four or fewer providers, and roughly 65 percent of all physician office visits occur in practices of this size. These national statistics reflect the characteristics of central New York's primary care safety-net. Smaller practices of this type usually don't have the staff to research and support the implementation of registries and use of all of the functionalities of their EHRs. Information gathered by JSI corroborates these findings. Key stakeholders interviews and consumer discussions emphasized the lack of coordinated care between inpatient and outpatient providers as well as between primary care and behavioral health services.

Practice sites would also benefit from the formal implementation of primary care engagement, care management, and palliative care protocols/interventions that leverage their EHRs to identify and manage their chronic disease patients. Another issue brief developed by CHCS highlights the lessons and best practice programs from a national pilot.[32]

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[31] http://www.chcs.org/usr_doc/Supporting_Meaningful_Use_Brief.pdf

[32] Key Factors for Improving Care Delivery in Small Primary Care Practices with High Medicaid Volume, http://www.chcs.org/usr_doc/Key_Factors_for_Improving_Care_in_Small_Primary_Care_Practices.pdf

Strategy 4: Enhance transportation services for high-need populations.

There is a marked lack of public transportation across the region, particularly outside of Syracuse. This fact combined with the reality that poverty rates are high for large proportions of the population means that many people have limited transportation options and face substantial barriers to accessing care. It is important to note, however, that this is not merely an issue for those who need to get to health care appointments but also has a major impact with respect to following through on treatment regimens, getting to follow-up appointments with specialists, filling drug prescriptions, going to the grocery store for healthy foods, and doing other regular activities of daily living. Key informants also mentioned the challenges that providers experienced getting to practice sites or getting to home health settings. Investment in systems or partnerships that address transportation barriers, particularly for those with chronic conditions, would increase the proportion of patients whose conditions are properly identified and controlled. These systems could reduce inappropriate transfers.

Strategy 5: Develop care management programs within public, low income or transitional housing settings for low income or homeless populations.

A key finding from the CNA's key informant interviews and focus groups highlighted the need for care management programs designed specifically for those who are homeless or live in unstable housing situations. These programs are designed specifically for a high utilizing cohort and are focused on ensuring that homeless patients are provided with stable housing as an integral part of their care transition plans. Housing is relatively inexpensive compared to providing inappropriate care in the emergency department or unnecessary inpatient admissions. Thus, investing in housing as a means to prevent readmissions is a cost-effective solution. The Housing First model, implemented in Seattle and Chicago, has proven that providing transitional housing services can improve health outcomes and reduce health care costs.

V. METHODOLOGY

A. DSRIP Performance Data Methods

Abstracted Data

Data matrices were organized in accordance to the domains specified by the New York State Department of Health's *Guidance for Conducting Community Needs Assessment Required for DSRIP Planning Grants and Final Project Plan Applications*. "System Transformation Metrics" were contained in Domain 2, "Clinical Improvement Metrics" in Domain 3, and prevention-related metrics in Domain 4.

Population demographics and population health status were detailed in Domain 2 subdomains, 2Bi and 2Bii respectively. Domain 2Bii was further divided into nine subdomains (2Bii1-2Bii9).

All data that were included in the matrices were collected at the county level, with some additional analyses conducted at the Zip Code level when specified. As available, matrices included 5-year longitudinal (2008-2012), state, upstate (state not including NYC), and best performing county data. Matrices were conditionally formatted to highlight counties performing worse than the state and/or worse than upstate. Red cells designate a county value worse than both NY State and NY Upstate values; blue cells designate a county value worse than the Upstate value; yellow cells designate a county value worse than the NY State value; bold lettering within a cell indicates that both upstate and state comparison values were not available; and underline lettering within a cell indicates that either upstate or state comparison values were not available. Conditional formatting was only applied to most recent data—in most cases, this is 2012.

When data was not available from the source, it was labeled as not available with an "NA." Data sources also designated whether the value was unstable with a "*" or if collected data did not meet reporting criteria with an "s." Metadata was appended in the notes column as available.

Between 20% and 100% of all data values, including NA values, were checked for accuracy by an analyst different than the data entry analyst. Data checks were selected randomly on a by-column basis.

Methods for Tables 1-5 of County Narrative Reports

Table 1, Demographic Information, corresponds to the guidance's domain 2Bi. The data source is the U.S. Census Bureau's American Community Survey, 5-Year Estimates for the years 2008-2012.

Table 2, Leading Causes of Premature Death, corresponds to the guidance's domain 2Bii1. The data source is Vital Statistics Data as of March, 2014, located within the Leading Causes of Death by County, New York State, 2012 spreadsheet on the New York State Department of Health's County Health Statistics webpage. County rates were compared to the Upstate NY rate value for each condition.

Table 3, Leading Causes of Hospitalization, corresponds to the guidance's domain 2Bii2. The data source is 2010-2012 SPARCS Data, located on spreadsheets accessible through the New York State Community Health Indicator Reports (CHIRS) webpage. Data from these spreadsheets was compiled longitudinally and sorted by rate in 2011. County rates were compared to the Upstate NY rate value for each cause of hospitalization.

Table 4, Population Health Indicators and Major Health Risk Factors, corresponds to the guidance's domains 2Bii6 and 2Bii7. The data sources included are: Pregnancy Nutrition Surveillance System WIC Program data (as of July, 2012) and 2009-2011 Vital Statistics Data (as of February, 2013), 2009-2011 NYS Department of Motor Vehicles Data (as of July, 2013), 2009-2011 SPARCS Data (as of February, 2013), and 2010-2012 Student Weight Status Category Reporting System Data (as of July, 2013)—all located on spreadsheets accessible through the New York State Community Health Indicator Reports (CHIRS) that report Community Health Assessment Indicators (CHAI) webpage. Table 4 also contains Expanded BRFSS data July 2008 – June 2009, accessible through the County-Specific Prevention Agenda Reports and County-Specific Report - Expanded BRFSS July 2008 - June 2009 webpages.

Table 5, Access to Health Care, corresponds to the guidance's domains 2Bii8. The data source is Expanded BRFSS data July 2008 – June 2009, accessible through the County-Specific Prevention Agenda Reports and County-Specific Report - Expanded BRFSS July 2008 - June 2009 webpages.

Methods for Tables 6-11 of County Narrative Reports

Data on service utilization, prevalence of chronic conditions, leading causes of ER visits and inpatient admissions, as well as adult and pediatric Prevention Quality Indicators (PQIs/PDIs), potentially preventable readmission (PPR) and potentially preventable emergency room visits (PPV) rates for the Medicaid population were obtained from Health Data NY. Other data sources included the Salient New York State Medicaid DSRIP Dashboards and DSRIP Performance Chartbooks. Data were available at the county and/or zip-code level. Data pertaining to the PPS counties, overall New York State and upstate NY were selected and included in the analyses.

For the service utilization data (Table 6), the 2013 primary care data from the NYS DSRIP Dashboard #8 and 2012 Emergency Room and Inpatient Admissions data from Health Data NY (file name, "Medicaid Beneficiaries, Inpatient Admissions and Emergency Room Visits by Zip Code: Beginning 2012") were used. Data were aggregated from the zip code level to the county level for the number of unique members served and total number of visits indicators. The percent of county members with a visit was calculated as the number of unique members with a visit divided by the total number of members in the county and multiplied by 100. The number of visits per member was calculated by dividing the total number of visits by the total number of members in the county. Calculated variables were benchmarked against state-wide data.

For chronic conditions and leading causes of ER visits and inpatient admissions (Tables 7-9), one data set from Health Data NY was used (file name, "Medicaid Chronic Conditions, Inpatient Admissions and Emergency Room Visits by Zip Code: Beginning 2012"). The data were limited to the counties of interest and aggregated up to the county level. Additionally, the Episode Disease Categories were categorized into Condition Categories in order to group similar diagnoses (see Appendix B for details). For Table 7, the percent of members with the condition was calculated as the number of members in the county with the condition divided by the number of members in the county multiplied by 100. In tables 8 and 9 the visits/admissions per member was calculated as the total number of visits/admission by condition divided by the number of members in the county with the condition. For tables 7-9 the table was ranked in descending order by the calculated variable, which was benchmarked against state-wide data.

For the adult and pediatric PQIs and PDIs (Table 10), the Medicaid Inpatient Prevention Quality Indicators for Adult Discharges: Beginning 2011 by Patient County & by Patient Zip Code files from Health Data NY were used. For the potentially preventable emergency room visits data, the files Medicaid Potentially Preventable Emergency Visits (PPV): Beginning 2011 by Patient County & Patient Zip Code from Health Data NY were used. The 2012 risk-adjusted rate per 100,000 people for each PQI/PDI measure and the risk-adjusted PPV rate per 100 people for the selected counties were compared to the overall NYS and upstate NY rates. A rank order of the 11 counties by the composite PQIs and PDIs and PPV rates were done for cross-county comparisons.

For potentially preventable readmissions (Table 11), the Medicaid Hospital Inpatient Potentially Preventable Readmission Rates by Hospital: Beginning 2011 file from Health Data NY was used. The 2012 PPR rates for hospitals that were identified within the PPS counties were selected and compared to the statewide PPR rate. For counties with multiple hospitals, hospitals were ranked by their PPR rate from highest to lowest.

For all measures and indicators, where available, zip code level analyses and GIS mapping were used to identify areas within counties with higher rates or lower performance than the county average.

All data used were publicly available and de-identified. Statistical analyses were conducted in SAS 9.3 (Cary, NC).

B. Condition Categorization of Episode Disease Categories

The Episode Disease Categories were categorized into Condition Categories in order to group similar diagnoses using the following categories.

Angina and Ischemic Heart Disease
- Angina and Ischemic Heart Disease
- Unstable Angina

Asthma
- Asthma
- Status Asthmaticus

Atrial Fibrillation, Cardiac Dysrhythmia, and Conduction Disorders
- Atrial Fibrillation
- Cardiac Dysrhythmia and Conduction Disorders

Bi-polar Disorder
- Bi-Polar Disorder
- Bi-Polar Disorder - Severe

Cardiomyopathy, Congestive Heart Failure and Other Cardiovascular Major Diagnoses
- Cardiomyopathy
- Congestive Heart Failure
- Other Cardiovascular Diagnoses - Major

Chronic Alcohol Abuse
- Chronic Alcohol Abuse
- Delirium Tremens

Chronic Bronchitis and other Chronic Pulmonary Diagnoses
- Chronic Bronchitis
- Other Chronic Pulmonary Diagnoses

Chronic Mental Health Diagnoses
- Chronic Mental Health Diagnoses - Minor
- Chronic Mental Health Diagnoses - Moderate

COPD and Other Major Chronic Pulmonary Diagnoses
- Chronic Obstructive Pulmonary Disease and Bronchiectasis
- Other Major Chronic Pulmonary Diagnoses

Drug Abuse
- Cocaine Abuse
- Cocaine Abuse - Continuous
- Drug Abuse - Cannabis/NOS/NEC
- Drug Abuse Related Diagnoses
- Other Significant Drug Abuse
- Other Significant Drug Abuse - Continuous
- Opioid Abuse
- Opioid Abuse - Continuous

Congenital and Cardiac Defects/Anomalies
- Complex Cyanotic and Major Cardiac Septal Anomalies
- Other Major Congenital Heart Diagnoses Except Valvular
- Valvular Disorders
- Ventricular and Atrial Septal Defects

Conduct, Impulse Control, and Other Disruptive Behavior Disorders
- Conduct, Impulse Control, and Other Disruptive
- Behavior Disorders Conduct Disorder - Severe

Coronary Atherosclerosis
- Coronary Atherosclerosis
- Coronary Graft Atherosclerosis

Depression
- Depression
- Depressive Psychosis - Severe
- Depressive and Other Psychoses

Diabetes
- Diabetes - Juvenile Onset
- Diabetes with Circulatory Complication
- Diabetic Coma
- Diabetic Ketoacidosis
- Diabetic Nephropathy
- Diabetic Neuropathy
- Diabetic Retinopathy
- Other Diabetic Complications

Hypertension
- Hypertension
- Malignant and Other Significant Hypertension
- Pulmonary Hypertension

Premature Birth
- Prematurity - Birthweight 750 - 999 Grams
- Prematurity - Birthweight < 1000 Grams
- Prematurity - Birthweight < 750 Grams

Schizophrenia
- Schizophrenia
- Schizophrenia - Catatonia
- Schizophrenia - Exacerbation

C. Qualitative Methods

Qualitative data collection for the DSRIP program CNA project consisted of a two-part process, beginning with the creation and dissemination of a survey to assess organizational capacity, service areas, patient/consumer demographics, particular areas of expertise, and barriers. The second part of qualitative data collection involved a series of key informant interviews. Building on these two data sources, JSI also incorporated findings from past needs assessments during the review and analysis.

PPS Partner survey

The purpose of the survey was to cast a wide net of potential partners and resources in the region. The audience for the PPS Partner Survey was identified as those organizations that the PPS had included as partners in their DSRIP planning application to NYS DOH. This original list, included in the application to NYS DOH, was used to create a list of PPS Partner Survey recipients. The list of partners included general partnering organizations, other partnering organizations, a list of physicians, and a list of pharmacy partners. Over 200 contacts received the survey.

The survey of key providers in the region assessed a number of service and capacity indicators. The survey was organized by service type, including inpatient, outpatient primary care, behavioral health (including outpatient, residential, and day treatment), dental, long-term care, and non-medical/community services. For each service type, the survey assessed patient population (in terms of payor mix and demographics), estimated full-time equivalent (FTE) capacity for medical and behavioral health providers, facility capacity in terms of number of distinct service sites and number of

unduplicated patients, progress in implementing health information technology, and current and expected capacity to serve both children and adults.

The survey was administered online and distributed via email to individuals identified by the PPS as key providers in the region. Contacts were organized according to the county in which they provided service. Organizations were contacted with an initial email and follow-up request three days later to complete the survey. Non-respondents and respondents with missing data were then contacted a third time by phone. This online survey also collected address information that was used to map partners, and capacity and services information to provide an understanding of available resources and remaining gaps.

A total of 173 organizations completed the survey between August 21 and September 30, 2014. This included 44 organizations that provide inpatient services, 37 organizations that provide outpatient primary care, 39 organizations that provide behavioral health outpatient services, 11 organizations that provide residential behavioral health services, 11 organizations that provide day treatment behavioral health services, 23 organizations that provide dental services, 43 organizations that provide long-term care services, and 47 organizations that provide non-medical services in the community. Many organizations provided multiple services.

Key Informant Interviews

In follow up to the survey, a number of individuals were selected for key informant interviews. These interviews provided context for the data by focusing on perceived priority issues and root causes of hospital readmissions. Key informants included individuals representing hospital providers, other health providers, and community-based organizations. Interview guides were designed for each type of respondents, but in general the interview focused on an overview of the organization, perceived significant issues that influence health status, existing relationships between providers in the region to be leveraged, and recommendations for systems-level changes to improve access to and quality of health care services for clients in the region.

The PPS identified an initial list of key informant recommendations. These names were selected by the PPS because the organization was identified as a key partner for the DSRIP project (i.e., a key county provider identified in Table 15 of this report) and their insight was seen as key to developing the picture of needs and resources in the service area. Original contact lists consisted of the contact name, agency name, position title within their agency, phone number, and email address. The number of contacts included on each list varied by county, and included a mix of community based resource providers, other healthcare providers, or hospital providers. This contact information data was cross referenced with survey data, when relevant.

Key informant interviews were led by a lead interviewer based on the interview guide, which was provided in advance to the interviewees. Responses were uploaded to a database with all interview responses. The qualitative data analysis team maintained detailed records about recurring themes visible in each interview. Upon the identification of a new theme, the interviewers proceeded to explore

the validity of said new theme in subsequent interviews. Each interviewee was asked to recommend other interviewees, thus expanding upon the initial contact list.

Throughout the KII process, the full team of interviewers routinely convened to provide progress updates and discuss any newly-identified themes. This full group also reported any identified gaps in interviewee type within each county. For example, some counties had an excess of other healthcare providers, but a noticeable lack of community based resource providers. Once the gap was identified, individual team members conducted further research in an attempt to identify possible contacts that could fill the existing information vacancy within their respective county teams. Finally, before producing a summary analysis report of findings taken from the interviews, the complete team of interviewers met to confirm the list of identified themes, overlapping and contrasting survey data with that collected through the KII process.

Key informant interviews were conducted in the month of September. In total, 77 key informant interviews were completed, including some from the original set of counties in the PPS service area. A total of 56 interviews were conducted within the final service area of six counties. These interviewees were diverse on a number of indicators. Interviews were conducted in several counties, including Cayuga (7), Cortland (9), Herkimer (7), Lewis (4), Madison (8), Oneida (14), Onondaga (14), Oswego (9), and St. Lawrence (5). Additionally, the interviewees were diverse in the type of organization they represented. Interviewees included 10 hospitals located in six different counties. The hospitals represented by interviewees were Lewis County General, Community Memorial, Crouse, St. Joseph's, Oswego (4 interviews), and Canton-Potsdam Hospitals. There were 37 interviews with other health care providers. These other health care providers included county agencies (health, aging, and mental health departments), federally-qualified health centers, Health Home agencies, case management organizations, and hospice providers, among others. Finally, there were 30 interviews with community-based resources. These community based resources included ARC agencies, housing authorities, community action partnerships, community coalitions, rural health councils, the Salvation Army, and Catholic charities, among others. A list of interviewees, including name, organization, organization type, and county of location, can be found in Appendix I. The diversity in geography and organization type resulted in a saturation of themes surrounding resources and gaps in the service area.

Consumer Engagement Activities

Input from consumers is a critical part of the CNY PPS. In-person consumer engagement activities were conducted in each of the CNY counties. These activities ranged from structured focus groups to guided listening sessions to individual interviews. Both JSI and Eric Mower and Associates (EMA) conducted consumer engagement activities. Discussions with consumers were guided by an interview protocol. The protocol encouraged discussion on access barriers including provider communication, care coordination, and experience locating services.

Participants were recruited by partnership agencies in each County. Agencies included community organizations and mental health providers, among others. Participating agencies included: Central New York Adult Homes Inc., Cayuga County Mental Health Center, Liberty Resources, CazCares, Catholic

Charities, Hutchings Member Support Center, Sunrise Recovery Center, Faxton-St. Luke's Hospital and their Partner Advisory Committee members, Oswego Health, Lewis County Health department, North Regional Center for Independent Living, and the Human Services Center. These agencies were geographically spread to increase access to participants and ensure diverse perspectives. Agencies recruited participants either by asking patients who were attending the site for a visit to participate in a group or individual interview, or by active outreach to agency participants. In all over 100 individuals provided input on their experiences with the health care system. Participants in these activities were predominantly Medicaid recipients with a significant number also being covered by Medicare. The latter group of dually eligible was a combination of seniors and persons with developmental disabilities.

Several common themes emerged from the consumer input. These themes have been discussed and incorporated throughout the report, but are reiterated here as those that were of particular importance to consumers.

- Transportation is a significant problem with long wait times and inconsistent service from the "Medicaid taxis"
- Persons with mental health issues related feeling uncomfortable and made to feel "strange" when accessing primary care and other non-mental health services
- There is little communication between the various health care providers – lack of discharge planning and primary care knowing what behavioral health providers are doing
- Finding providers who take Medicaid is often difficult. This is particularly true for oral health care.
- Eye care is hard to access – Medicare does not pay for glasses
- There is a lack of knowledge about what resources are available in the community

Western and Central New York Low Income Consumer Survey (2013)

In 2013, JSI developed and implemented a Central New York Consumer Access Survey (CNYCSS). The 2013 Central New York Consumer Access Survey (CNYCS) was developed to understand consumer experience related to using primary care services in the region. The primary objective is to understand gaps in services encountered by adults accessing care for themselves and/or children. The survey questions, which were designed to mirror and complement the qualitative interviews with providers and other key informants, assesses consumers' experience scheduling appointments, reaching providers by phone, and ability to communicate with providers to access care and a medical home. The survey covered general health access barriers such as insurance status and communication as well as specific barriers to different types of medical services. The survey was designed based on the 2007 Western New York Consumer Access Survey (WNYCAS), which was developed primarily by drawing questions from existing state and national health surveys. Where questions were not available to address specific issues of interest to HFWCNY, JSI adapted similar questions from previous JSI surveys.

The goal of survey distribution was to capture families in two distinct groups: 1) those waiting for services and affiliated with one of the community health centers or other pediatric providers that serve

low-income families; and 2) families in the community whose status related to the safety-net utilization were unknown. The survey was distributed face-to-face to parents at community agencies, events, and provider offices with the cooperation of numerous organizations and individuals across the central New York region. A total of 531 surveys were collected from September through October 2013.

The findings of this survey were used to inform the data collection for the DSRIP application. The results of the survey were discussed thoroughly in the 2013, and the executive summary of the findings of this report are included as Appendix D. The detailed review of the results of the CNY Consumer Access Survey is included in Appendix E.

Central New York Safety Net Assessment (2013)

In 2013, JSI with the support of the Health Foundation of Western and Central New York conducted a primary care and safety net assessment in Central New York that focused on eight counties in Central New York including all of the counties that are part of the CNYCC's service area. This assessment involved the following eight counties: Cayuga, Cortland, Herkimer, Madison, Oneida, Onondaga, and Oswego. JSI used both quantitative and qualitative methods to identify key gaps in the safety net in this region at the zip code level. The analysis included characterizing safety net providers, the Medicaid population, health status and indicators of inappropriate care, rates of admission and rates of discharge across the eight included counties. The key findings of this report also served as the foundation for this needs assessment for the DSRIP application. The executive summary of the findings of this past needs assessment are included in Appendix F.

Quantitative and qualitative data was first reviewed on the county-level, and county profile reports of the data were created. These profiles should be reviewed for a more in-depth understanding of county-specific issues. This report summarizes issues across the participating counties.

New York State Prevention Agenda Needs Assessments

The qualitative assessment that was conducted as part of the CNYCC CNA also involved a review of prior needs assessments conducted by local health departments and hospitals in conjunction with the New York State Prevention Agenda. The purpose of this step was to explore whether the findings of the CHA aligned with past assessments.

D. Synthesis and Analysis of Data

The quantitative and qualitative data was assessed at the county level. These data were used to develop profiles of counties participating in the PPS. For a more in-depth understanding of county-specific issues, these reports should be reviewed. After finalizing the county profiles, this summary report was created. This summary report draws on themes and findings across counties for challenges and resources that are available at the regional level.